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(54) **Wall unit for medical institutions**

(57) A wall unit is provided, suitable for use in medical institutions, such as hospitals, nursing homes and rest homes, which comprises a substantially vertical service column, a surround and a movable cupboard that is functionally connected to the surround. The wall unit is preferably fitted to the wall, substantially free from the floor. The movable cupboard is preferably connected to the surround by a telescopic device and/or a hinged joint. It is preferred that the wall unit also comprises a bedside table, which is preferably functionally connected to the movable cupboard and easily movable over the bed in various positions. The service column which may be closed off entirely or in part, is preferably provided with connections for medical gases, electrical terminals and one or more means for connecting medical apparatus and/or drips and can be optionally arranged as an extra storage place.

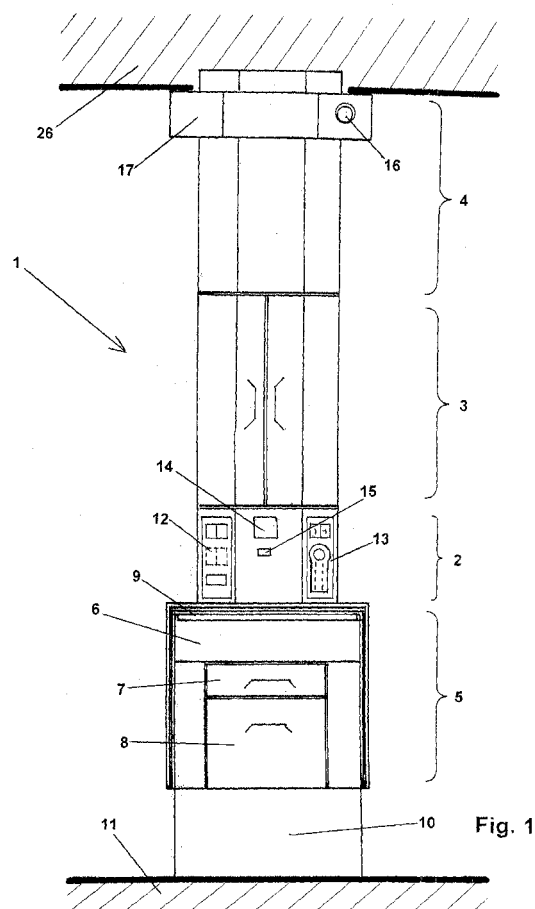


Fig. 1

## Description

**[0001]** The present invention relates to a wall unit suitable for use in medical institutions, such as hospitals, nursing homes and rest homes.

**[0002]** These days virtually all wards and rooms of modern hospitals and of many nursing and rest homes are equipped with horizontal panels, fitted to the wall, in which connections for all possible facilities, such as, in particular, medical gases, electric devices (for instance, monitors), wall sockets, TV and telephone have been accommodated, through which a patient - mostly confined to bed - can be attended to in a suitable way. In addition, the patient often has a rolling bedside table next to the bed, to which a table leaf has been fitted, which is usually of an adjustable height and which can be slid over the bed and tilted, so that the patient is provided with several conveniences. If a patient needs a drip, the required infusion bags are usually hung onto a rolling drip support, which is also next to the bed.

**[0003]** This entirety leads more often than not to a complex assembly of connections to the patient and around the patient's bed.

**[0004]** It is an object of the present invention to bring some order to these connections in a functional and aesthetic manner.

**[0005]** It was surprisingly found that this objective could be achieved by means of an integrated wall unit, in which substantially all required facilities and connection points have been integrated and which, moreover, has an aesthetic appearance.

**[0006]** Therefore, the present invention is characterised in that this wall unit comprises a substantially vertical service column, a surround and a movable cupboard that is functionally connected to the surround.

**[0007]** JP-A-2000-126252 (Matsushita Electric Works) discloses a daily usage articles accommodation for medical treatment chamber of old persons having a care panel with switch for lights provided in the accommodation shelf opening.

**[0008]** US 4,400,044 (Yoshiyuki) discloses a modular cabinet system comprising a modular unit of a first rectangular cabinet, and a first standing mirror spaced from the cabinet and disposed in the plane of the back side of the rectangular cabinet.

**[0009]** DE-U-29 806 364 (Seifarth) discloses a vertical auxiliary wall unit which is a combination of a piece of furniture and a technical unit for the patient's bed care.

**[0010]** JP-A-2000-014722 (Kansai Seisakusho) discloses a medical cabinet for installation to bed side of e.g. ward to store clothing, livelihood article, and the like.

**[0011]** None of these documents teach or suggest the present invention.

**[0012]** It is efficient and preferred to fit the wall unit to the wall in such a way that it is substantially free from the floor. The space between the bottom of the unit and the floor is not critical, but is preferably approximately 30 cm. This will leave the floor surface free, so that the

floor can be more easily kept clean or, if required, used for other applications. According to a further preferred embodiment of the invention a support panel is fitted to the rear wall between the bottom of the wall unit and the floor, on which the unit rests. This support panel may also form one entirety with the wall unit and, as such, be part of the unit.

**[0013]** The movable cupboard that is part of the wall unit and usually comprises at least one drawer and another storage part is preferably connected to the surround by means of a telescopic device and/or a hinged joint, so that it can be moved next to or near to the patient's bed. The surround itself is preferably designed as a shelf, onto which a telephone and possible other objects are conveniently placed.

**[0014]** The wall unit preferably also comprises a bedside table. According to a preferred embodiment of the invention the bedside table is functionally connected to the movable cupboard, and can be moved with respect to the cupboard by means of a telescopic device and/or a hinged joint, as a result of which the bedside table has many degrees of freedom and can, according to the choice of the patient or assistants, be placed over or near the bed. The bedside table is usually of an adjustable height and can, as a rule, be tilted in such a way that it can be used as a reading table.

**[0015]** In an alternative embodiment of the invention the bedside table is not connected to the movable cupboard, but to another part of the wall unit, for example, to the outer side of the surround or to the wall.

**[0016]** The service column, which is part of the wall unit according to the invention, preferably extends in an upward direction to, into or near the ceiling and preferably comprises essentially all connection points for medical gases, electric connection points and elements to fit medical equipment and/or drips. In this way the various supply lines for medical gases, electricity, telephone, TV, etc., can be entirely concealed, which is the preferred embodiment of this invention. If necessary, the supply lines to the service column can also be routed to the column from underneath or through the wall to which the column has been fitted.

**[0017]** Preferably the service column is realised such that it is divided into a number of sections. The first section, for example, containing all or substantially all electric connections, such as, for example, wall sockets for 220-230V (and/or 115V or another suitable voltage), and connections for telephone, TV and data reception, etc., and possible connection points for monitors and other equipment. It is efficient to divide this section for its application into a low-voltage part and a part in which the mains voltage can be used. In principle, the patient can also use this section direct. A second section of the service column is preferably intended for the connection of medical gases, connection means for drips, etc. This section can also be fitted with one or more electric sockets, for example, for the power supply to equipment related to the metering of medical gases or drip liquid. In

this section also connections for potential equalising points (earth points) may be fitted.

**[0018]** When the wall unit is used for nursing homes and similar institutions, it is often advantageous that the aforementioned second section be arranged as an extra storage space. A third section of the service column can, for example, be solely intended to conceal the various supply lines and therefore, if desired, serve as an additional storage space. In this way a functional and effective arrangement of the column is achieved. Preferably, the service column is at least be partly closed off, in particular the section accommodating the connections for the medical gases. The closing off is realised, for example, by means of swing doors or similar elements, which is fitted with a lock, if desired. Preferably, the swing doors are made such, for example symmetrical, that the inside of the doors can also be effectively used. For instance, a preferably substantially vertical post can be fitted for the fixing of drip bags, or one or more brackets to hold control equipment.

**[0019]** At the top, near the ceiling, the service column is preferably entirely or partly encased in a surround, for example, a cove, in which lighting can be fitted, if desired. Apart from this indirect lighting, in or on the surround direct lighting in the form of a reading lamp of bedside lamp for the patient can be conveniently accommodated.

**[0020]** If desired, the service column is further equipped with a monitor or another functional device, preferably for a medical application.

**[0021]** The wall unit according to the invention can be realised in different materials, for example in wood and/or metal and/or synthetic material. The choice of materials is in itself not essential for the invention and will, to a large extent, be determined by the taste of the designer and the buyer.

**[0022]** The present invention will now be further explained, by way of example, with reference to the following embodiment and the accompanying figures, which however should not be regarded as a limitation of the invention. In the various figures the same reference numbers have been used for the same or similar elements.

**[0023]** Figure 1 is a schematic front view of an embodiment of the wall unit according to the invention.

**[0024]** Figure 2 is a schematic side view of the wall unit of Figure 1.

**[0025]** Figure 3 is a schematic top view of the wall unit of Figure 1, with a movable cupboard with drawer and a bedside table in extended position.

**[0026]** Figure 4 is a schematic partial view from the topside of the wall unit of Figure 1, with part of the service column's interior in stored position.

**[0027]** Figure 5 is a schematic front view of a section of the service column of the wall unit of Figure 1 in swivelled-out position, in which connections for medical gases, as well as fixing elements for drips, etc. are shown.

**[0028]** Figure 6 is a schematic top view of the section

in Figure 5.

**[0029]** In Figures 1 and 2 a preferred embodiment of the wall unit according to the invention is shown. Wall unit 1 comprises a substantially vertical service column (2, 3, 4), a surround 5, with connected to it a movable cupboard 6, that can be pulled forward, out of surround 5. Cupboard 6 is fitted with a drawer 7 and another storage space 8, in this embodiment provided with a revolving door, to which an extendible and hinged bedside table 9 has been fitted. The wall unit rests on a support panel 10, which rests on floor 11 at the opposite side and has been secured to the rear wall. The service column has been divided into a section 2 for the electric connections, amongst which electric sockets (subsection 12), telephone and data connection (subsection 13) and lighting 14 with switch 15, a lockable section 3 with, amongst other things, the connections for medical gases and the fixing elements for drip, etc. and a section 4 in which the supply lines have been concealed. If desired, section 4 can be fitted with hinged, lockable panels or a similar construction and can, in that case, be laid out as, for example, an additional storage space.

**[0030]** At the top side of section 4 of the service column it can be seen that the column extends to above the cover panels of ceiling 26. Around the service column near the ceiling a cove 17 is conveniently placed, to which a bedside light 16 is fitted. The lighting fitted at the inside of the cove and which takes care of the indirect lighting is not visible.

**[0031]** In top view of Figures 3, 4 and 6 the hexagonal shape of this embodiment of the wall unit according to the invention is clearly visible. However, it will be clear to a person skilled in the art that the invention is not limited to this embodiment and that also other shapes, such as square or rectangular shapes, and if so desired, also round or oval shapes of the wall unit and its various components are suitable. All such various shapes are included within the present invention.

**[0032]** Figure 3 shows how cupboard 6, according to this embodiment, is pulled out of surround 5. The cupboard will remain free from the floor in extended or swivelled-out position, so that the floor surface stays free and can be kept clean more easily or be used for other purposes. At the same time drawer 7 is shown in the opened position. Further is indicated in which way bedside table 9 can be fitted, hinged, to cupboard 6 at pivot point 22 and can be subsequently turned away from the topside of the cupboard. Pivot point 22 is, for example, a telescopic spring, which at the same time allows adjustment of the bedside table's height.

**[0033]** Figure 4 shows how bedside table 9 can be moved further along the extension element 18. Furthermore, the bedside table can be tilted into one or several reading positions at hinging points 19. In the top view of the service column section 3 is also shown, in which the fixing elements 20 and 21 at the inside of the lockable doors are visible. Both in Figure 4 and in Figure 6 the preferred functional shape of the hexagonal service col-

umn, providing plenty of room for the fixing elements at the inside of the doors, is clearly visible.

**[0034]** Figure 5 shows a possible layout of section 3 of the service column. Three connection points 23 for medical gases (usually oxygen, air and vacuum), wall sockets 24 and earth points 25 have been drawn, as well as a fixing post 20 to hang drip bags and fixing brackets 21 to hold control equipment.

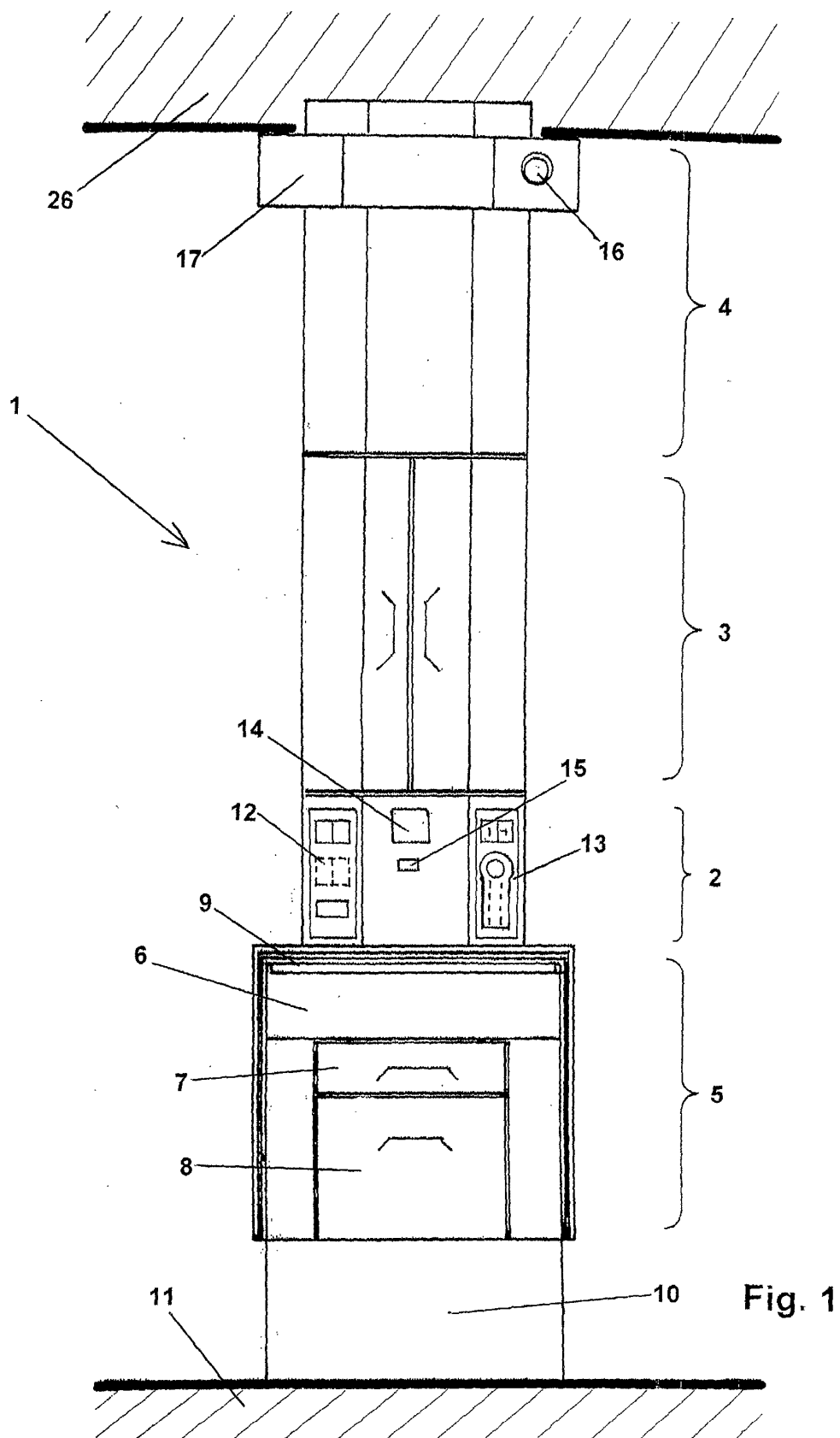
**[0035]** The wall unit according to the invention is assembled efficiently by first fitting the supply lines, and subsequently installing the connections for the medical gases and possible other specialist facilities. Next, support panel 10 is secured to the wall (of course it is also possible to do this first), after which surround 5 with cupboard 6 is assembled, followed by the other parts of the service column and finally cove 17. It will be clear to a person skilled in the art that the assembly, if so desired, can also be carried out in a different way, or by changing the order of the abovementioned steps.

**[0036]** While specific embodiments of the the present invention have been described, various modifications, substitutions and additions will become apparent to persons skilled in the art by this disclosure. For example, modifications of the embodiments herein described are considered within the present invention, in which a horizontal service column (already existing or new) is extended with a surround and a movable cupboard that is functionally connected to the surround, which is optionally provided with a bedside table, preferably functionally connected to the movable cupboard, as herein described. All such embodiments, modifications, substitutions and additions are within the scope of the present invention, and are intended to be covered by the appended claims.

## Claims

1. Wall unit for medical institutions, **characterised in that** said wall unit comprises a substantially vertical service column, a surround and a movable cupboard that is functionally connected to the surround.
2. Wall unit according to claim 1, wherein the unit is fitted to the wall, substantially free from the floor.
3. Wall unit according to claim 1 or 2, wherein the movable cupboard is connected to the surround by a telescopic device and/or a hinged joint, and said movable cupboard preferably comprises at least a drawer and an additional storage place.
4. Wall unit according to any one of the preceding claims, which further comprises a bedside table, wherein said bedside table preferably is functionally connected with the movable cupboard, preferably by a telescopic device and/or a hinged joint.

5. Wall unit according to claim 4, wherein the bedside table is of an adjustable height, can be placed over the bed of a patient, and can be tilted such that it can be used as a reading table.
6. Wall unit according to any one of the preceding claims, wherein the service column extends upwardly into or near the ceiling, and preferably comprises connections for medical gases, electric and earth terminals, and one or more means for connecting medical apparatus and/or drips.
7. Wall unit according to claim 6, wherein the service column comprises at least a first section, provided with electric terminals, and another section, either provided with connections for at least one or more medical gases, sockets, earth terminals and/or securing means for drips, or which can be used as storage place, wherein said service column preferably can be closed off at least in part.
8. Wall unit according to any one of the preceding claims, wherein the service column is entirely or partly encased in a surround near the ceiling.
9. Wall unit according to claim 8, wherein lighting is fitted in or on the surround.
10. Wall unit according to any one of the preceding claims, wherein a monitor is arranged on the service column.



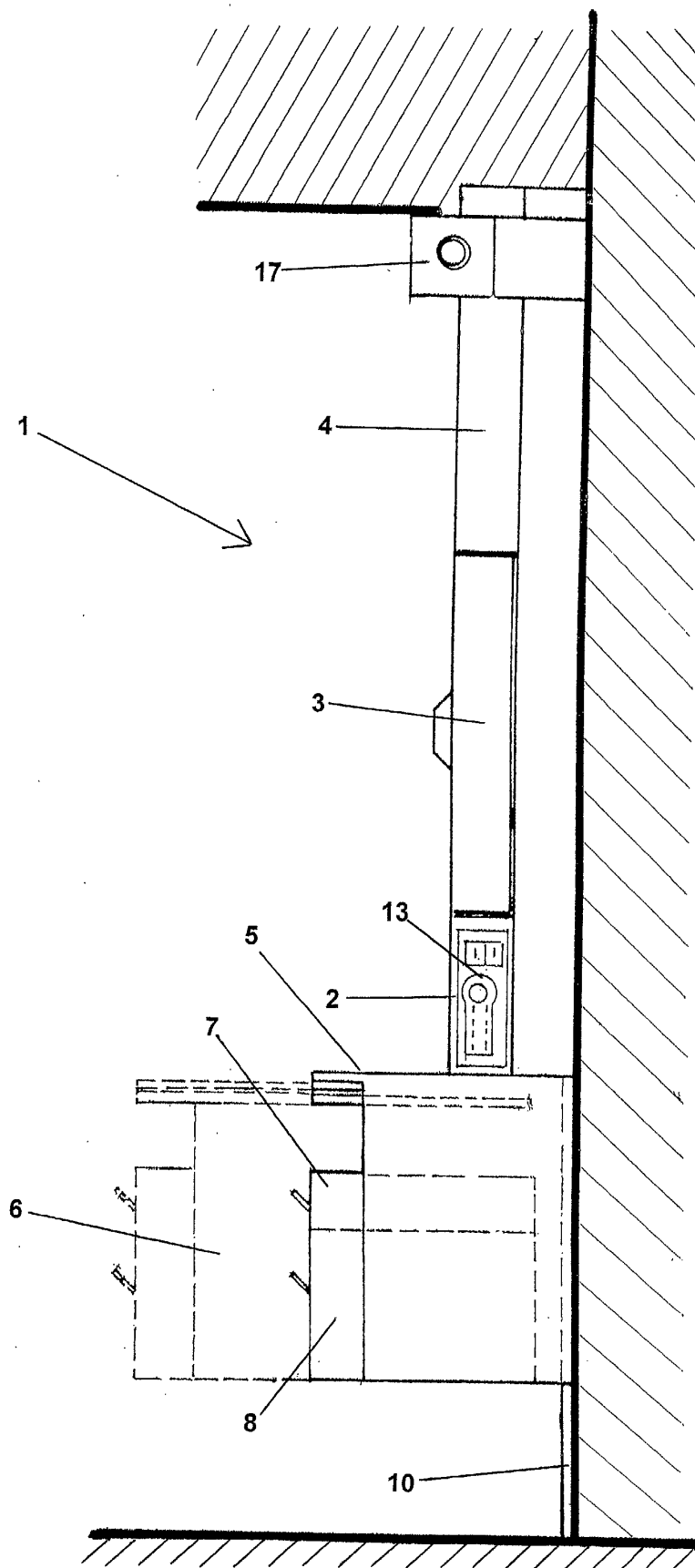


Fig. 2

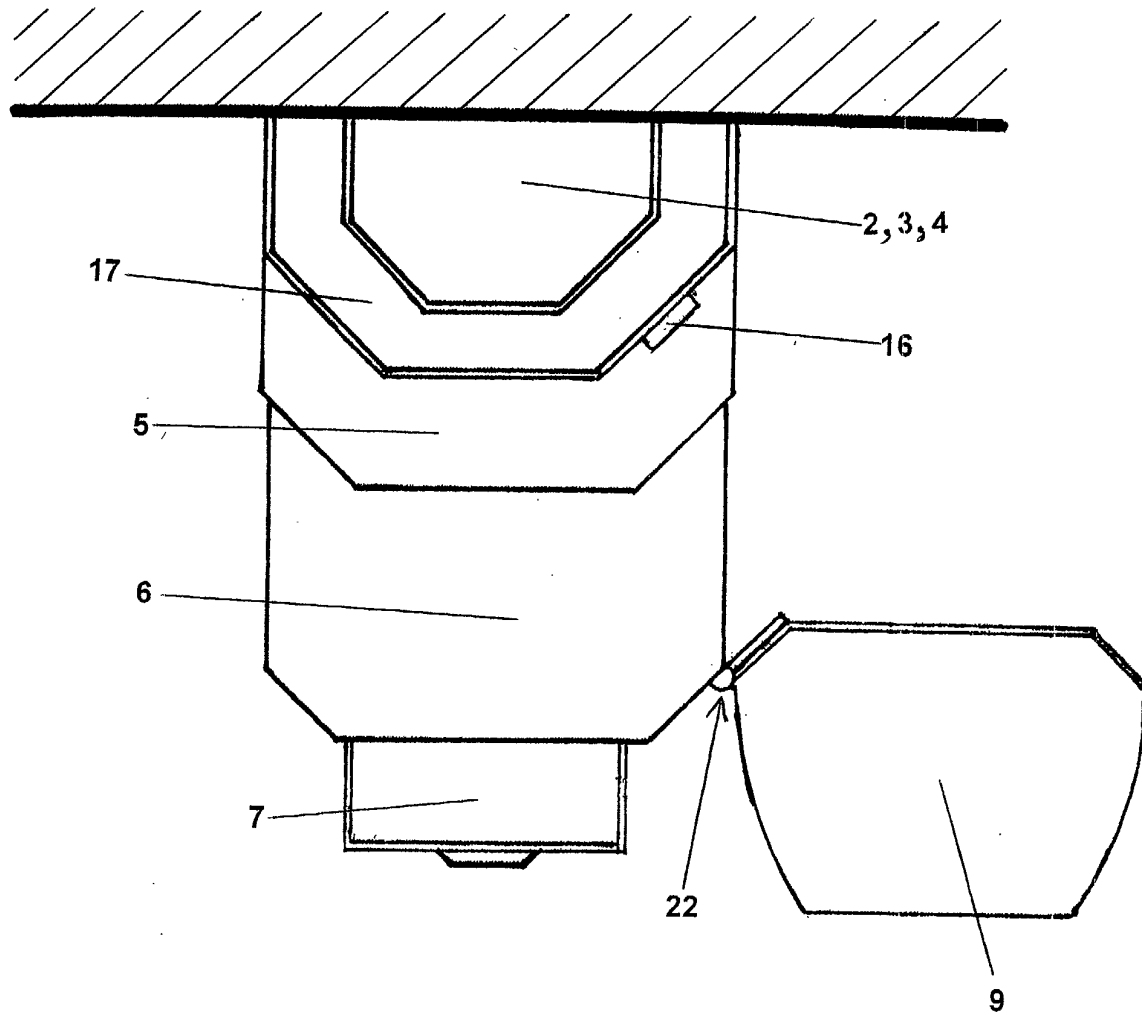


Fig. 3

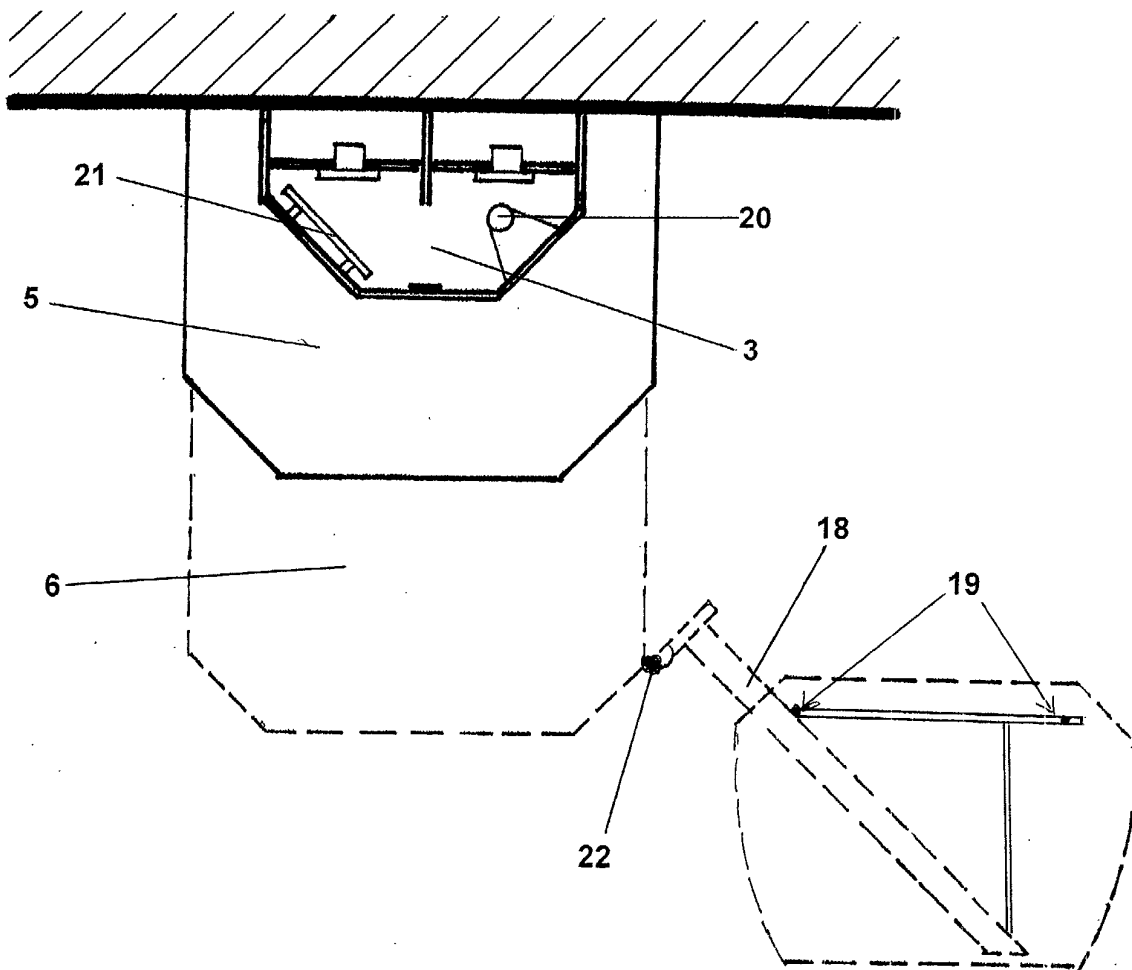


Fig. 4

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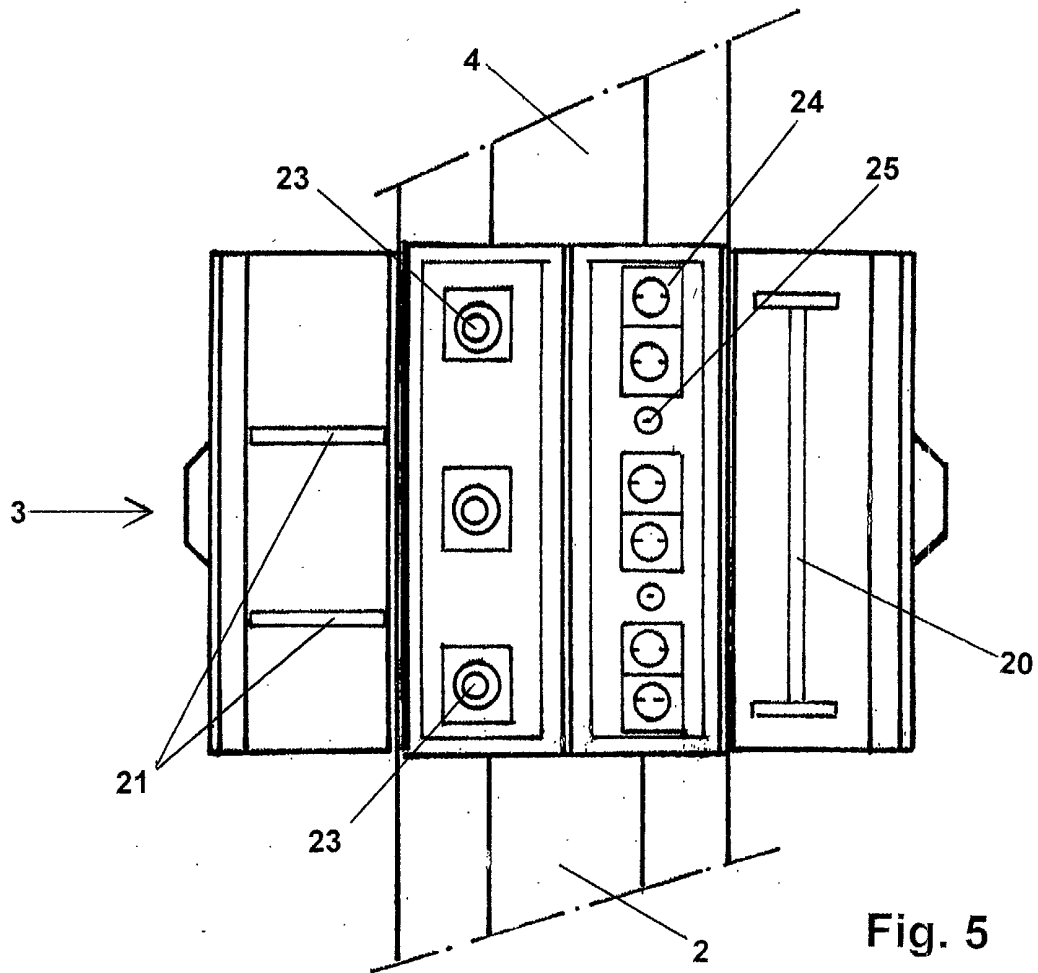


Fig. 5

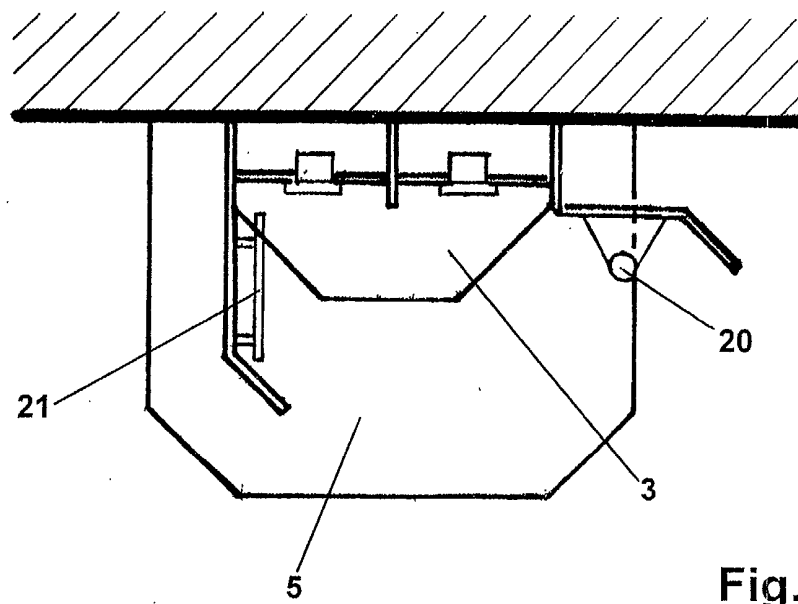


Fig. 6