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Description

This invention relates to a unit of catering or other equipment, to a catering facility comprising one or more units of catering equipment and particularly, but not exclusively, to catering facilities or units which employ fluid.

Increasingly strict hygiene requirements for commercial catering establishments, in particular requirements for cleaning both of catering equipment and the floor area on which it is usually located, has led to the development of mobile catering units. The design of such mobile units is complicated by, firstly, the fact that catering equipment is generally large and unwieldy. Secondly, many units of catering equipment require connection to a source of electricity or water and the units, therefore, have to be arranged so that the area around the connection points can also be adequately cleaned.

The problem of cleaning catering equipment requiring service connections is addressed in British Patent Application 2243422. This describes a unit of catering equipment, such as a sink unit, which is mounted on wheels and is provided with a plurality of connector elements which, when the unit is in an appropriate operational disposition, automatically couple with corresponding connector elements provided on a fluid flow service line whereby fluid is supplied to the unit. The unit is held in place by the engagement between the two sets of connector elements. Latching means is provided for decoupling the sets of connector elements to allow the unit to be rolled away. The design requires the use of relatively complicated connector elements for all fluid flow lines within the unit. Further, these connector elements could potentially be damaged if the unit was moved, which it is free to do whether connected or disconnected from the fluid supply line, without decoupling the connector elements.

US-A-3663081 discloses a portable camp-stove cabinet carried on a plurality of legs, each of which is provided with a ground support member in the form of a cane tip.

GB-A-988132 discloses an article of furniture comprising a body carried on a plurality of legs, each of which is provided with a ground support member, certain of the ground support members comprising rotary translational elements and the remainder being flat.

A unit of catering or other equipment in accordance with the invention comprises a body carried on a plurality of legs, each of which is provided with a ground support member, certain of the ground support members comprising rotary translational elements and the remainder being flat, characterised that in a first, locked, state, in which all the ground support members are in contact with the ground, the unit is fixed in position, whilst in a second, free, state, in which the flat ground support members are raised above ground level, the unit's location can be changed and in that at least one of the legs provided with a rotary translational element is extendable, extension

thereof causing the unit's state to change from locked to free.

The unit is, therefore, rendered movable by an integral part thereof which is robust. Retraction of the extendable leg will, on the other hand, fix the unit in position with no danger of it moving due to it being accidentally knocked. The extendable leg or legs can be located so as to be easily accessible to operating personnel so that the need for a lever extending to connectors, which by their very nature will inevitably be at the rear of the unit, is obviated.

With this arrangement, the number of legs which need to be provided with rotary translational elements is minimised. Since these are much more likely than flat ground support members to trap dirt and to become entangled with cloths or mops, the unit is more hygienic in use. Further, the risk of movement of the unit being arrested by failure of one of the rotary translational elements due to material being entangled therewith is also minimised.

The or each extendable leg may comprise two relatively movable sections, the first section connected to the body and the second section connected to the rotary translational element, and means for operating the leg to cause movement of one section relative to the other to extend or retract the leg. The operation means may comprise a lever mechanism consisting of a lever hinged to the first section and a connecting rod pivotally connected between the lever and the second section. Suitably the lever mechanism constitutes a toggle with the result that the leg will be held in either the extended or retracted condition thereof until the lever mechanism is next operated to bring it into the other condition. This will facilitate movement of the unit.

A catering facility, which may at present be provided as a single "unit", may be subdivided into a number of units of equipment in accordance with the invention, each of which may be independently movable. The units or subunits can, therefore, be made of smaller size which will facilitate their movement for cleaning purposes.

In a preferred embodiment, at least one of the units is such that in a first, locked, state it is fixed in position, whilst in a second, free, state its location can be changed, the unit being provided with means for changing its state from locked to free, and *vice versa*.

The facility can, therefore, be very simply split into its component units or subunits and reformed therefrom. In particular, after cleaning, all the operative has to do is move the units or subunits back together and return them to the fixed state.

Many catering units or facilities employ fluid. Suitably a unit which requires a fluid supply, such as a dishwasher, is provided with a fluid storage tank mounted thereon which is releasably connected to the mains water supply. The connection to the mains water supply line is preferably via a fluid pipeline which terminates above the upper extremity of the fluid storage tank.

Additionally or alternatively, a unit of catering equipment of the type which employs fluid may be arranged

so that the fluid waste pipe thereof is automatically operatively connected to a mains waste pipe when the unit is moved into an operational disposition. In particular this may occur when the unit is moved from the free to the locked state discussed above. Even more particularly, this may occur when the unit is lowered due to retraction of an extendable leg thereof and the coupling may simply be achieved by insertion of the unit's fluid waste pipe into a larger diameter mains waste pipe.

The rotary translational elements may be in the form of wheels, rollers or castors, but are preferably in the form of ball castors, since these have been found to reduce significantly the amount of dirt and debris which is trapped at the base of the unit's legs. Further, ball castors permit easier manipulation of a unit's position.

The invention will now be further described by way of example with reference to the accompanying drawings in which:-

Figure 1 is a plan view of a catering facility in accordance with the invention;

Figure 2 is a side view of the catering facility of Figure 1 showing the units thereof in the locked state;

Figure 3 is a side view of the catering facility of Figure 1 showing the units thereof in the free state;

Figure 4 is a side view of means for changing the state of the units of the facility of Figure 1; and

Figure 5 is an oblique view of an alternative embodiment of a dishwasher unit of the facility of Figure 1.

The catering facility 2 shown in Figures 1 to 3 comprises three units, a soilware table and sink 4, a dishwashing machine 6 and a cleanware table 8. The facility 2 is shown with the units 4, 6, 8 thereof in an operational disposition fixed in place in a catering establishment. The sink unit 4 is connected by flexible lines 10 to a wall mounted distribution unit 12 which in turn is connected to hot and cold water supplies. The connection between the wall mounted distribution unit 12 and flexible lines 10 is suitably by way of quick-release couplings, in particular double shut-off base and satellite connector assemblies. The flexible lines 10 can, therefore, be readily released from the distribution unit 12 when the sink unit 4 is to be moved out of its operational disposition for cleaning purposes. The lines 10 are so connected to the sink unit, see Figure 3, that when disconnected from the distribution unit 12, their extremities are above floor level and so they do not interfere with movement of the sink unit 4. Furthermore, since the connection between the lines 10 and the distribution unit 12 is above floor height, food and debris will not be trapped thereby at floor level.

The dishwasher unit 6 is also connected by flexible lines 10a to a second distribution unit 12a. The arrangement of the lines 10a and distribution unit 12a is identical to that of the corresponding parts provided for the sink unit 4. In addition, the dishwasher unit 6 is provided with an electrical cable 14 which can be plugged into a wall mounted electrical supply socket 16 which is suitably earthed.

The legs 17 of the units 4, 6, 8 are all provided with ground support members either in the form of flat plates 18 or in the form of some sort of rotary element 20, such as a wheel, a roller or a castor. Ball castors are less likely to entrap dirt or become entangled with material. Moreover they render the units easier to manoeuvre. On Figure 1, the location of the flat elements 18 are indicated by a cross, whilst those of the rotary element 20 are indicated by a solid circle. It will be seen therefrom that all the legs of the dishwasher 6 are provided with rotary elements 20. The other two units 4 and 8 are provided with rotary elements 20 along one side thereof, with a single rotary element being provided on the opposite side at an intermediate position, see 20a and 20b. These rotary elements 20a and 20b serve to support an extendable leg 22, one of which is provided on each of the units 4 and 8.

As shown in Figure 4, each extendable leg 22 consists of two sections 24 and 26. The first, main, section 24 is secured to the main body of the unit in whatever form this takes, for example Figure 4 illustrates the extendable leg 22 which forms part of the cleanware table 8 and the first section 24 is there connected to side struts 26 of the table 8. The connection may, as illustrated, consist of flanges 28 bolted to the body of the appropriate unit 4 or 8. The second section 26 of the extendable leg 22 includes a body 29, the upper part of which is dimensioned to fit within the first section 24. The body 29 carries a wing 30 and is connected therebelow to the rotary element 20b.

At its upper end, the first section 24 of the extendable leg 22 is provided with a lever arm 32 pivotally connected, see 34, thereto. A connecting rod 36 is pivotally mounted between the lever arm 32 and the wing 30 of the second extendable leg section 26.

The extendable leg 22 is shown in Figure 4 in its retracted position in which all the ground support elements 18 and 20 of the unit 4 or 8 on which it is carried will be in contact with the ground. The unit 4 or 8 will, therefore, be fixed in position. Rotation of the lever arm 32 in the direction of arrow 38 will cause the leg 22 to extend. This will raise the side of the unit 4 or 8 on which it is mounted lifting the flat ground support elements 18 of that unit 4 or 8 out of contact with the ground. The unit 4 or 8, after uncoupling from any supplies thereto, can then be rolled away on the rotary elements 20, 20b.

The lever 32 and connecting rod 36 preferably constitute a toggle whereby when the lever 32 is moved to extend or retract the leg 22, it will hold the leg 22 in that position until moved to the retracted or extended condition. Thus the operative's hands will be left free to move the unit 4 or 8, when this is freed by extending the leg 22.

Extension of the extendable legs 22 raises the unit 4 or 8 to which it is mounted. For the sink unit 4, this can be used to decouple the fluid waste pipes 40 thereof from the mains waste pipes 42, if the former are dimensioned such as to be freely receivable into the latter. Conversely, retraction of the extendable leg 22 of the sink unit 4 with this appropriately positioned, will re-couple the fluid

waste pipes 40 thereof with the mains waste pipes 42. The need for complicated and expensive couplings between these two sets of pipes 40, 42 is thereby obviated.

The drain on unit 6 will either be into a floor outlet or by means of a pumping device into a vertical extension of the mains waste pipe 42.

Adjustable spacers may be fixed to the walls to ensure that at least the dishwasher unit 6 will always return to its original place after cleaning. The other units 4 and 8 can then be suitably located relative to it.

Figure 5 shows an alternative embodiment of the dishwasher unit 6. This differs from that of Figures 1 to 3 in that it is provided with a dedicated fluid storage tank 68 attached to the rear thereof. This is supplied from the water supply via a supply line 71, 70. The end of supply line 70 is protected by roof 72. The water level in tank 68 is controlled by a float 74 but, for safety, an overflow 76 is also provided. Water from the tank 68 passes to dishwasher unit 6 via feed pipe 78.

With the arrangement of Figure 5, the option is provided of filling the dishwasher unit wash tank with hot water from an external source if this is desired. Regulations require that commercial dishwashers shall incorporate an air gap between the outlet of the main water supply and the unit of specified dimensions. This is known as a Type "A" air gap. The only other permitted alternative is that the dishwasher may be supplied via an independent pipe from independent storage. It can often be difficult or expensive to satisfy these requirements. The arrangement of Figure 5 allows a Type "A" air gap to be achieved without difficulty by use of a dedicated tank 68 which may be attached to the machine or an adjacent surface.

The facility 2 shown in Figures 1 to 3 has generally hitherto consisted of a single unit comprising a soilware table, a sink unit, a dishwasher and a cleanware table, all integrally connected. Such a unit was obviously difficult to manoeuvre for cleaning purposes. By splitting the parts and making each individually movable, these difficulties are obviated. Each individual unit, or subunit, 4, 6 or 8 is readily movable when the extendable legs 22 of units 4 and 8 are retracted. The units 4 and 8 can then be readily rolled away and only a small number of rotary elements will be required for this purpose. To return the facility 2 to its working state, all that is required is to roll each unit 4, 6 and 8 into the operative disposition and then to retract the extendable legs 22 which will automatically reconnect the sink waste pipes 40 to the mains waste pipes 42.

It will be appreciated that, whilst described specifically above in relation to a dishwashing facility, the invention has much wider applicability. Any unit of catering equipment could be provided with an extendable leg of the type described above so that it can be alternatively fixed and movable. Further, any such unit could be split down to a number of movable subunits.

Claims

1. A catering equipment unit (4,8) comprising a body carried on a plurality of legs, each of which is provided with a ground support member, certain of the ground support members comprising rotary translational elements (20) and the remainder being flat (19) characterised in that in a first, locked state, in which all the ground support members are in contact with the ground, the unit (4,8) is fixed in position, whilst in a second, free, state, in which the flat ground support members (18) are raised above ground level, the unit's location can be changed and in that at least one of the legs (22) provided with a rotary translational element (20) is extendable, extension thereof causing the unit's state to change from locked to free.
2. A unit (4,8) according to Claim 1 characterised in that the or each extendable leg (22) comprises two relatively movable sections (24,26) the first section (24) being connected to the body and the second section (26) to the rotary, translation element (20), and means (30,32,34,36) for operating the leg (22) to cause movement of one section relative to the other to extend or retract the extendable leg (22).
3. A unit (4,8) according to Claim 2 characterised in that the operating means comprises a lever mechanism consisting of a lever (32) hinged to the first section (24) and a connection rod (36) pivotably connected between the lever (32) and the second section (26).
4. A unit (4,8) according to Claim 3 characterised in that the lever mechanism (32,36) constitutes a toggle with the result that the extendable leg (22) is held in either the extended or retracted condition thereof until the lever mechanism (32,36) is next operated to bring it into the other condition.
5. A unit (4,8) according to any preceding Claim characterised in that the unit (4,8) requires a fluid supply and in that a fluid storage tank (68) is provided which is mounted on the unit (4,8) and which is releasably connectable to a mains water supply.
6. A unit (4,8) according to Claim 5 characterised in that the releasable connection is via a fluid pipeline (70) which terminates above the upper extremity of the fluid storage tank (68).
7. A unit (4,8) according to any preceding Claim characterised in that the unit employs fluid and in that a fluid waste pipe (40) thereof is automatically operatively connected to a mains waste pipe (42) when the unit (4,8) is moved into an operative disposition and is moved from the free to the locked state.

8. A unit (4,8) according to any preceding Claim characterised in that the rotary translational elements (20) are in the form of ball castors.
9. A unit (4,8) according to any preceding Claim characterised in that the extendable leg (22) is located so as to be easily accessible to an operator. 5
10. A catering facility (2) comprising at least one catering equipment unit (4,8) according to any preceding Claim. 10

Patentansprüche

1. Gaststättenausrüstungs- bzw. Cateringeinrichtungseinheit (4, 8), umfassend einen Körper, der von einer Vielzahl an Füßen getragen wird, von denen jeder mit einem Bodenstützelement versehen ist, wobei bestimmte Bodenstützelemente drehbare Verschiebeelemente (20) umfassen und der Rest eben (18) ist, dadurch gekennzeichnet, daß in einem ersten, verriegelten Zustand, in dem alle Bodenstützelemente den Boden berühren, die Einheit (4, 8) in Position fixiert ist, während in einem zweiten, freien Zustand, in dem die ebenen Bodenstützelemente (18) über Bodenniveau angehoben sind, die Lage der Einheit geändert werden kann, und daß zumindest einer der Füße (22) mit einem drehbaren Verschiebeelement (20) ausziehbar ist, wobei diese Verlängerung bewirkt, daß sich der Zustand der Einheit vom verriegelten zum freien Zustand ändert. 15 20 25 30
2. Einheit (4, 8) nach Anspruch 1, worin der oder jeder ausziehbare Fuß (22) zwei relativ bewegliche Abschnitte (24, 26), wobei der erste Abschnitt (24) mit dem Körper und der zweite Abschnitt (26) mit dem drehbaren Verschiebeelement (20) verbunden ist, sowie Mittel (30, 32, 34, 36) zum Betätigen des Fußes (22) umfaßt, um eine Bewegung eines Abschnitts relativ zum anderen zu bewirken, um den ausziehbaren Fuß (22) auszuziehen oder einzuziehen. 35 40
3. Einheit (4, 8) nach Anspruch 2, worin das Betätigungsmittel einen Hebelmechanismus umfaßt, der aus einem Hebel (32), der am ersten Abschnitt (24) angelenkt ist, und einer Verbindungsstange (36) besteht, die schwenkbar zwischen dem Hebel (32) und dem zweiten Abschnitt (26) verbunden ist. 45 50
4. Einheit (4, 8) nach Anspruch 3, worin der Hebelmechanismus (32, 36) eine Wippe bildet, so daß der ausziehbare Fuß (22) entweder in seinem ausgezogenen oder eingezogenen Zustand festgehalten wird, bis anschließend der Hebelmechanismus (32, 36) betätigt wird, um ihn in den anderen Zustand zu bringen. 55

5. Einheit (4, 8) nach einem der vorhergehenden Ansprüche, worin die Einheit (4, 8) eine Fluidzufuhr erfordert und ein Fluidspeichertank (68) vorgesehen ist, der auf der Einheit (4, 8) befestigt und lösbar mit einer Hauptwasserzufuhr verbindbar ist.
6. Einheit (4, 8) nach Anspruch 5, worin die lösbare Verbindung über eine Fluidleitung (70) erfolgt, die oberhalb des oberen Endes des Fluidspeichertanks (68) endet.
7. Einheit (4, 8) nach einem der vorhergehenden Ansprüche, worin die Einheit Fluid verwendet und ein Fluidabflußrohr (40) davon automatisch operativ mit einem Hauptabflußrohr (42) verbunden ist, wenn die Einheit (4, 8) in eine Betriebsanordnung und vom freien zum verriegelten Zustand bewegt wird.
8. Einheit (4, 8) nach einem der vorhergehenden Ansprüche, worin die drehbaren Verschiebeelemente (20) die Form von Kugellenkrollen aufweisen.
9. Einheit (4, 8) nach einem der vorhergehenden Ansprüche, worin der ausziehbare Fuß (22) so positioniert ist, daß er für eine Bedienperson leicht zugänglich ist.
10. Gaststätten- bzw. Cateringeinrichtung (2), umfassend zumindest eine Gaststättenausrüstungs- bzw. Cateringeinrichtungseinheit (4, 8) nach einem der vorhergehenden Ansprüche.

Revendications

1. Unité d'équipement de restauration (4, 8) comprenant un corps monté sur une pluralité de pieds pourvus chacun d'un organe de support au sol, certains organes de support au sol comprenant des éléments de translation tournants (20) et les autres étant plats (18), caractérisée en ce que dans un premier état bloqué, dans lequel tous les organes de support au sol sont en contact avec le sol, l'unité (4, 8) est fixée en place, alors que dans un deuxième état libre, dans lequel les organes de support au sol plats (18) sont soulevés au-dessus du niveau du sol, l'unité peut être déplacée et en ce qu'au moins un des pieds (22) munis d'un élément de translation tournant (20) peut être allongé, l'allongement de ce pied provoquant le passage de l'unité de l'état bloqué à l'état libre.
2. Unité (4, 8) suivant la revendication 1, caractérisée en ce que le pied ou chaque pied allongeable (22) comprend deux parties mobile l'une par rapport à l'autre (24, 26), la première partie (24) étant reliée au corps et la deuxième partie (26) étant reliée à l'élément de translation tournant (20), et un moyen (30, 32, 34, 36) pour actionner le pied (22) afin de

déplacer une partie par rapport à l'autre afin d'allonger ou raccourcir le pied allongeable (22).

3. Unité (4, 8) suivant la revendication 2, caractérisée en ce que le moyen d'actionnement comprend un mécanisme à levier composé d'un levier (32) articulé sur la première partie (24) et d'une bielle (36) reliée à pivotement entre le levier (32) et la deuxième partie (26). 5
4. Unité (4, 8) suivant la revendication 3, caractérisée en ce que le mécanisme à levier (32, 36) constitue une genouillère, ce qui a pour conséquence que le pied allongeable (22) est maintenu soit allongé soit raccourci jusqu'à ce que le mécanisme à levier (32, 36) soit ensuite actionné pour l'amener dans l'autre état. 10
5. Unité (4, 8) suivant l'une quelconque des revendications précédentes, caractérisée en ce que l'unité (4, 8) requiert une alimentation en fluide et en ce qu'une nourrice de fluide (68) est montée sur l'unité (4, 8) et peut être raccordée de manière séparable à une alimentation en eau principale. 15
6. Unité (4, 8) suivant la revendication 5, caractérisée en ce que le raccordement séparable se fait via une conduite de fluide (70) qui se termine au-dessus de l'extrémité supérieure de la nourrice de fluide (68). 20
7. Unité (4, 8) suivant l'une quelconque des revendications précédentes, caractérisée en ce que l'unité utilise du fluide et en ce qu'une conduite d'évacuation de fluide (40) de cette unité est raccordée automatiquement en service à une conduite d'évacuation principale (42) lorsque l'unité (4, 8) est déplacée dans une disposition de fonctionnement et est amenée de l'état libre à l'état bloqué. 25
8. Unité (4, 8) suivant l'une quelconque des revendications précédentes, caractérisée en ce que les éléments de translation tournants (20) ont la forme de roulettes pivotantes sphériques. 30
9. Unité (4, 8) suivant l'une quelconque des revendications précédentes, caractérisée en ce que le pied allongeable (22) est placé de manière à être facilement accessible à un opérateur. 35
10. Installation de restauration (2) comprenant au moins une unité d'équipement de restauration (4, 8) suivant l'une quelconque des revendications précédentes. 40

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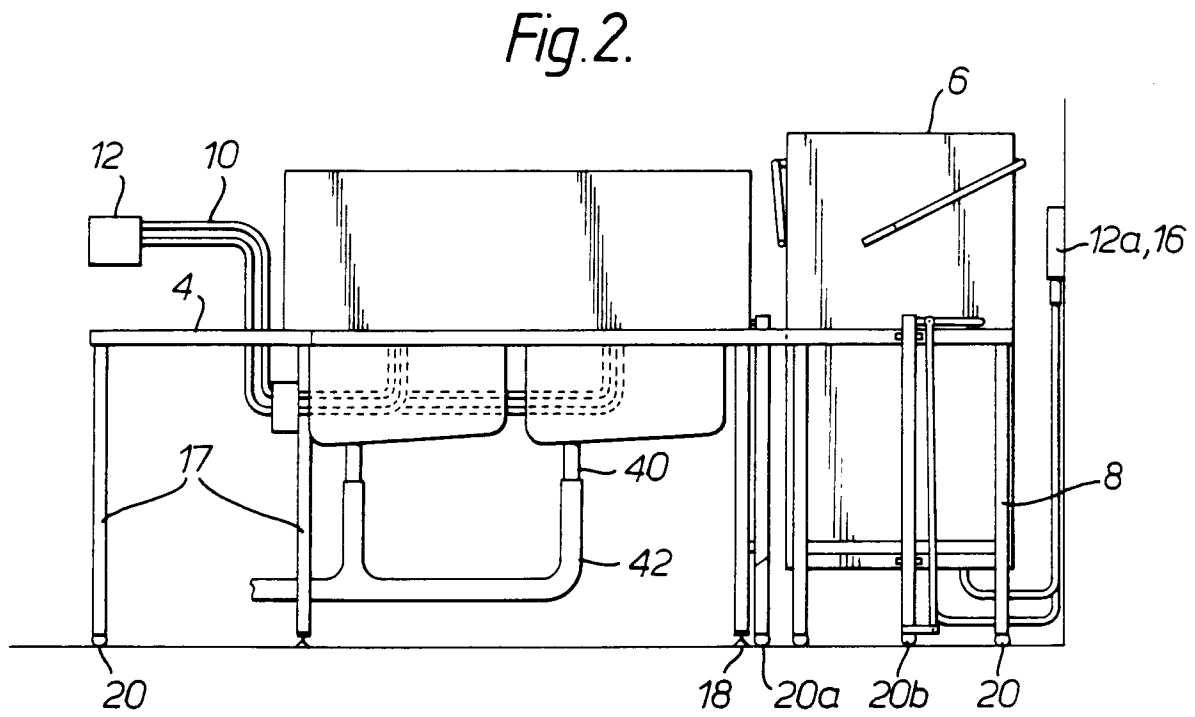
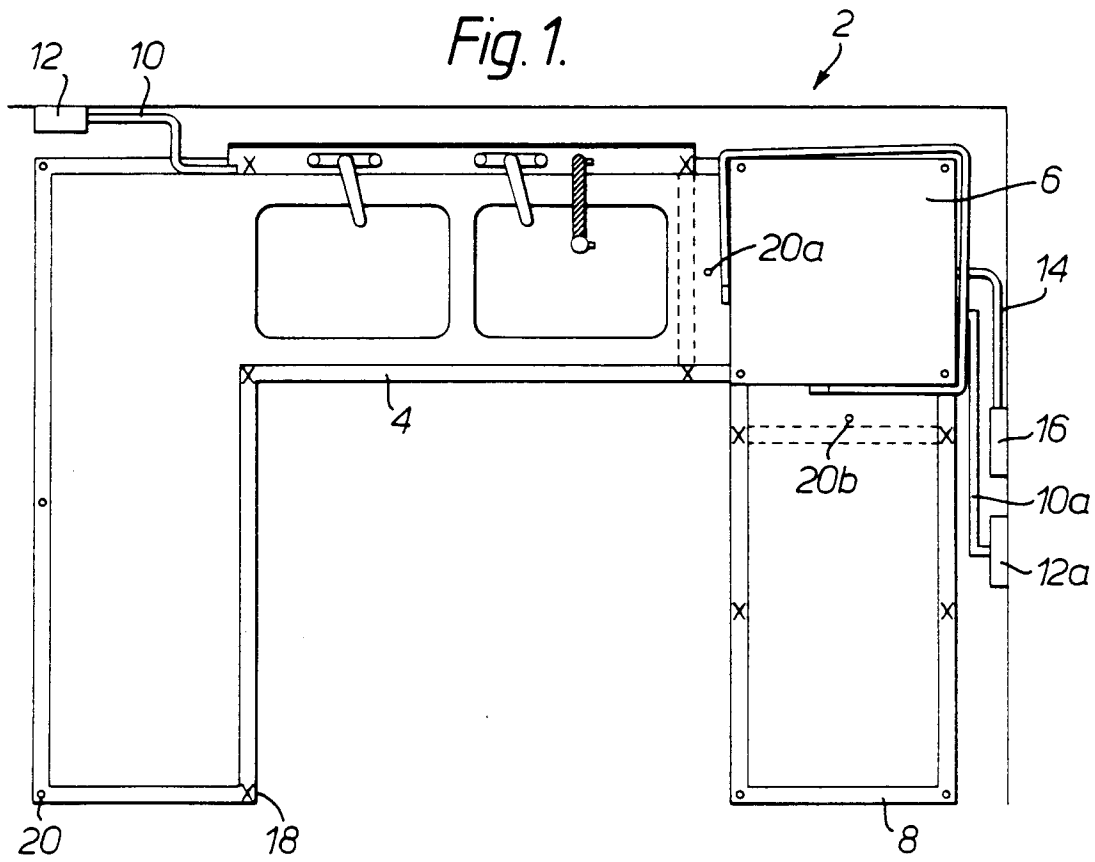


Fig.3.

