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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.

Our simultaneously filed European Patent Application, No. 93300463.2, describes a selectively movable catering equipment unit 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, such 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, at least one of the legs being provided with a rotary translational element which is extendable, extension thereof causing the unit's state to change from locked to free.

US-A-3663081 discloses a portable camp stove comprising a pair of similar box-units provided with means for releasably coupling the units together.

A catering facility in accordance with the invention comprises at least two movable units of equipment provided with connection means which, when the units are relatively located in one or more suitable operational dis-

positions, latch the units together and/or provide an electrical earth connection therebetween, characterised in that at least one of the units is selectively movable such that in a first, locked state it is fixed in position so that its location cannot be changed, 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, in that changing the state of the unit from locked to free automatically releases the connection means between that unit and another unit and in that first connection means provide an electrical earth connection between two units and second connection means latch the two units together.

Alternatively or additionally, changing the state of the unit from free to locked, when in the or one of the operative dispositions, may automatically activate the connecting means.

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.

The means to change the state of the unit from locked to free may comprise means to tilt or elevate the unit.

The connection means which latch two units together suitably comprises studs on one unit which locate in corresponding grooves on the other unit, the grooves being provided with suitably shaped mouths to lead the studs thereinto.

The connection means which provide an electrical earth connection between two units suitably comprise a tongue on one unit, which in one or more of the suitable operational dispositions abuts against a spring-loaded plunger on the other unit, the plunger being electrically connected to an earth cable.

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, and the coupling may simply be achieved by insertion of the unit's fluid waste pipe into a larger diameter mains waste pipe.

The units comprising the catering facility may be provided with wheels, rollers or castors, so that they may be moved. Preferably ball castors are provided, 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 cut-away side view of first connection means for use with the unit of the facility of Figure 1; Figure 5 is an oblique view of second connection means for use with the units of the facility of Figure 1; and

Figure 6 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.

Extension of the extendable leg 22 raises 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.

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.

As noted above, the dishwasher 6 is earthed by way of its connection to electrical supply socket 16. Referring to Figure 4, first connection means 44 are provided which will earth the units 4 and 8 via the unit 6 when these are in an operational disposition relative thereto. The first connection means 44 comprises a tongue 46 on the unit 4 or 8. When the unit 4 or 8 is moved into the operative disposition and lowered by retracting the extendable leg 22 thereof, the tongue 46 enters a socket 48 provided on the appropriate wall of the dishwasher unit 6. The socket 48 has a mouth 50 which may be angled to guide the tongue 46 thereinto. The tongue 46, when received in the socket 48, is abutted by a plunger 52, the rear end of which is electrically connected to an earth braid (not shown), due to the action of a coil spring 54 on the plunger 52. The spring 54 is located in a U-shaped box 56, which is integral with the socket 48 and the block 62 through which the plunger 52 passes. An earth path is provided via the earth braid connected to plunger 52. The web 58 of the box 56 is mounted to the appropriate wall of the dishwasher unit 6.

Second connection means is also provided between each unit 4 and 8 and the dishwasher unit 6 for the purposes of latching these together. Referring to Figure 5, the second connection means consists of a pair of studs 64 on the appropriate wall of the dishwasher unit 6 which latch in grooves 66 provided on the unit 4 or 8 to be connected at that wall. Latching will occur automatically when the unit 4 or 8 is moved into the operative disposition and lowered by retracting the extendable leg 22 thereof. The grooves 66 are basically C-shaped and include an angled mouth to lead the studs 64 into the C-shaped portion thereof.

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 6 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 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 6, 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 6 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, since automatic decoupling of the units will then occur due to the form of the first connecting means 44 and the second connection means 64, 66. 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 couple the units together and provide an earth connection for the whole facility 2 whilst simultaneously reconnecting 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 split down to a number of subunits, all movable and with connecting means of the type described above.

Claims

1. A catering facility (2) comprising at least two movable units (4,6,8) of equipment provided with connection means (44,64,66) which, when the units (4,6,8)

are relatively located in one or more suitable operational dispositions, latch the units (4,6,8) together and/or provide an electrical earth connection therebetween characterised in that at least one of the units (4,8) is selectively movable such that in a first, locked, state it is fixed in position, so that its location cannot be changed, whilst in a second, free, state its location can be changed, the unit (4,8) being provided with means (22) for changing its state from locked to free, and *vice versa*, and in that changing the state of the unit (4,8) from locked to free automatically releases the connection means (44,64,66) between that unit (4,8) and another unit (4,6,8) and in that first connection means (44) provide an electrical earth connection between two units (4,6,8) and second connection means (64,66) latch the two units (4,6,8) together.

2. A catering facility (2) according to Claim 1 characterised in that changing the state of the unit (4,8) from free to locked when the unit (4,8) is in an operational disposition relative to another unit automatically activates the connecting means (44,64,66) therebetween.
3. A catering facility (2) according to Claim 1 or 2 characterised in that the second connection means (64,66) comprises studs (64) on one unit (4,6,8) which locate in grooves (66) on the other unit (4,6,8), the grooves (66) being provided with suitably shaped mouths to lead the studs (64) thereinto.
4. A catering facility (2) according to Claim 1, 2 or 3 characterised in that the first connection means (44) comprises a tongue (46) on one unit (4,8), which in one or more of the suitable operational dispositions abuts against a spring-loaded plunger (52) on the other unit (6), the plunger being electrically connected to an earth cable.
5. A catering facility according to any preceding Claim characterised in that a unit (6) requires a fluid supply, the fluid supply comprising a fluid storage tank (68) mounted to the unit (6) and releasably connectable to a mains water supply.
6. A catering facility 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 catering facility (2) according to any preceding Claim characterised in that the or each unit (4,8) provided with means for changing its state from locked to free and *vice versa* employs fluid and comprises a fluid waste pipe (40), the fluid waste pipe (40) being automatically connected to a mains waste pipe (42) when the unit (4,8) is moved into an oper-

ative disposition and is changed from the free to the locked state.

8. A catering facility (2) according to Claim 7 characterised in that the connection of the fluid waste pipe (40) to the mains waste pipe (42) is achieved by insertion of the unit's fluid waste pipe (40) into a larger diameter mains waste pipe (42).

Patentansprüche

1. Gaststättenausrüstung bzw. Cateringeinrichtung (2), umfassend zumindest zwei bewegliche Ausrüstungseinheiten (4, 6, 8), die mit Verbindungsmitteln (44, 64, 66) versehen sind, die, wenn die Einheiten (4, 6, 8) in einer oder mehreren geeigneten Betriebsanordnungen relativ zueinander positioniert sind, die Einheiten (4, 6, 8) miteinander verriegeln und/oder eine elektrische Erdungsverbindung dazwischen schaffen, dadurch gekennzeichnet, daß zumindest eine der Einheiten (4, 8) solcherart selektiv beweglich ist, daß sie in einem ersten, verriegelten Zustand in Position fixiert ist, so daß ihre Lage unveränderbar ist, während ihre Lage in einem zweiten, freien Zustand verändert werden kann, wobei die Einheit (4, 8) mit Mitteln (22) zur Änderung ihres Zustands vom verriegelten zum freien Zustand und umgekehrt ausgestattet ist, und daß die Änderung des Zustands der Einheit (4, 8) vom verriegelten zum freien Zustand die Verbindungsmittel (44, 64, 66) zwischen dieser Einheit (4, 8) und einer weiteren Einheit (4, 6, 8) automatisch löst und daß erste Verbindungsmittel (44) eine elektrische Erdungsverbindung zwischen zwei Einheiten (4, 6, 8) bilden und zweite Verbindungsmittel (64, 66) die zwei Einheiten (4, 6, 8) miteinander verriegeln.

2. Gaststättenausrüstung bzw. Cateringeinrichtung (2) nach Anspruch 1, worin die Änderung des Zustands der Einheit (4, 8) vom freien zum verriegelten Zustand, wenn sich die Einheit (4, 8) in einer Betriebsposition relativ zu einer weiteren Einheit befindet, automatisch die Verbindungsmittel (44, 64, 66) dazwischen aktiviert.

3. Gaststättenausrüstung bzw. Cateringeinrichtung (2) nach Anspruch 1 oder 2, worin das zweite Verbindungsmittel (64, 66) Bolzen (64) auf einer Einheit (4, 6, 8) umfaßt, die in Nuten (66) auf der anderen Einheit (4, 6, 8) eingreifen, wobei die Nuten (66) mit geeignet geformten Öffnungen versehen sind, um die Bolzen (64) hineinzuführen.

4. Gaststättenausrüstung bzw. Cateringeinrichtung (2) nach Anspruch 1, 2 oder 3, worin das erste Verbindungsmittel (44) eine Zunge (46) auf einer Einheit (4, 8) umfaßt, die in einer oder mehreren der geeigneten Betriebsanordnungen an einem federvorgespannten Plunger (52) auf der anderen Einheit (6)

anliegt, wobei der Plunger elektrisch mit einem Erdungskabel verbunden ist.

5. Gaststättenausrüstung bzw. Cateringeinrichtung nach nach einem der vorhergehenden Ansprüche, worin eine Einheit (6) eine Fluidzufuhr erfordert, die einen Fluidspeichertank (68) umfaßt, der an der Einheit (6) befestigt und lösbar mit einer Hauptwasserzufuhr verbindbar ist.

6. Gaststättenausrüstung bzw. Cateringeinrichtung nach Anspruch 5, worin die lösbare Verbindung über eine Fluidleitung (70) erfolgt, die oberhalb des oberen Endes des Fluidspeichertanks (68) endet.

7. Gaststättenausrüstung bzw. Cateringeinrichtung (2) nach einem der vorhergehenden Ansprüche, worin die oder jede Einheit (4, 8), die mit Mitteln zur Änderung ihres Zustands vom verriegelten zum freien Zustand und umgekehrt versehen ist, Fluid verwendet und ein Fluidabflußrohr (40) umfaßt, das automatisch mit einem Hauptabflußrohr (42) verbunden wird, wenn die Einheit (4, 8) in eine Betriebsanordnung bewegt und vom freien zum verriegelten Zustand verändert wird.

8. Gaststättenausrüstung bzw. Cateringeinrichtung (2) nach Anspruch 7, worin die Verbindung des Fluidabflußrohrs (40) zum Hauptabflußrohr (42) durch Einsetzen des Fluidabflußrohrs (40) der Einheit in ein Hauptabflußrohr (42) mit größerem Durchmesser erfolgt.

Revendications

1. Installation de restauration (2) comprenant au moins deux unités mobiles (4, 6, 8) d'équipement pourvues de moyens d'assemblage (44, 64, 66) qui, lorsque les unités (4, 6, 8) sont placées l'une par rapport à l'autre dans une ou plusieurs dispositions de fonctionnement appropriées, solidarisent les unités (4, 6, 8) et/ou fournissent entre ces unités une liaison électrique de mise à la terre, caractérisée en ce qu'au moins une des unités (4, 8) est sélectivement mobile de façon telle que, dans un premier état bloqué, elle soit fixée en position de manière à ne pas pouvoir être déplacée, alors que dans un deuxième état libre, elle peut être déplacée, l'unité (4, 8) étant pourvue de moyens (22) pour la faire passer de l'état bloqué à l'état libre, et vice versa, et en ce que le changement d'état de l'unité (4, 8) de l'état bloqué à l'état libre libère automatiquement les moyens d'assemblage (44, 64, 66) entre cette unité (4, 8) et une autre unité (4, 6, 8) et en ce que les premiers moyens d'assemblage (44) fournissent entre les deux unités (4, 6, 8) une liaison électrique de mise à la terre et les deuxièmes moyens d'assemblage (64, 66) solidarisent les deux unités (4, 6, 8).

2. Installation de restauration (2) suivant la revendication 1, caractérisée en ce que le passage de l'unité (4, 8) de l'état libre à l'état bloqué, lorsque l'unité (4, 8) est dans une disposition de fonctionnement par rapport à une autre unité, active automatiquement les moyens d'assemblage (44, 64, 66) entre ces unités. 5

3. Installation de restauration (2) suivant la revendication 1 ou 2, caractérisée en ce que les deuxièmes moyens d'assemblage (64, 66) comprennent des boutons (64) sur une unité (4, 6, 8) qui se placent dans des encoches (66) sur l'autre unité (4, 6, 8), les encoches (66) présentant des entrées configurées de manière appropriée pour y engager les boutons (64). 10 15

4. Installation de restauration (2) suivant la revendication 1, 2 ou 3, caractérisée en ce que le premier moyen d'assemblage (44) comprend une languette (46) sur une unité (4, 8), qui, dans une ou plusieurs des dispositions de fonctionnement appropriées, est attraquée par un bonhomme à ressort (52) sur l'autre unité (6), le bonhomme à ressort étant connecté électriquement à une câble de terre. 20 25

5. Installation de restauration suivant l'une quelconque des revendications précédentes, caractérisée en ce qu'une unité (6) requiert une alimentation en fluide, l'alimentation en fluide comprenant une nourrice de fluide (68) montée sur l'unité (6) et pouvant être raccordée de manière séparable à une alimentation en eau principale. 30

6. Installation de restauration 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). 35 40

7. Installation de restauration (2) suivant l'une quelconque des revendications précédentes, caractérisée en ce que l'unité ou chaque unité (4, 8) pourvue de moyens pour la faire passer de l'état bloqué à l'état libre et vice versa utilise du fluide et comprend une conduite d'évacuation de fluide (40), la conduite d'évacuation de fluide (40) étant raccordée automatiquement à une conduite d'évacuation principale (42) lorsque l'unité (4, 8) est amenée dans une disposition de fonctionnement et passe de l'état libre à l'état bloqué. 45 50

8. Installation de restauration (2) suivant la revendication 7, caractérisée en ce que le raccordement de la conduite d'évacuation de fluide (40) à la conduite d'évacuation principale (42) est réalisé en introduisant la conduite d'évacuation de fluide (40) de l'unité dans une conduite d'évacuation principale (42) de plus grand diamètre. 55

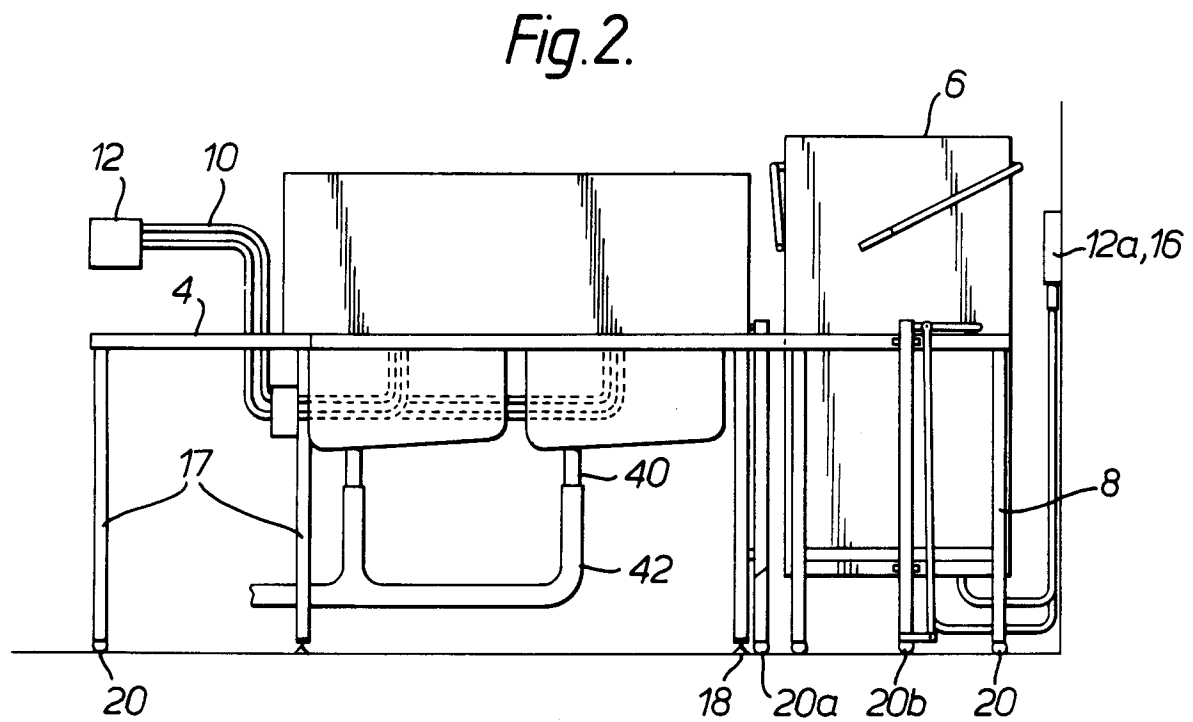
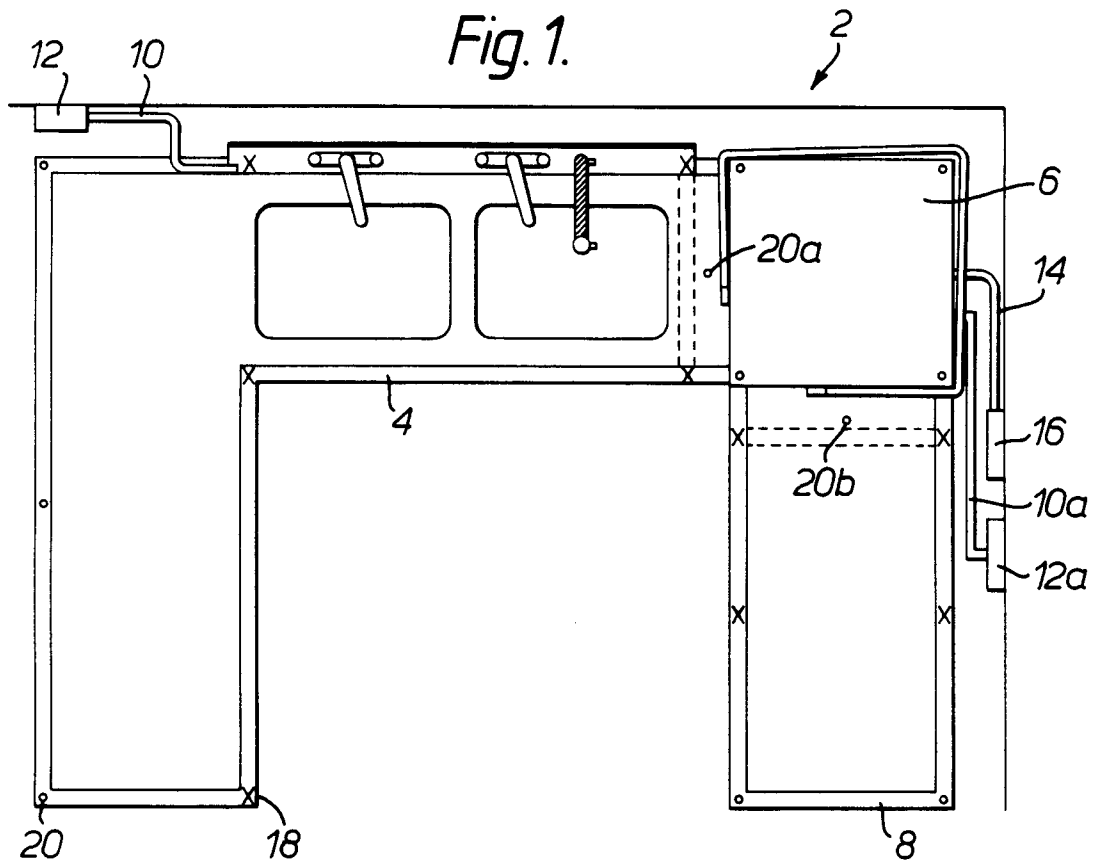


Fig. 3.

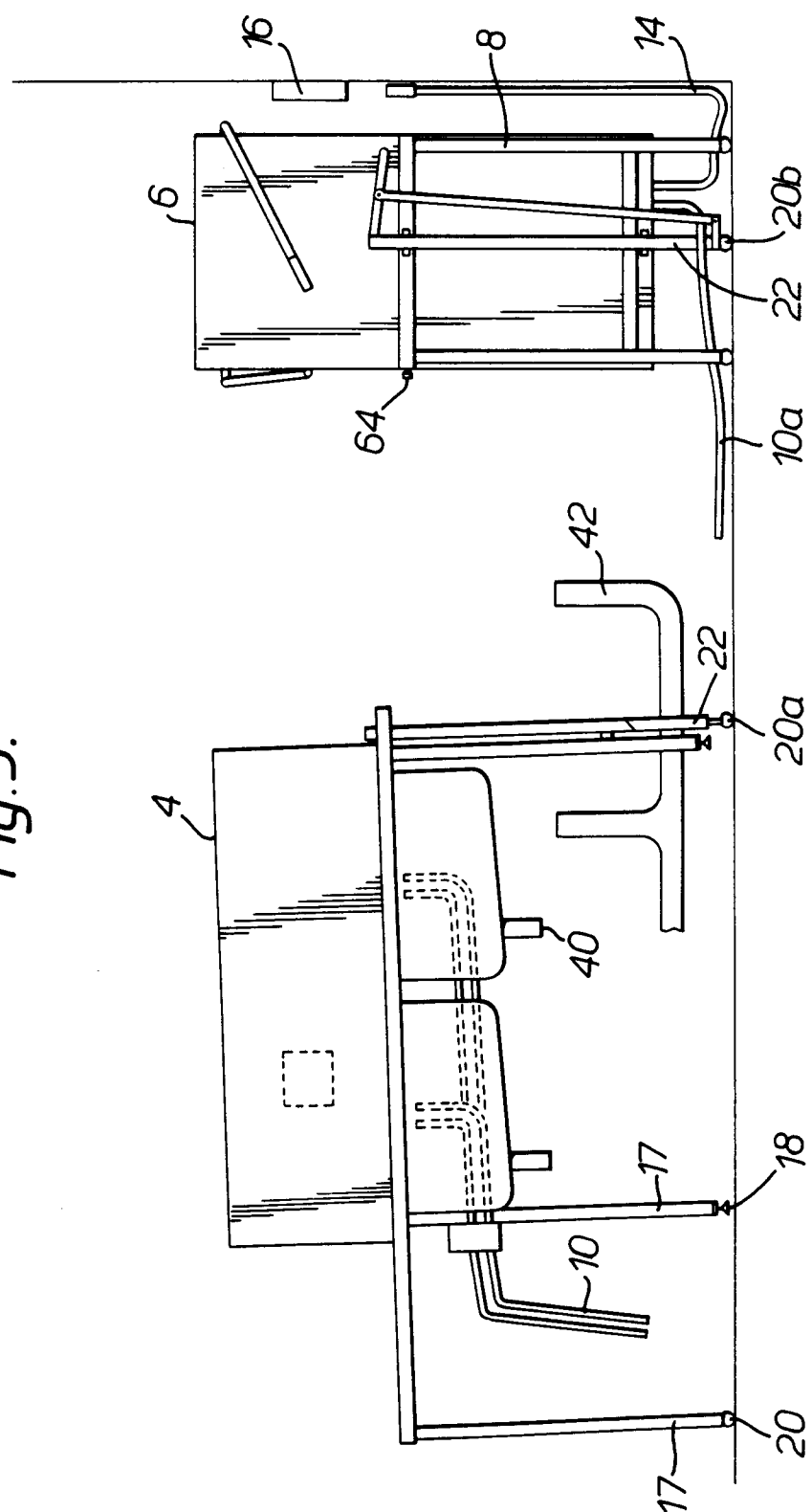


Fig. 4.

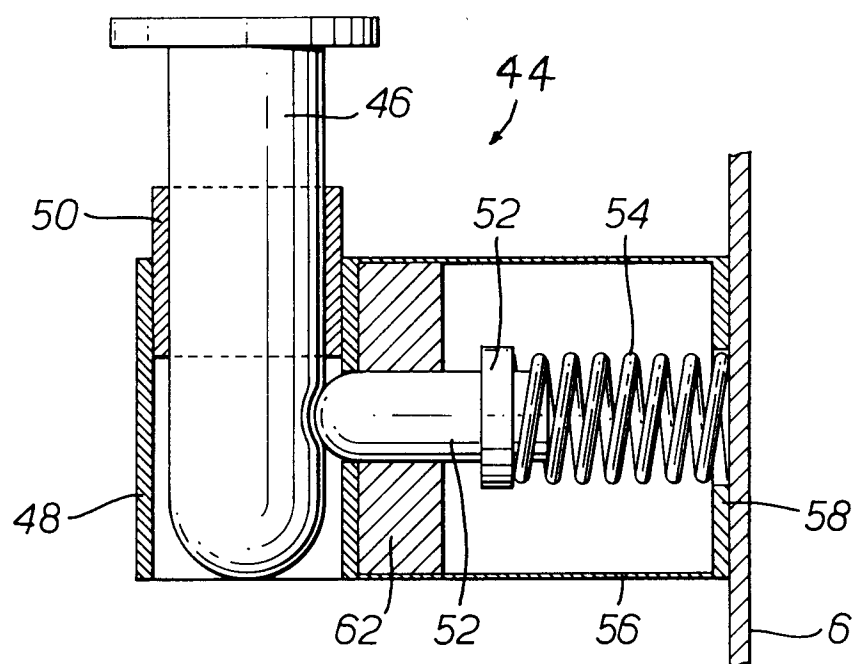


Fig. 5.

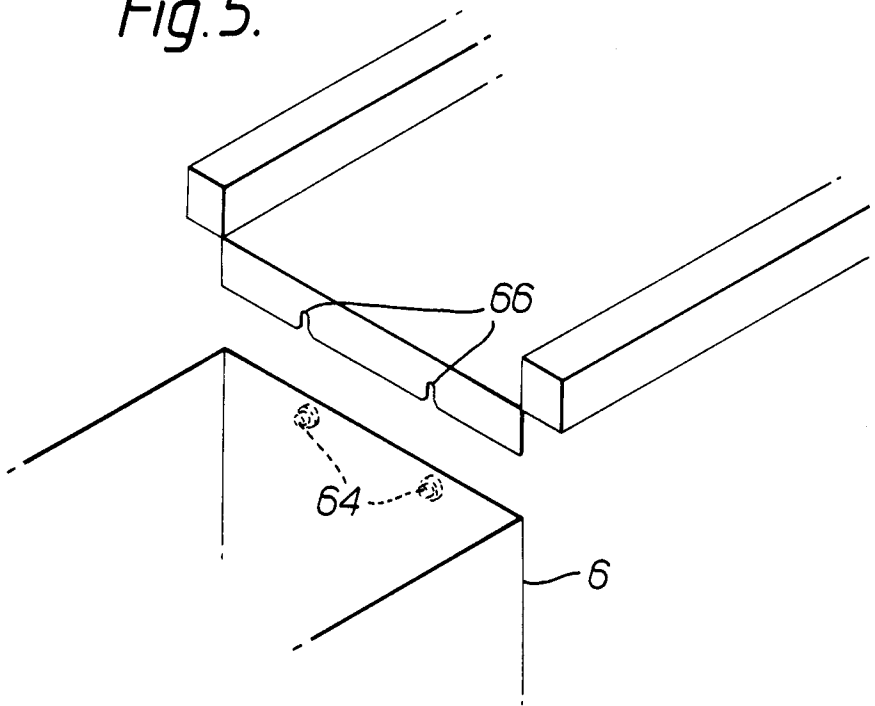


Fig. 6.

