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(54) **A DISHWASHING APPARATUS**
GESCHIRRSPÜLMASCHINE
LAVE-VAISSELLE

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Description**FIELD OF INVENTION**

[0001] The present invention relates to a dishwashing apparatus of which the capacity and size can be modified with respect to the needs of the user.

BACKGROUND OF THE INVENTION

[0002] Dishwashing apparatuses, especially that are used in households, are built of a certain capacity. These are usually of the size 80 cm x 60 cm x 65 cm. Alternatively dishwashing apparatuses of the size 80 cm x 45 cm x 65 cm or 40 cm x 60 cm x 65 cm also exist in the market place. These dishwashing apparatuses are far from satisfying the customers' needs for varying sizes of dishwashers. One dishwashing apparatus of the prior art type is known from EP-A-1 123 684.

[0003] The object of this invention is to provide a dishwashing apparatus of which the capacity and the size can be modified according to the requirements of the user.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0004] An embodiment of the dishwashing apparatus, which is realised in order to attain the said object of the invention is illustrated in the attached drawings, wherein;

Figure 1: is a schematic view of a dishwashing apparatus,

Figure 2: is a schematic view of a dishwashing apparatus with an additional unit,

Figure 3: is a perspective view of a dishwashing apparatus without an additional unit,

Figure 4: is a perspective view of an additional container,

[0005] The components shown in the drawings have been enumerated individually, as follows;

1. Dishwashing apparatus
2. Main body
3. Washing tank
4. Heater
- 5, 404. Spray means
101. Main body basket
- 102, 403. Door
103. Container
104. Guide rail
- 105, 202, 405. Gasket
201. Cover
- 203, 406. Recess
- 204, 407. Fastening means
301. Control unit
302. User interface device
303. Pin

304. Socket
401. Additional dishwashing unit
402. Additional basket
408. Separator
409. Water directing channel
410. Opening
411. Air flow channel
412. Fan
413. Fan housing
415. Projection
416. Additional washing container
417. Door gasket

[0006] The dishwashing apparatus (1) comprises a main body (2), a washing tank (3) within the main body (2), one or more rotating spray means (5) for throwing washing liquid onto the wash load items, a circulation pump which is connected to and adapted to supply water to said rotating spray means (5), a heater (4) that is housed inside the washing tank (3) and is used for heating the water and the wash load items and a drain pump for discharging the washing liquid.

[0007] The dishwashing apparatus (1) further comprises a main body basket (101) for placing wash load items, a door (102) that is covering the washing tank (3), a container (103) where the door (102) is attached and into which the main body basket (101) is placed, one or more than one guide rails (104) on which the container (103) is placed and one or more than one gasket (105) that are placed on the rim of the container (103) and the rim of the door (102) for providing the water tight sealing of the washing tank (3). When the user pulls or pushes the door (102), the container (103) makes a sliding motion on the guide rails (104) and comes in or out of the washing tank (3). The container (103) resembles a drawer.

[0008] The dishwashing apparatus (1) further comprises a cover (201) that is removable and closes the top of the washing tank (3), one or more than one gasket (202) on the edge of the main body (2) where the cover (201) is placed, one or more than one recess (203) on the cover (201) into which the gasket (202) fits into and one or more than one fastening means (204), for example screws, for attaching the cover (201) to the main body (2).

[0009] The dishwashing apparatus (1) further comprises a control unit (301) that is adapted to control the operation of all of the main functional members, such as pumps, motors, heaters etc. of the apparatus (1), a user interface device (302) for displaying the related information to the user and getting the user inputs, such as program selection, parameter setting etc., one or more than one pins (303) on the user interface device (302) for transmitting the information and one or more than one sockets (304), connected to the control unit (301), where the pins (303) fits.

[0010] The dishwashing apparatus (1) further comprises one or more than one additional dishwashing unit (401). The additional dishwashing unit (401) is attached to the dishwashing apparatus (1) in order to increase the

capacity via increasing the volume in which the washing is performed. In order to attach the additional dishwashing unit (401) to the dishwashing apparatus (1), the cover (201) is removed, the additional dishwashing unit (401) is placed on top of the dishwashing apparatus (1) and the cover (201) is then placed onto the additional dishwashing unit (401).

[0011] The additional dishwashing unit (401) comprises an additional basket (402) for placing wash load items, an additional washing container (416) for placing the additional basket (402), a door (403) that is covering additional washing container (416), one or more than one spray means (404), one or more than one door gasket (417) that are placed on the rim of the door (403) for providing the water tight sealing of the additional washing container (416), one or more than one gasket (405) on the top edge of the additional dishwashing unit (401) where the cover (201) is placed, one or more than one recess (406) into which the gasket (202) fits into and one or more than one fastening means (407) for attaching the cover (201) to the additional dishwashing unit (401), a separator (408) placed under the additional basket (402) for preventing the water from dropping onto the base of the main body (2) while only the door (102) is opened, one or more than one water directing channels (409) on the separator (408) for directing the wash liquid to the container (103) during the washing process, one or more than one opening (410) on the separator (408) letting the wash liquid to be transferred from the additional washing container (416) to the container (103), a fan (412) for directing the hot air created by the heater (4) from the washing tank (3) to the additional washing container (416), a fan housing (413) into which the fan (412) is placed, an air flow channel (411) through which the hot air is transferred from the washing tank (3) to the additional washing container (416) and a projection (415) under the door (403) for enabling the doors (102 and 403) to be simultaneously opened when the door (403) is pulled out.

[0012] The dishwashing apparatus (1) can be used with or without the additional dishwashing unit (401). Since all the functional components are already present in the dishwashing apparatus (1), it can be used without the additional dishwashing unit (401). The operation of the dishwashing apparatus (1) without the additional dishwashing unit (401) is not different from the conventional dishwashers, therefore will not be described here.

[0013] The additional dishwashing unit (401) is used if the user needs a higher capacity. In order to increase the capacity of the dishwashing apparatus (1), the additional dishwashing unit (401) is attached to the dishwashing apparatus (1). The additional dishwashing unit (401) is attached to the dishwashing apparatus (1) in order to increase the capacity via increasing the volume in which the washing is performed. In order to attach the additional dishwashing unit (401) to the dishwashing apparatus (1), the cover (201) is removed, some of the functional components, for example the control unit (301) and the user

interface device (302) are detached from the dishwashing apparatus (1) and attached to the additional dishwashing unit (401), the additional dishwashing unit (401) is placed on top of the dishwashing apparatus (1) and the cover (201) is then placed onto the additional dishwashing unit (401).

[0014] The circulation pump, the drain pump and other functional components of the dishwashing apparatus (1) are designed as if they will always operate with the additional dishwashing unit (401). Therefore, the additional dishwashing unit (401) does not constitute any capacity problems. During the operation, the opening (410) enables the washing liquid that is pumped to the additional basket (402) to return back to the system and during the drying process, the fan (412) enables the drying of the wash load items that are placed into the additional basket (402).

[0015] The dishwashing apparatus (1), with the removable cover (201) and the additional dishwashing unit (401), ensures that varying capacity needs of the users can be satisfied in a timely and inexpensive way. Whenever user needs a dishwashing apparatus (1) with a higher capacity, using his/her dishwashing apparatus (1) she/he just buys an additional dishwashing unit (401). There is no need to discard the old machine. For example, a single person can buy a small dishwashing apparatus (1) and buys an additional dishwashing unit (401) when she/he gets married. This also provides a greater flexibility for kitchen furniture manufacturers and provides easiness for service suppliers.

Claims

1. A dishwashing apparatus (1) comprising a main body (2), a washing tank (3) within the main body (2), said washing tank (3) houses one or more rotating spray means (5) for throwing washing liquid onto the wash load items and a heater (4) for heating the water and the wash load items, **characterized in that**, said dishwashing apparatus further comprises a cover (201) that is removable and closes the top of the washing tank (3) and an additional dishwashing unit (401) that is attached in order to increase the capacity via increasing the volume in which the washing is performed, where, in order to attach the additional dishwashing unit (401) to the dishwashing apparatus (1), the cover (201) is removed and the additional dishwashing unit (401) is placed on top of the dishwashing apparatus (1).
2. A dishwashing apparatus (1) according to Claim 1, **characterized** with, one or more than one gasket (202) on the edge of the main body (2) where the cover (201) is placed, one or more than one recess (203) on the cover (201) into which the gasket (202) fits into and one or more than one fastening means (204) for attaching the cover (201) to the main body

- (2).
3. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, a control unit (301) that is adapted to control the operation of all of the main functional members, such as pumps, motors, heaters etc. of the apparatus (1), a user interface device (302) for displaying the related information to the user and getting the user inputs, such as program selection, parameter setting etc., one or more than one pins (303) on the user interface device (302) for transmitting the information and one or more than one sockets (304), connected to the control unit (301), where the pins (303) fits.
 4. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, a main body basket (101) for placing wash load items, a door (102) that is covering the washing tank (3), a container (103) that is attached to the door (102) and into which the main body basket (101) is placed, one or more than one guide rails (104) on which the container (103) is placed and makes a sliding motion and comes out of the washing tank (3), like a drawer, when the user pulls or pushes the door (102), and one or more than one gasket (105) that are placed on the rim of the container (103) and the rim of the door (102) for providing the water tight sealing of the washing tank (3).
 5. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, the additional dishwashing unit (401) comprising an additional basket (402) for placing wash load items, a separator (408) placed under the additional basket (402) for preventing the water from dropping onto the base of the main body (2) while only the door (102) is opened, one or more than one water directing channels (409) on the separator (408) for directing the wash liquid to the container (103) during the washing process, one or more than one opening (410) on the separator (408) letting the wash liquid to be transferred from the additional washing container (416) to the container (103).
 6. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, the additional dishwashing unit (401) comprising a fan (412) for directing the hot air created by the heater (4) from the washing tank (3) to the additional washing container (416), a fan housing (413) into which the fan (412) is placed and an air flow channel (411) through which the hot air is transferred from the washing tank (3) to the additional washing container (416).
 7. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, the ad-

ditional dishwashing unit (401) comprising a projection (415) under the door (403) for enabling the doors (102 and 403) to be simultaneously opened when the door (403) is pulled out.

8. A dishwashing apparatus (1) according to any one of the preceding claims, **characterized** with, the additional dishwashing unit (401) comprising an additional washing container (416) for placing the additional basket (402), a door (403) that is covering additional washing container (416), one or more than one spray means (404), one or more than one door gasket (417) that are placed on the rim of the door (403) for providing the water tight sealing of the additional washing container (416), one or more than one gasket (405) on the top edge of the additional dishwashing unit (401) where the cover (201) is placed, one or more than one recess (406) into which the gasket (202) fits into and one or more than one fastening means (407) for attaching the cover (201) to the additional dishwashing unit (401).

Patentansprüche

1. Geschirrspülvorrichtung (1), die einen Grundkörper (2), einen Spültank (3) innerhalb des Grundkörpers (2), wobei in dem Spültank (3) ein oder mehrere rotierende Sprühmittel (5) zum Werfen von Flüssigkeit auf die Spülladungsgegenstände aufgenommen sind, sowie ein Hezelement (4) zum Erwärmen des Wassers und der Spülladungsgegenstände umfasst, **gekennzeichnet durch** eine Abdeckung (201), die entfernbar ist und die Oberseite des Spültanks (3) schließt, und **durch** eine zusätzliche Geschirrspüleinheit (401), die angebracht ist, um die Kapazität mittels einer Steigerung des Volumens zu steigern, in dem das Spülen durchgeführt wird, wobei, um die zusätzliche Geschirrspüleinheit (401) an der Geschirrspülvorrichtung (1) anzubringen, die Abdeckung (201) entfernt wird und die zusätzliche Geschirrspüleinheit auf der Geschirrspülvorrichtung (1) angeordnet wird.
2. Geschirrspülvorrichtung (1) nach Anspruch 1, **gekennzeichnet durch** einen oder mehrere Dichtungen (202) an der Kante des Grundkörpers (2), wo die Abdeckung (201) angeordnet ist, **durch** eine oder mehrere Vertiefungen (203) an der Abdeckung (201), in die die Dichtung eingepasst ist, und **durch** ein oder mehrere Befestigungsmittel (204) zum Anbringen der Abdeckung (201) an den Grundkörper (2).
3. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** eine Steuereinheit (301), die angepasst ist, um die Betätigung aller Hauptfunktionselemente wie Pumpen,

Motoren, Heizelementen usw. der Vorrichtung (1) zu steuern, **durch** eine Nutzerschnittstellenvorrichtung (302) zum Anzeigen der zugehörigen Information für den Nutzer und zum Annehmen von Nutzereingaben, wie Programmwahl, Parametereinstellung usw., **durch** einen oder mehrere Stifte (303) an der Nutzerschnittstellenvorrichtung (302) zum Übertragen der Information, und **durch** eine oder mehrere Buchsen (304), die mit der Steuereinheit (301) verbunden sind, in die die Stifte (303) eingepasst sind.

4. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** einen Grundkörperkorb (101) zum Anordnen von Spülladungsgegenständen, **durch** eine Tür (102), die den Spültank (3) abdeckt, **durch** einen Behälter (103), der an der Tür (102) angebracht ist und in dem der Grundkörperkorb (101) angeordnet wird, **durch** eine oder mehrere Führungsschienen (104), auf denen der Behälter (103) angeordnet ist und eine Gleitbewegung tätigt und aus dem Spültank (3) gelangt, wie eine Schublade, wenn der Nutzer an der Tür (102) zieht oder gegen diese drückt, und **durch** eine oder mehrere Dichtungen (105), die an dem Rand der Tür (102) angeordnet sind, um eine Wasserdichtung des Spültanks (3) bereitzustellen.

5. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die zusätzliche Geschirrspüleinheit (401) einen zusätzlichen Korb (402) zum Anordnen von Spülladungsgegenständen aufweist, einen Separator (408), der unter dem zusätzlichen Korb (402) angeordnet ist, um zu verhindern, dass Wasser auf den Boden des Grundkörpers (2) tropft, während nur die Tür (102) geöffnet ist, einen oder mehrere Wasserleitkanäle (409) an dem Separator (408) zum Führen der Spülflüssigkeit zu dem Behälter (103) während des Spülvorgangs, eine oder mehrere Öffnungen (410) an dem Separator (408), die es zulassen, dass Spülflüssigkeit von dem zusätzlichen Spülbehälter (416) zu dem Behälter (103) gelangt, umfasst.

6. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die zusätzliche Geschirrspüleinheit (401) ein Gebläse (412) zum Lenken der heißen Luft, die von dem Heizelement (4) erzeugt wird, von dem Spültank (3) zu dem zusätzlichen Spülbehälter (416), ein Gebläsegehäuse (413), in dem das Gebläse (412) angeordnet ist, und einen Luftströmungskanal (411), durch den die heiße Luft von dem Spültank (3) zu dem zusätzlichen Spülbehälter (416) geleitet wird, umfasst.

7. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die zusätzliche Geschirrspüleinheit (401) ei-

nen Vorsprung (415) unter der Tür (403) aufweist, damit die Türen (102 und 403) gleichzeitig geöffnet werden können, wenn die Tür (403) ausgezogen wird.

8. Geschirrspülvorrichtung (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die zusätzliche Geschirrspüleinheit (401) einen zusätzlichen Spülbehälter (416) zum Anordnen des zusätzlichen Korbs (402), eine Tür (403), die den zusätzlichen Spülbehälter (416) abdeckt, ein oder mehrere Sprühmittel (404), eine oder mehrere Türdichtungen (417), die an dem Rand der Tür (403) angeordnet sind, um eine Wasserdichtung des zusätzlichen Spülbehälters (416) bereitzustellen, eine oder mehrere Dichtungen (405) an der oberen Kante der zusätzlichen Geschirrspüleinheit (401), wo die Abdeckung (201) angeordnet ist, eine oder mehrere Vertiefungen (406), in die die Dichtung (202) eingepasst ist, und ein oder mehrere Befestigungsmittel (407) zum Anbringen der Abdeckung (201) an der zusätzlichen Geschirrspüleinheit (401) umfasst.

Revendications

1. Machine à laver la vaisselle (1) **caractérisée en ce qu'elle** comporte un corps principal (2), lequel contenant un réservoir de lavage (3) ayant un ou plusieurs dispositifs de jet d'eau tournant (5) utilisé pour la pulvérisation de l'eau sur les vaisselles à laver, un système de chauffage (4) pour chauffer l'eau et les vaisselles, un couvercle démontable (201) destiné à couvrir le réservoir (3) du dessus et une unité supplémentaire de lavage (401) pouvant être montée à la place dudit couvercle (201).
2. Machine à laver la vaisselle (1) selon la revendication précédente **caractérisée en ce qu'elle** comporte un ou plusieurs joints (202) autour du corps principal (2) à l'endroit où le couvercle (201) est placé, un ou plusieurs trous (203) à l'endroit où le joint (202) sur le couvercle (201) est placé et un ou plusieurs éléments de jonction (204) pour pouvoir monter le couvercle (201) sur le corps principal (2).
3. Machine à laver la vaisselle (1) selon l'une des revendications précédentes **caractérisée en ce qu'elle** comporte une unité de commande (301) adaptée pour contrôler le fonctionnement de l'ensemble des éléments fonctionnels de la machine (1) tels que pompes, moteur, système de chauffage, etc., une unité d'interface d'utilisateur (302) montrant à l'utilisateur les informations concernant le choix de programme, le réglage de programme, etc. et les informations d'utilisateur, une ou plusieurs fiches (303) sur l'unité d'interface d'utilisateur et un ou plusieurs sockets (304) sur lesquels lesdites fiches

pourraient être montées pour la transmission d'information.

4. Machine à laver la vaisselle (1) selon l'une des revendications précédentes **caractérisée en ce** 5
qu'elle comporte un panier principal (101) où les
 vaisselles à laver pourraient être mises, une porte
 (102) couvrant le réservoir (3), laquelle utilisée comme 10
 surface d'appui d'une cuve (103) contenant le
 panier principal (101), un ou plusieurs rails sur les-
 quels la cuve (103) est placée, assurant l'entrée ou
 la sortie de la cuve (103) en glissant dessus comme
 un tiroir lorsque l'utilisateur tire ou pousse la porte
 (102), et un ou plusieurs joints (105) disposés aux 15
 côtés de la cuve (103) et de la porte (102) afin d'as-
 surer l'étanchéité du réservoir (3).

5. Machine à laver la vaisselle (1) selon l'une des re-
 vendications précédentes **caractérisée en ce** 20
qu'elle comporte un panier supplémentaire (402)
 pouvant recevoir les vaisselles à laver, un sépara-
 teur (408) placé au-dessous du panier supplémen-
 taire (402) et empêchant l'eau de passer sous le 25
 corps principal (2) quand la porte (102) est ouverte,
 un ou plusieurs canaux d'eau (409) disposés sur le
 séparateur (409) et destinés à orienter l'eau de la-
 vage vers la cuve (103) lors de l'opération de lavage,
 et une unité de lavage supplémentaire (401) au-des-
 sus du séparateur, contenant une ou plusieurs 30
 ouvertures (410) et destinée à orienter l'eau de la-
 vage de la cuve supplémentaire de lavage (416) vers
 la cuve (103).

6. Machine à laver la vaisselle (1) selon l'une des re-
 vendications précédentes **caractérisée en ce** 35
qu'elle comporte une unité de lavage supplémen-
 taire (401) contenant un ventilateur (412) servant à
 conduire l'air chauffé par le système de chauffage
 (4) du réservoir (3) vers la cuve supplémentaire de
 lavage (416), une base de ventilateur (413) sur la-
 quelle est placé ledit ventilateur (412), et un canal 40
 de courant d'air (411) assurant le transport de l'air
 chauffé du réservoir (3) à la cuve supplémentaire de
 lavage (416). 45

7. Machine à laver la vaisselle (1) selon l'une des re-
 vendications précédentes **caractérisée en ce** 50
qu'elle comporte une unité de lavage supplémen-
 taire (401) contenant une partie saillante (415) située
 au-dessous de la porte (403) et qui assure l'ouver-
 ture simultanée des portes (102 et 403) lorsque la
 porte (403) est tirée vers l'extérieur.

8. Machine à laver la vaisselle (1) selon l'une des re-
 vendications précédentes **caractérisée en ce** 55
qu'elle comporte une unité de lavage supplémen-
 taire (401) contenant une cuve de lavage supplé-
 mentaire (416) dans laquelle est disposée le panier

supplémentaire (402), une porte (403) servant à fer-
 mer la cuve de lavage supplémentaire (416), un ou
 plusieurs dispositifs de jet d'eau (404), un ou plu-
 sieurs joints de porte (417) placés aux côtés de la
 porte (403) et assurant l'étanchéité de la cuve de
 lavage supplémentaire (416), un ou plusieurs joints
 (405) sur le côté supérieur de la cuve de lavage sup-
 plémentaire (416) pour monter dessus le couvercle
 (201), un ou plusieurs trous (406) dans lesquels les
 joints (405) sont placés, et un ou plusieurs éléments
 de jonction (407) pour fixer le couvercle (201) sur
 ladite unité de lavage supplémentaire (401).

Figure 1

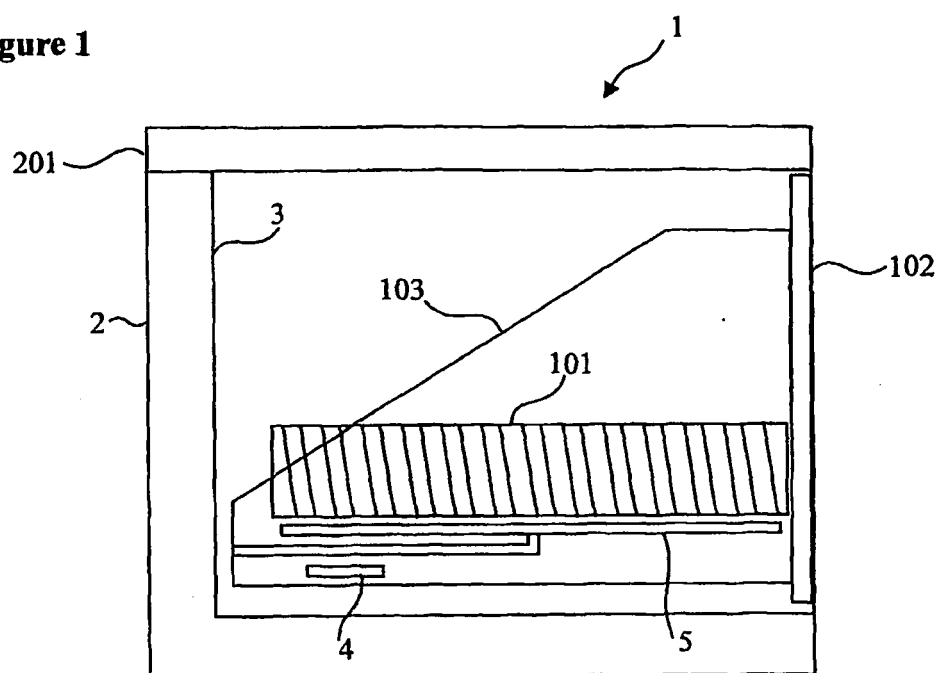


Figure 2

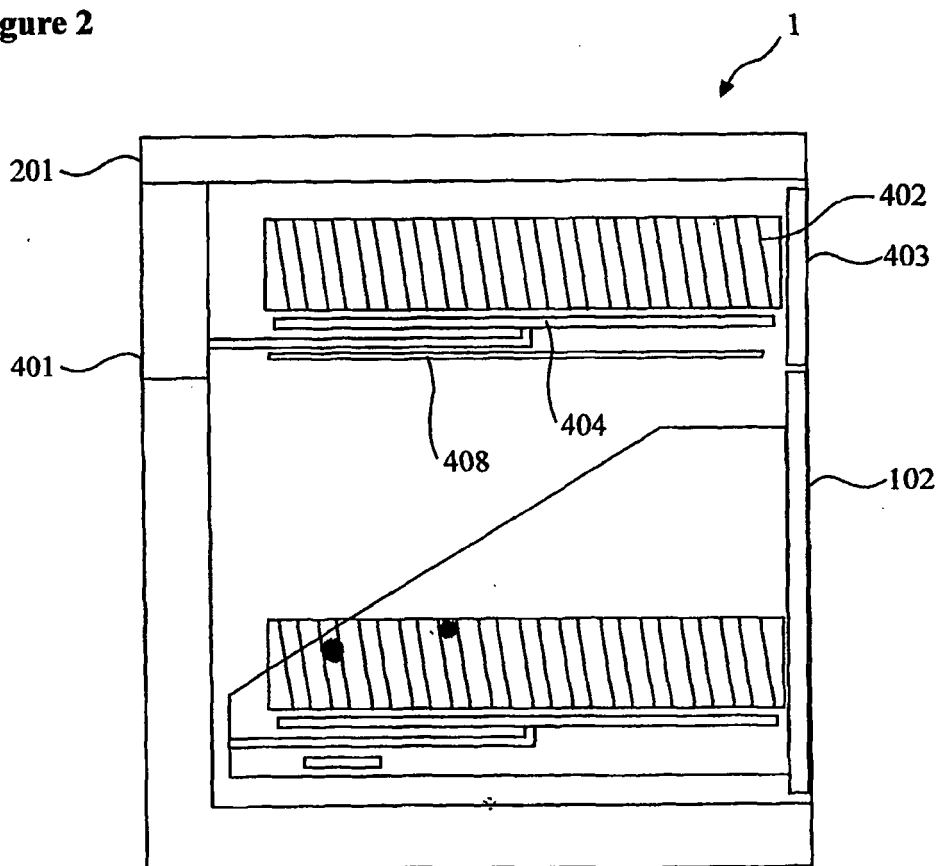


Figure 3

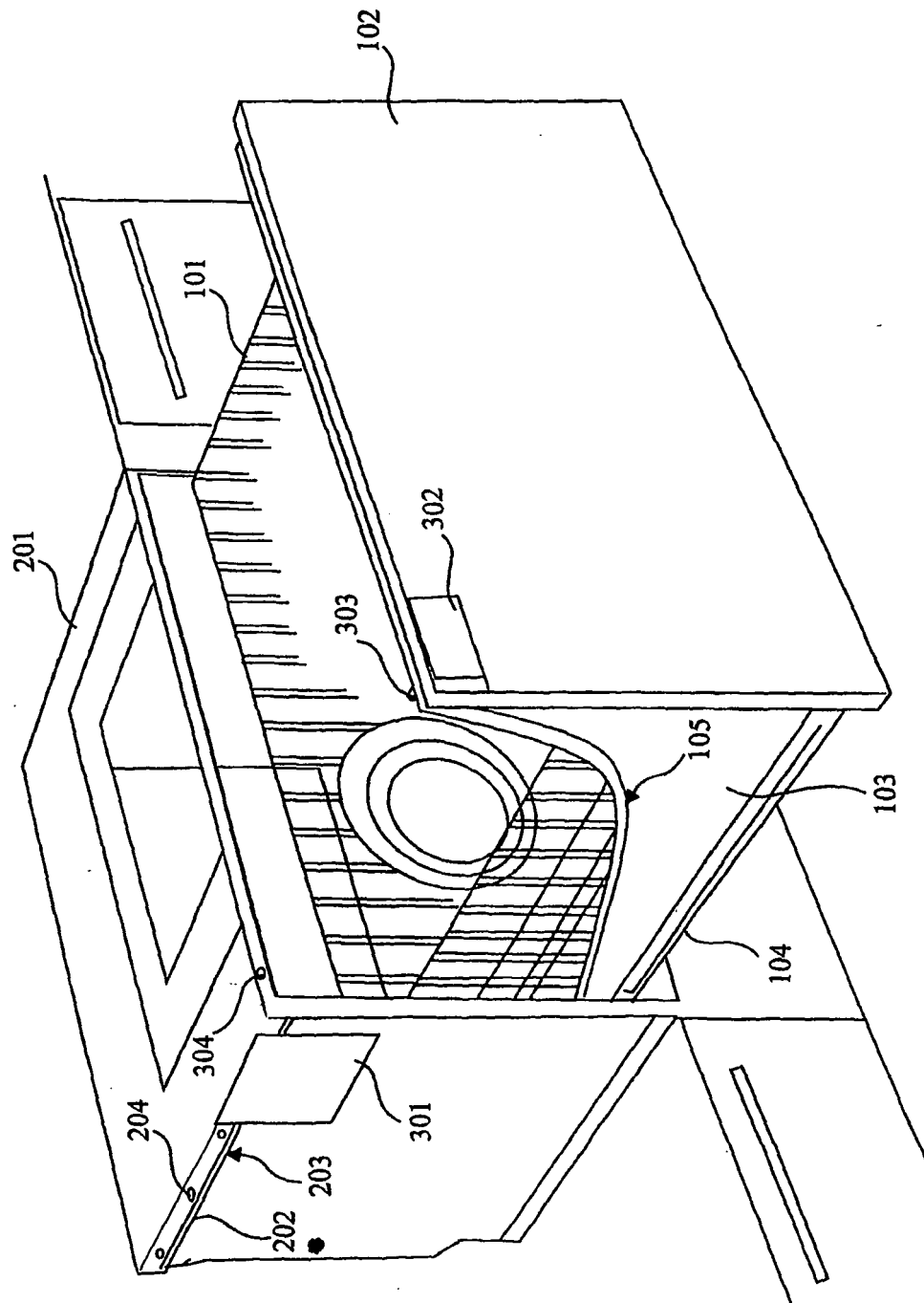


Figure 4

