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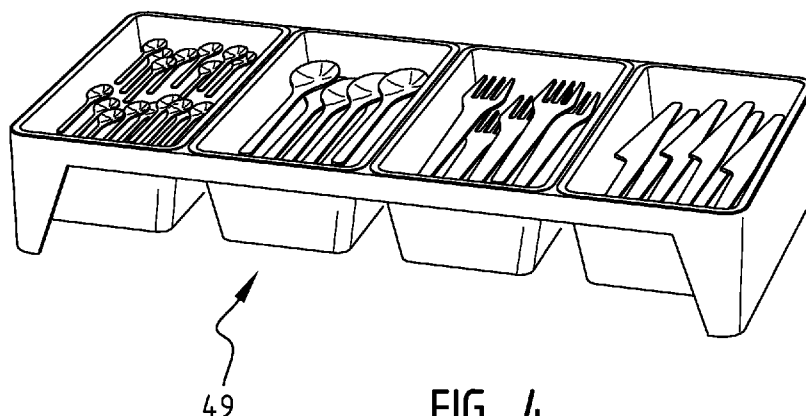


FIG. 4

(57) Abstract: The present invention relates to a device (1) for holding disposable food or tableware objects, for instance cutlery and/or dishes, the device comprising : - at least one cartridge (10) comprising a holder (11) configured to accommodate a plurality of food or tableware objects; - a cartridge support element (30) for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is removably mounted. The device may comprise a plurality of cartridges mounted to the cartridge support element, wherein the cartridge support element and at least one of the cartridges are configured so that the at least one cartridge is replaceable by another cartridge.

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DEVICE, METHOD AND SYSTEM FOR HOLDING AND DISTRIBUTING FOOD OR TABLEWARE OBJECTS

The present invention relates to a device for holding
5 objects, for instance tableware objects such as cutlery and/or
dishes, or single servings. The invention also relates to a
combination of such device and the food or tableware objects. The
invention also relates to a cartridge for holding food or
tableware objects as well as to a method of distributing food or
10 tableware objects.

Disposable tableware objects are usually collected in a tray
storing the individual pieces or objects in one or more
compartments provided in the tray. The objects may be distributed
such that objects of different types or sizes are arranged in
15 different compartments. In use, when one or more compartments of
the tray run empty, the associated compartment or compartments of
the tray may be filled again with individual objects.

For instance, if a tray has three compartments (one
compartment for forks, one compartment for knives, and one
20 compartment for spoons), each of the compartments may be refilled
once the compartment runs empty by placing a new set of tableware
objects into the empty compartment.

Placing of new tableware objects in the respective
compartments is time-consuming and there is also a risk of objects
25 of a certain type or category to end up in the wrong compartment.
Especially in case of disposable tableware objects, of which the
external surface may be less resistant to damage than a non-
disposable type of tableware objects, the refilling of the
compartments without damaging the objects is difficult to achieve.

30 A further disadvantage of existing cutlery trays is that
while the pieces of cutlery (objects) are heaped up on the bottom
of the respective compartments, they are oriented in a random
manner and a person grabbing one of the objects almost inevitably
touches one or more of the other objects in the same compartment.
35 Therefore a risk of contamination of the tableware objects is
present. It is a still further object of the invention to provide

a cartridge wherein tableware objects may be accommodated in a more hygienic manner.

Accordingly today the problem remains to efficiently refill food items, servings or tableware objects in combination with a suitable presentation.

It is an object of at least some embodiments of the present invention to provide a device wherein the above identified disadvantages and/or other disadvantages associated with the prior art have been obviated or at least reduced.

It is a further an object of at least some embodiments of the present invention to provide a device wherein the refilling step can be achieved in a fast and efficient manner, without any substantial risk of inadvertently damaging or even affecting the tableware objects to be hold by the device.

According to a first aspect of the present invention at least one of the objects is achieved in a device for holding food objects, such as disposable tableware, the device comprising

- at least one, two or more cartridges, each cartridge comprising a holder configured to accommodate a plurality of food objects;
- a cartridge support element for supporting the at least one, two or more cartridges, the cartridge support element comprising at least one, two or more openings into which at least one cartridge is removably mounted.

The one or more cartridges may be removed from the cartridge support element, for instance when the holder has ran empty, and is replaced by one or more further (pre-filled) cartridges. If the objects are prestored in the cartridge and therefore do not need to be placed in the cartridge during refilling/replacement, the risk of damage to the objects is relatively small. Furthermore, new food objects can be refilled in a fast and reliable manner, simply by replacing the associated cartridge (s) .

It should be noted to that by replacing the almost empty cartridge by a pre-filled cartridge, old food objects are completely removed. It is possible to place the old food objects on top of the food products presented in the newly placed

cartridge. In that case a first-in-first-out (FIFO) system is obtained, wherein the oldest objects are the easiest accessible to the user.

A food object according to this invention and in this application can be any object related to serving food, used, served and/or distributed in relation to a meal or a drink, including, but not limited to tableware objects such as (disposable) cutlery, actual servings, food, food/package combinations. Herein a table object or food item also refers to food objects.

In an embodiment the device comprises a plurality of cartridges mounted in a plurality of openings of the cartridge support element, wherein the cartridge support element and at least one of the cartridges are configured so that the at least one cartridge is replaceable by another cartridge.

In an embodiment the device comprises at least two cartridges. Each cartridge is configured to accommodate a single type of food/tableware object. The at least two cartridge are configured to accommodate different types of food/tableware objects. The cartridge support element comprises at least two openings to mount the at least two cartridges. This allows presenting multiple food/tableware objects in a single support and refilling the type of objects quickly and independently. If a particular type of tableware object presented in the cartridge support element (that supports multiple cartridges) runs (close to) empty, that cartridge is replaced by a filled cartridge containing the same single type of tableware object.

In an embodiment the cartridge comprises a number of food/tableware objects. The cartridge is filled. In an embodiment the cartridge comprises a number of food/tableware objects. Accordingly a system is provided wherein the cartridge is arranged for both transport of food/tableware objects to the location of distribution as well as for the actual distribution.

In an embodiment disposable tableware objects are provided in the cartridge selected from the group consisting of knives, forks, spoons, straws, plates, dishes, mugs, cups, jugs, napkins

or pitchers. Any embodiment of the invention relates to food/tableware objects, which does not include e.g. tools such as bolts or nails.

Further examples of table objects that can be contained in the cartridge are condiments, such as sauce and seasoning. The condiment can be salt, pepper, ketchup, mustard, olive oil, vinegar, cream and/or sugar. Still further examples are soy sauce, barbecue sauce and teriyaki sauce. The condiment can be held in small packages.

Different individual packaging solutions are available. The individual packages with condiments, such as single servings, can be received in the holder in the cartridge. An amount of multiple single-servings is held in the cartridge.

In an embodiment single-serving portions are individually wrapped condiments such as ice cream packages, such as cornettotm. The condiment can be held in small packages. Different individual packaging solutions are available. The individual packages with condiments can be received in the holder in the cartridge. The package forms a single-serving portion pack. An amount of multiple single-serving portion pack is held in the cartridge.

Embodiments of the holder in the cartridge comprise a container or cavity formed in the cartridge. The cartridge can comprise a stamped plastic container.

In an embodiment of the present invention the device comprises a first cartridge with a holder configured so as to accommodate objects of a first shape and a second cartridge with a holder configured so as to accommodate objects of a second shape, different from the first shape. For instance, some of the holders may be configured to be (especially) suitable for forks, other holders may be especially appropriate for accommodating knives and/or spoons. This allows e.g. combinations of tableware to be distributed. A possible combination is a small plate and a fork, typical for a small appetizer.

In an embodiment wherein the cartridge support element is configured to support a plurality of cartridges, at least two of the cartridges may be configured to be interchangeable. The

cartridges may be mounted at different positions in the cartridge support element. E.g. openings in the support element can have a similar shape. Cartridges containing different tableware objects but having a similar shape can be supported in either opening.

5 In an embodiment the device comprises a plurality of cartridges having different dimensions and/or shapes so as to receive therein differently shaped and/or dimensioned objects and/or to receive therein different numbers of objects.

10 In embodiments of the present invention at least one of the cartridges (for instance, each of the cartridges) comprises a closing element, and preferably a seal element arranged to seal off the tableware objects contained in the holder. In this way the contents of the holder, i.e. the tableware objects, may be kept free from contamination during transport and or storage before
15 use. Especially in embodiments wherein the seal element may seal the content of the holder in a substantially airtight manner from the surroundings, the hygiene of the objects present inside the cartridge may be maintained.

20 Sealing the content of the cartridge also allows containment of the food items inside the cartridge using a protective gas to increase the shelf life of the food item. E.g. coffee servings can be stored in oxygen free air.

25 The seal element may be embodied in different manners. In one of the embodiments of the invention the seal element comprises a removable sheet of material. The sheet may be glued, connected by thermofforming, or similarly attached to the holder so that the seal element remains attached to the holder until the element is removed from the cartridge, for instance by manually pulling the seal element from the holder.

30 In embodiments the cartridge support element comprises an array of openings, each of the openings being shaped so as to allow at least one correspondingly shaped cartridge to be slid in and out to attach the cartridges to the support element respectively to remove the cartridges from the support element.

35 In an embodiment the cartridge support element comprises a dispenser for tableware. The cartridge is arranged and operates

together with the support element. Tableware products can be delivered from the cartridge to the support element e.g. under the influence of gravity. The delivered tableware can be dispensed individually from the dispensing unit coupled with the cartridge present on the support element.

In an embodiment the cartridge is coupled to the support element by a locking element, preferably located on the support element. The locking element allows holding the cartridge in its position, while tableware is taken from the cartridge. The locking element can be biased to a locked position, holding the cartridge. An operator, e.g. a waiter, can bring the locking element to an unlocked position, allowing replacing the cartridge.

In an embodiment of the invention the holder comprises a circumferential flange, the flange being configured to rest upon a circumferential edge of the opening in the cartridge support element when the cartridge is in mounted condition. The flange enables the cartridge to be suspended from the cartridge support element simply by sliding the cartridge into one of the openings provided in the cartridge support element.

The sealing element can be connected to the circumferential flange. The flange combines two functions.

The cartridge support element may comprise a plurality of legs for supporting the element on a substantially horizontal surface, in other embodiments other means for stably supporting the cartridge support element on the surface, for instance in a vertical manner, may be provided.

Whereas in existing cutlery trays the tableware objects are placed in a more or less random arrangement, the objects may be positioned in a stacked arrangement, for instance one exactly on top of the other, inside the holder of the cartridge. This may help to avoid damaging the objects.

In an embodiment the cartridge is formed with a particular opening or openings such as one or more slots into which tableware objects are snugly fitted, so that the objects may not fall out of the holders. Furthermore, the objects remain in the specific arrangement in which they have been prestored in the holders.

In an embodiment the cartridge and the cartridge support element are manufactured from different materials. Preferably two colours are used. This allows a bicolour effect also allowing the user to recognize the system of separable cartridge and cartridge support element. In an embodiment the cartridge support element comprises a metal coating.

In an embodiment the device is a refrigerator, in particular an ice cream display. The cartridge support element is received in the cooling area of the refrigerator. Specifically a refrigerator comprising a sliding door or window is provided. The cartridge support element is located in the cooled area accessible by sliding the door open.

The device can be a fastfood kit including cartridges filled with straws, ketchup/mayonnaise servings, spoons, forks, salt and pepper, napkins. Each tableware object is presented in a separate cartridge held in the cartridge support element. The device can be coffee kit comprising cartridges containing spoon, tea servings, sugar, cream, and e.g. cookie servings.

In an embodiment the device can be a breakfast kit including cartridges filled with cutlery, and single servings such as tea bags, (instant) coffee, cereal packages, jams, butter, dairy products such as cheese, ham. The breakfast kit can comprise a cooling and heating device for e.g. cooling cheese and ham, but also milk and warming water.

In a further embodiment the device is a foodservice station, comprising a frame supporting the cartridge support element. The frame further supports a number of spare cartridges. The spare cartridges can be held in sliding trays or received inside the food station accessible via a door. The spare cartridges, filled with table objects, are stored, out of sight, inside the food station, and allow efficiently replacing an empty cartridge presented to the public by opening the door or sliding the tray open. This allows quick refilling of the displayed table objects at the location.

According to another aspect of the invention a combination of the device as defined herein and a plurality of food/tableware

object, in particular disposable tableware objects, accommodated in at least one cartridge is provided.

According to an embodiment the tableware objects are made of a plastic material, for instance PP, PS or PET.

5 In embodiments of the invention the tableware objects are made of biodegradable material, for instance PLA; PCL; PHA; TPS. In an embodiment cellulose build tableware is used. A wooden fork e.g. can be provided.

10 In embodiments of the invention the tableware objects comprise pieces of cutlery provided with a metal coating. The objects, for instance plastic knives, forks and spoons, may be coated to give the objects a special appearance, for instance a silverlook. The coating may be vulnerable and in some instances there may be a risk of damage to the objects, for instance in the
15 form of scratches.

As mentioned above, a cartridge may comprise a seal element arranged to seal off the tableware objects in the holder. The holders may be prefilled with disposable tableware objects and subsequently sealed using the mentioned seal element.

20 According to an aspect of the invention a cartridge is provided comprising a holder accommodating a plurality of food objects, such as disposable tableware objects. Such a cartridge can be provided in combination with the device, system or method according to this invention. The cartridge can have any of the
25 features described in relation to other disclosed embodiments.

According to a further aspect of the present invention at least one of the objects is achieved in a device for holding food/tableware objects is provided, the device comprising

- at least one system of cartridge and food/tableware
30 objects, the cartridge comprising a holder configured to accommodate a plurality of food/tableware objects;
- a cartridge support element for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is
35 removably mounted.

This device allows transporting the cartridge holding the food objects/tableware and positioning the cartridge in the support element, when an (almost) empty cartridge needs to be replaced .

5 According to a further aspect of the present invention at least one of the objects is achieved with a system comprising food/tableware objects and a device for holding tableware objects is provided, the device comprising

- 10 - at least one system of cartridge and tableware objects, the cartridge comprising a holder configured to accommodate a plurality of food/tableware objects;
- a cartridge support element for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is
15 removably mounted,

wherein the tableware objects are held in the holder. The food/tableware objects can be re-usable plates, forks, knives. The cartridge can be used for storing the tableware. In use, the cartridge is placed and held in the support and an empty cartridge
20 can be replaced by a new cartridge holding further tableware objects .

This device allows transporting the cartridge holding the tableware and positioning the cartridge in the support element, when an (almost) empty cartridge needs to be replaced.

25 It is known to provide a system for distributing food/tableware objects. Table objects can comprise cutlery, single servings, food. In an embodiment the table objects and in particular the cutlery can be disposable table objects/cutlery. Further embodiment of table objects comprises condiments or
30 napkins. The system allows to provide an amount of table objects for use e.g. during dinner or lunch at a location such as a canteen or a restaurant.

It is a further object of the invention to improve existing systems for distributing food/tableware objects.

35 According to a further aspect of the present invention at least one of the objects is achieved with a system comprising

table objects and a device for holding tableware objects is provided, the device comprising

- at least one system of cartridge and table objects, the cartridge comprising a holder configured to accommodate a plurality of tableware objects;
- a cartridge support element for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is removably mounted,

wherein the table objects are held in the holder.

This device allows transporting the cartridge holding the tableware and positioning the cartridge in the support element, when an (almost) empty cartridge needs to be replaced. A supply of multiple cartridges can be provided to allow replacing an empty cartridge .

The one or more cartridges may be removed from the cartridge support element, for instance when the holder has ran empty, and replaced by one or more further cartridges wherein new tableware objects have been prestored. If the objects are prestored in the cartridge and therefore do not need to be placed in the cartridge, the risk of damage to the objects is relatively small.

Furthermore, new tableware objects can be made available in a fast and reliable manner, simply by replacing the associated cartridge (s).

In an embodiment the cartridge comprises a number of table objects. In an embodiment the cartridge comprises a number of table ware objects. Accordingly a system is provided wherein the cartridge is arranged for both transport of tableware object to the location of distribution as well as for the actual distribution .

An embodiment of the system according to the invention comprises a cartridge support element having multiple removably mounted cartridges, the cartridges holding at least two different kinds of table objects.

The system according to the invention can be used as distribution and supply system for supplying table objects, i.e. objects used during eating including condiments.

In an embodiment of the system the device has a frame and is
5 arranged as a cart having wheels for allowing the cart to be transported to a suitable location. In an embodiment the cart comprising the cartridges is used e.g. to go around a table and to distribute cartridges or table objects at that table.

In an embodiment the system is arranged as a display of
10 table objects, comprises a frame supporting the cartridge support element and comprises spare cartridges received in a spare room in the device, e.g. accessible via a door or sliding opening. The device can be a refrigerator.

The system can be combined with any of the disclosed
15 features relating to the device or cartridge.

According to an aspect a method of distributing food related objects is provided. The method comprises providing the food related objects, holding the food related objects in a holder of a cartridge, at a location for distributing the food related objects
20 providing a cartridge support element having an opening for removably mounting the cartridge, and mounting the prefilled cartridge in the cartridge support element. Since the cartridge is prefilled, that is, holds the food related objects before being mounted in the cartridge support system, the invention allows
25 replacing an empty holder/cartridge. The invention provides a novel way of refilling empty compartments.

The location of distribution is, in this disclosure, the place of use of the cartridge support element and/or the system comprising the device of cartridges and cartridge support element.

30 In embodiment the cartridge holding the table objects is filled at a different location, and is transported to the distribution location.

In an embodiment of the method the cartridges are sealed after the table objects are received in the holder, e.g. closing
35 the holder and preferably locking the table objects in a position, the sealing or closing taking place before the cartridge is

transported to the distribution location. This allows providing closed supplies (cartridges) of one or more (combinations of) table objects.

Further features, details and characteristics of the present invention will become apparent after reading the following description of several embodiments thereof. In the description reference is made to the annexed drawings, wherein:

Figure 1 is a perspective view of a cutlery tray 1 according to the prior art;

10 Figure 2A is a view in perspective of an embodiment of a cartridge according to the invention, in sealed condition;

Figure 2B is a view in perspective of the cartridge according to figure 2a, when the seal element is removed;

15 Figure 3 is a view in perspective of an embodiment of a cartridge support element for supporting a couple of cartridges;

Figure 4 is a view in perspective of the embodiment of the cartridge support element wherein embodiments of the cartridge in accordance with figures 2A, 2B have been arranged;

20 Figure 5 is a view in perspective of an alternative embodiment of a cartridge support element and one of the cartridges ;

Figure 6 is a view in perspective of a further alternative embodiment of a system according to the invention;

25 Figure 7 is a view in perspective of an embodiment of the system according to the invention; and

Figure 8 is a view in perspective of another embodiment of a system according to the invention.

30 In figure 1 a cutlery tray 1 is shown, generally consisting of a plurality (in this case four) elongated compartments 2-5 in which a number of tableware objects have been placed. In each of the compartments a tableware object of a certain category or type has been placed, i.e. in the first compartment a number of small spoons 6, in the second compartment a number of large spoons 7, in 35 the third compartment a number of forks 8 and in the fourth compartment a number of knives 9 have been arranged. Generally the

tableware objects are heaped up randomly in the associated compartment, meaning that such compartment comprises a pile of objects laid down one on top of the other.

In a e.g. a restaurant guests can take the desired cutlery presented in the tray.

When eventually one of the compartments 2-5 becomes empty, it can be refilled by placing in the same compartment a number of new objects. Refilling the objects, which is done by dropping objects for a stock into the compartment, may cause the objects to be damaged. Furthermore, since the objects are arranged in each compartment in a random arrangement, it is difficult if not impossible for a user to pick out one object from a compartment without getting in contact with one or more of the other objects present in the compartment. The hygienic conditions inside the compartments are therefore not optimal.

Figures 2A, 2B, 3 and 4 show examples according to embodiments of the invention wherein the actual compartment is replaced by another and wherein the hygienic circumstances can be greatly improved. The compartment is a single cartridge.

Figure 2A shows a cartridge 10, comprising an elongated holder 11 wherein a number of table objects can be arranged. The holder 11 is a compartment or container.

The holder 11 comprises two side walls 12, 13, a front wall 14, a back wall 15 and a bottom 16. In the embodiment shown the holder is shaped such that a number of objects may be arranged beside and/or on top of each other. The table objects, here knives 69, can be positioned in orderly stacks.

In other embodiments, however, the space in the holder is more restricted and the objects are stacked so that the holder contains one or more rows of objects.

In a still further embodiment (not shown) the objects are snugly fitted in a recess or slot provided in the cartridge/in the holder 11, for instance a slot or recess that is shaped corresponding to the shape of the specific objects that are to be accommodated in the cartridge. In the latter embodiment the objects are arranged in a regular fashion into the holder and the

object may be taken out by the user one after the other, reducing the risk of inadvertently damaging the objects.

In the embodiment shown in figure 2A, the upper side of the holder 11 is sealed by a sealing element 20. The sealing element
5 20 will close access to the inner space of the holder 11.

The sealing element may be a thin sheet, for instance a transparent plastic sheet. The sealing element 20 may be attached to the holder, for instance to the circumferential rime 21 thereof, by using an appropriate adhesive (glue), other ways to
10 achieve attachment of the sealing element to the holder are conceivable as well. The sealing element 20 is configured such that it may be easily removed from the holder 10, for instances by pulling at one corner 22 of the element (cf. direction P_1).

Although only type of cutlery is shown in Figure 2A, it will
15 be clear that other table objects such as condiments or single-serving portion pack containing such condiments can be used to fill the cartridge. Other possible table objects are napkins.

In figure 2B the cartridge 10 is shown in a condition wherein the sealing element 20 has been removed entirely.

20 As will be clear to the skilled man, the cartridge can be filled with table objects e.g. at a manufacturing site. In an embodiment the cartridge is filled with cutlery at a dishwashing site. In an embodiment the cartridge itself is cleaned using a dishwasher .

25 The seal or other closing element can be removed at the location where the table objects need to be distributed/displayed. Accordingly the closed cartridge can be transported from a filling location to a distribution location.

Figure 3 shows a cartridge support element 30 comprising a
30 first leg 31, second leg 32 and an intermediate framework 33. The framework 33 comprises two longitudinal support elements 34 and 35 and a number of ribs 36 provided between the longitudinal elements 34. The longitudinal element 34 and ribs 36 define a number of openings 40, 41, 42 and 43 in which the above-mentioned cartridges
35 10 may be arranged.

In the embodiment shown the cartridges 10 comprise a circumferential ridge, herein also referred to as the flange 45. By using the circumferential flange 45 the cartridge may be easily arranged inside the respective opening and mounted to the cartridge support element 30. This situation is shown in figure 4.

The bottom of the cartridge 49 is formed so that, when empty, the cartridges can be nested. This allows storing the empty cartridge in an efficient manner. Empty cartridge can be collected and can be transported back to a filling location after being used. This allows a partial recycling of the cartridges.

In yet a further embodiment a system comprising the support element and cartridges can be provided suited for a specific purpose, e.g. breakfast. The cartridges are arranged to hold breakfast objects, e.g. as single-serving portion packs, such as sugar, jelly, butter. The system also allows using cooled food, such as cheese or sausages, e.g. as single-serving portion packs, to be held in the cartridge. The cartridge can be stored in a refrigerator, when the system is not used/objects are not distributed .

If one or more of the cartridges is empty, it can be individually removed from the support element 30, simply by lifting the cartridge out of the opening 40-43. If available, another cartridge containing new (clean) table objects may be slid into the opening so that the assembly is ready for use again.

In the embodiment shown in figure 3, the support element 30 is provided with a number of identical openings (i.e. at least identical in size and shape) so that the different cartridges in the openings 40-43 are mutually exchangeable, substantially independent of the shape of the objects arranged in each of the cartridges. However, in other embodiments, the openings of the support element 30 may be different in shape and/or dimensions, so that differently shaped and/or dimensioned cartridges may be arranged therein. Also in this embodiment the cartridges can be removed and eventually replaced relatively easily and efficiently.

Figure 5 shows another embodiment of a device 50 comprising the cartridge support element having a number of openings for

supporting a couple of cartridges 10. This device comprises a frame and is arranged as a display.

In this embodiment the support element is a standing element. The bottom surface of the support element is generally flat so that it can easily be placed in a stable manner on a horizontal surface. Similar to the earlier mentioned embodiment, the cartridge support element 50 enables cartridges 10 to be placed into the openings 52-55. Similarly each of the cartridges 10 may be individually replaced by another one, simply by lifting the cartridge from the support element 50 and sliding another, prefilled, cartridge into the associated opening.

Clearly a display 50 can be used at locations to invite users to take a sample from the cartridges 10. The display 50 allows efficient refilling of displayed objects by replacing empty cartridges 10. By prefilling the cartridge, the displayed objects in the cartridge can be presented in an orderly fashion, e.g. using slots of predefined form to surround the presented objects and to allow to form a stack of objects. Also the cartridges can be cleaned easily after use.

Figure 6 shows a further embodiment of a cart 60 that can be used to distribute table objects. Cart 60 comprises a frame 62 having wheels 61 allowing moving of the cart. A bar 71 can be used to push or pull the cart 60.

Part of the frame 62 is a cartridge support element on the top face of the cart. In an embodiment a cartridge support system can also be formed on side faces of the cart.

Figure 6 shows cartridges of different shapes, e.g. square cartridges 64,65, rectangular cartridges 66,67,68 and round cartridges 69,70.

In Figure 6, the table objects are shown only schematically. Cartridge 64 holds single-serving portion packs 72 e.g. sugar or salt portions (condiments). A user can take the packs 72 from the cartridge and use it.

Cartridge 70 can hold round plates 73, stacked in the cartridge. In an embodiment the cartridge can contained a support system lifting the plates to the service level (exit/mouth of the

holder) so as to ease removing the plate from the holder by a user .

A prefilled cartridge is mounted in the suitable cartridge support element, identifiable for a user on the basis of the shape
5 of the opening for holding the cartridge.

In an embodiment of the invention a method for distributing food items is provided. The food items can be any single object involved in serving meals. A food item can be a single serving portion, including but not limited to ketchup/mayonnaise packages,
10 cookies, jelly, cereal packages, tea flavours, ice creams. In the method according to the invention a large number of food items is distributed over a large number of people, but allowing the people to choose the food item. A user is allowed to pick or skip the food item.

15 The food item is easily accessible, in some case protected by a accessible door, e.g. to cool the food item. The food item is displayed. In embodiments the food item is held in see through containers .

According to the method the large number of food items is
20 held in a cartridge. The cartridge is prefilled at a filling location, different from the distribution location. At the filling location industrial methods for filling the cartridge are available and can include cleaning the cartridge, sealing the cartridge, counting the number of food items.

25 The pre-filled cartridges are transported to the distribution location, e.g. a restaurant, a shop etc..

During transport the food items in the cartridges are protected from surroundings e.g. by a seal closing the cartridge. In an embodiment slots are provided in the cartridge and the food
30 items are fitted into the slots, protecting the food items.

In an embodiment the cartridges are temporarily stored at the distribution site. The storing can be in a special storing facility at the distribution site. In an embodiment the display device for distributing the food items also comprises a storing
35 compartment, e.g. a drawer or behind a door formed in the display.

At the distribution site the protective seal can be removed.

The cartridge can be displayed to the users by mounting the cartridge in an opening in a cartridge support element. After use, e.g. when the cartridge is empty, the cartridge is removed from its mounted position, and replaced by a pre-filled cartridge.

5 Replacing an empty cartridge by a prefilled cartridge is more efficient than e.g. supplementing food items to a half empty cartridge /container /compartment .

An (almost) empty cartridge can be recycled and/or re-filled at the filling location.

10 Figure 7 shows an embodiment of a system comprising a display device and food items. The display device is a refrigerator 91. The refrigerator comprises a frame 92 providing support for a (not shown) cooling device for cooling the cooling space 93. See through windows 94,95 surround the cooling space 93.
15 A top side of the cooling space 93 is provided with a slide door, comprising two doors 96,97 held in horizontal guides. The doors, known as such, provide access to the otherwise closed cooled space 93.

In the cooled space several different ice cream packages 98-
20 100 are displayed to trigger a consumer to buy the food items.

Each type of food item 98-100 is received in its own cartridge 101-103. The cartridge provides a holder formed by a container space surround by four walls and a bottom. The food items are stacked in an attractive manner, as the cartridges can
25 be pre-filled at a filling location remote from the refrigerator 90.

Pre-filled cartridges, each comprising a single type of multiple food items, are positioned in the cartridge support element 105 received in the cooling space 93. In this embodiment
30 the cartridge support element comprises an array of 4 x 7 openings of similar size. The cartridges 101-103 are of similar size and the container 104 can be received in the openings, while a circumferential edge 108 is supported by the cartridge support element 105.

35 Figure 8 shows a food station 110. Tableware objects 117-119 and single serving packages 115,116 are displayed. The display

comprises a titled cartridge support element 114 formed near an upper side of the food station 110. Although the cartridges are of similar size, different sizes are possible. Empty cartridge 113 is shown removed from the opening 112.

5 The food station 110 comprises a frame having three drawers 120-122. Drawer 121 is shown opened. Drawer 121 provides storing space for spare pre-filled cartridges 124. Clearly other doors or means for access are possible for providing a temporary storing facility of cartridges in the food station 110.

10 If a cartridge 113,115-119 is (close to) empty, it can be replaced, on site and directly, by a prefilled cartridge stored in the drawer. The cartridges 124 are stored with the seal still closed .

15 The present invention is not restricted to the specific embodiments discussed in the present application. Various changes or modifications and changes can be made to the embodiments described without departing from the scope of the present invention .

CLAIMS

1. Device for holding disposable tableware objects, for instance cutlery and/or dishes, the device comprising:

- 5 - at least one cartridge comprising a holder configured to accommodate a plurality of tableware objects;
- a cartridge support element for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is
- 10 removably mounted.

2. Device as claimed in claim 1, comprising at least two cartridges, each configured to accommodate a single type of tableware object, the at least two cartridge configured to accommodate different tableware objects, and the cartridge support

15 element comprising at least two openings into which the at least two cartridges are removably mounted.

3. Device as claimed in 1 or 2, comprising at least one, two or more cartridges, each cartridge filled with a number of tableware objects.

20 4. Device as claimed in any of the preceding claims, wherein the cartridge support element comprising two or more openings is configured to support a plurality of cartridges and wherein at least two of the cartridges are mounted interchangeable.

25 5. Device as claimed in any of the preceding claims, comprising a plurality of cartridges having different dimensions and/or shapes .

6. Device as claimed in any of the preceding claims, the cartridge furthermore comprising a seal element arranged to seal off the tableware objects in the holder.

30 7. Device as claimed in claim 6, wherein the seal element comprises a removable sheet of material.

8. Device as claimed in claim 5 or 6, wherein the contents of the cartridge is sealed in a substantially airtight manner from the surroundings .

35 9. Device as claimed in any of the preceding claims, wherein the cartridge comprises a circumferential flange, the flange being

configured to rest upon a circumferential edge of the opening in the cartridge support element when the cartridge is in mounted condition .

10. Device as claimed in any of the preceding claims,
5 wherein the cartridge support element comprises a plurality of legs for supporting the element on a substantially horizontal surface .

11. Device as claimed in any of the preceding claims,
wherein the cartridge support element comprises an array of
10 openings, each of the openings being shaped so as to allow at least one correspondingly shaped cartridge to be slid in and out to attach the cartridges to the support element respectively to remove the cartridges from the support element.

12. Device as claimed in any of the preceding claims,
15 wherein the objects are positioned in a stacked arrangement inside the holder of the cartridge.

13. Device as claimed in any of the preceding claims,
wherein the cartridge is formed with one or more slots into which tableware objects are snugly fitted.

20 14. Combination of the device as claimed in any of the preceding claims and a plurality of table objects accommodated in at least one cartridge.

15. Combination as claimed in claim 14, wherein the table
25 objects are disposable tableware objects made of a plastic material.

16. Combination as claimed in any of claim 14 or 15, wherein the table objects are made of biodegradable material, for instance PLA, PCL, PHA, TPS or cellulose.

17. Combination as claimed in any of claims 14-16, wherein
30 the table objects comprise pieces of cutlery having a metal coating .

18. Cartridge comprising a holder wherein a plurality of table objects, such as disposable tableware objects, is
accommodated, the cartridge being configured to be removably
35 mounted in a device as claimed in any of the preceding claims.

19. Cartridge as claimed in claim 18, comprising a seal element arranged to seal off the tableware objects in the holder.

20. Cartridge as claimed in claim 18 or 19, wherein the seal element comprises a removable sheet of material.

5 21. Cartridge as claimed in claim 18, 19 or 20, wherein the seal element is attached to the holder to seal the contents of the holder in a substantially airtight manner.

22. Cartridge as claimed in any of claims 18-21, wherein the holder comprises a circumferential flange, the flange being
10 configured to rest upon a circumferential edge of the opening in the cartridge support element when the cartridge is in mounted condition .

23. Cartridge as claimed in any of claims 18-22, wherein the disposable tableware objects are positioned in a stacked
15 arrangement inside the holder of the cartridge.

24. Cartridge as claimed in any of claims 18-23, wherein the cartridge is formed with one or more slots into which tableware objects are snugly fitted.

25 25. Cartridge as claimed in any of claims 18-24, wherein the disposable tableware objects and/or the holders are made of a plastic material.

26. Cartridge as claimed in any of claims 18-25, wherein the tableware objects and/or the holder are made of biodegradable material, for instance PLA, PCL, PHA, TPS or celluse.

25 27. Cartridge comprising a holder wherein a plurality of table objects of a single type are accommodated, the cartridge being configured to be mounted in a device as claimed in any of the claims 1-17.

30 28. Cartridge according to claim 27, wherein the table object is one or more from the group of cutlery, disposable cutlery, napkins, condiments, single-serving portion packs.

29. Cartridge according to claim 27 or 28, further comprising any of the features of claims 19-26.

35 30. Method of distributing food objects comprising providing the table objects, filling a holder of a cartridge with the table objects, at a location for distributing the table objects

providing a cartridge support element having an opening for removably mounting the cartridge, and mounting the prefilled cartridge in the cartridge support element.

31. Method according to claim 30, wherein the filled
5 cartridge is transported to the location for distributing the table objects.

32. Method according to claim 30 or 31, wherein the prefilled cartridge is sealed or closed.

33. System for distributing table objects, the system
10 comprising table objects and a device for holding tableware objects is provided, the device comprising

- at least one system of cartridge and table objects, the cartridge comprising a holder configured to accommodate a plurality of tableware objects;
- 15 - a cartridge support element for supporting the at least one cartridge, the cartridge support element comprising at least one opening into which at least one cartridge is removably mounted,

wherein the table objects are held in the holder.

34. Device according to any of the claims 1-13, combination
20 according to any of the claims 14-17 or system according to claim 33, wherein the device comprises a frame supporting the cartridge support element, the device arranged as a display.

35. Device, combination or system, according to claim 34,
25 wherein the device is a refrigerator and the cartridge support device is arranged in a cooling area accessible via a door.

36. Device, combination or system according to claim 34 or
35, wherein the device is arranged as a station comprising a door or sliding tray for holding multiple spare cartridges.

37. Device, combination or system according to any of the
30 claims 34-36, wherein the device is a cart comprising wheels.

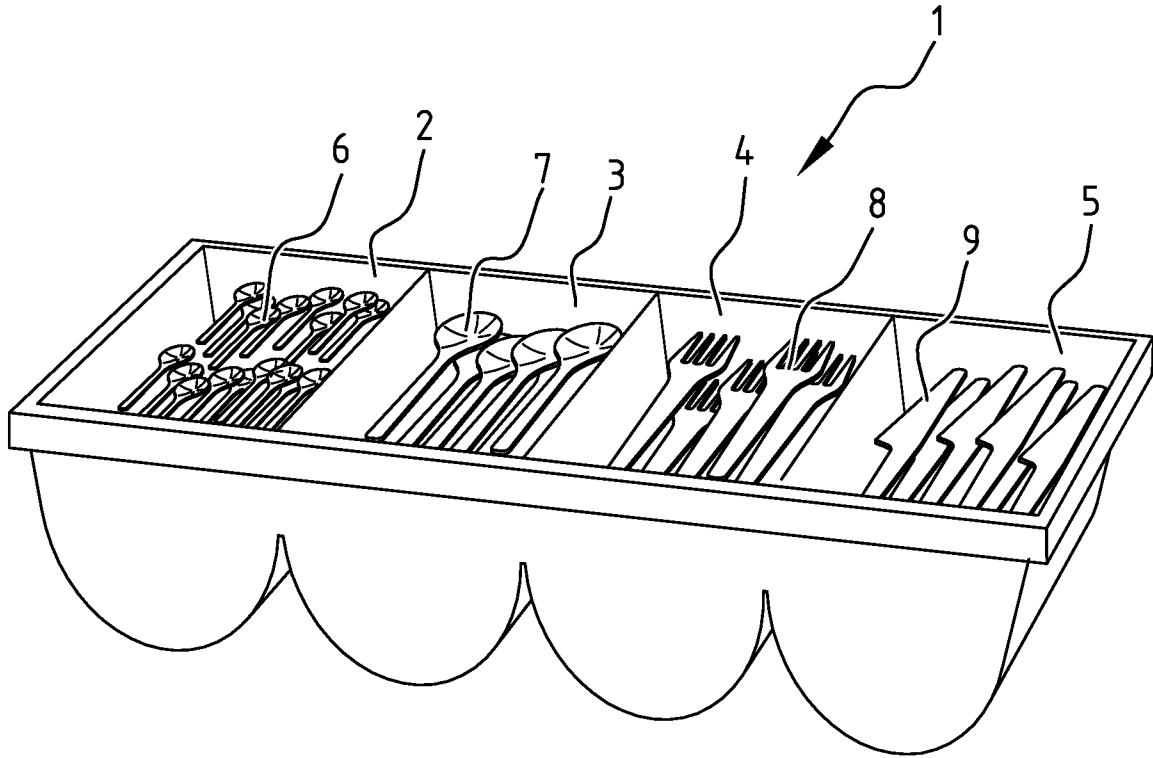


FIG. 1

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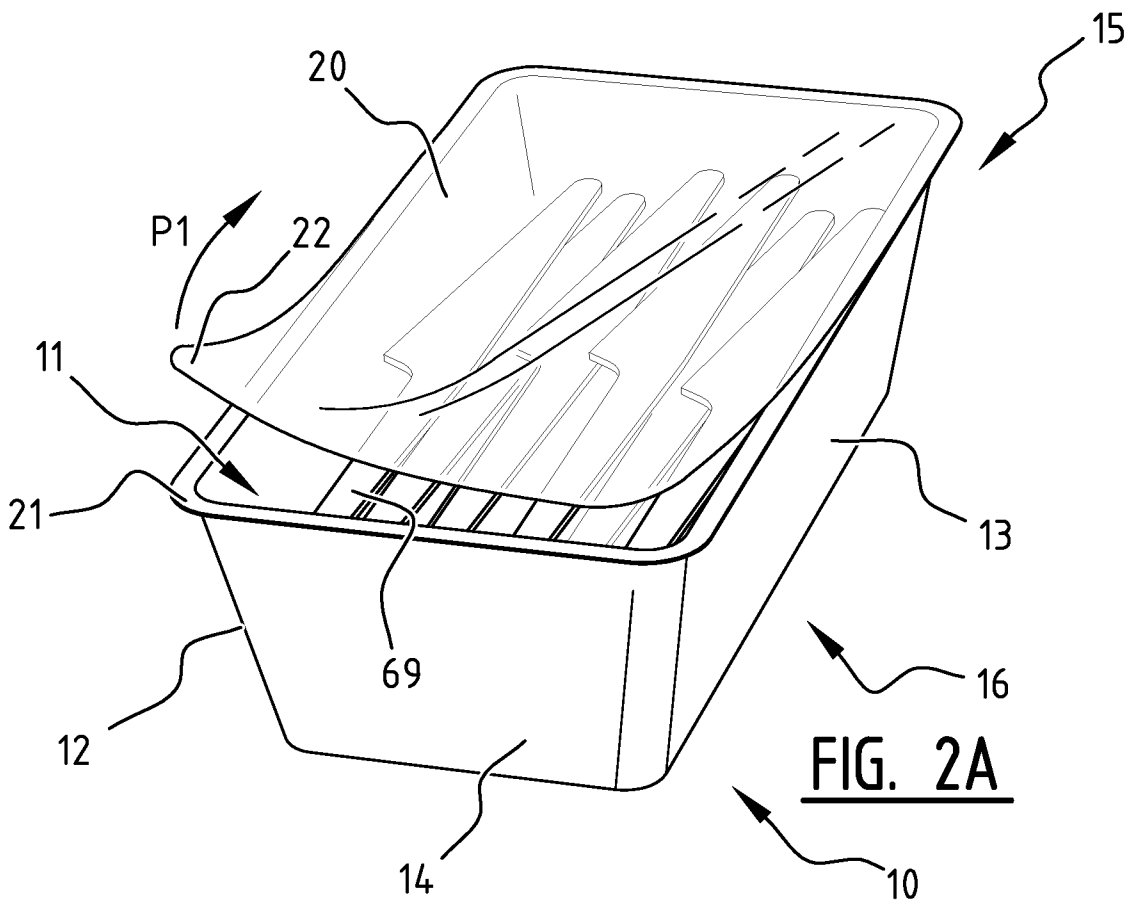


FIG. 2A

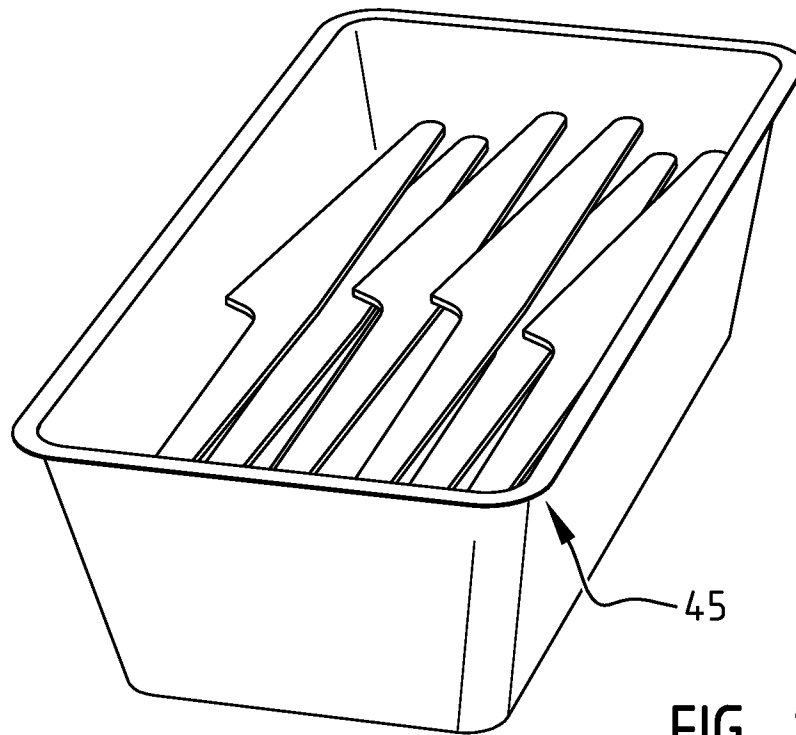


FIG. 2B

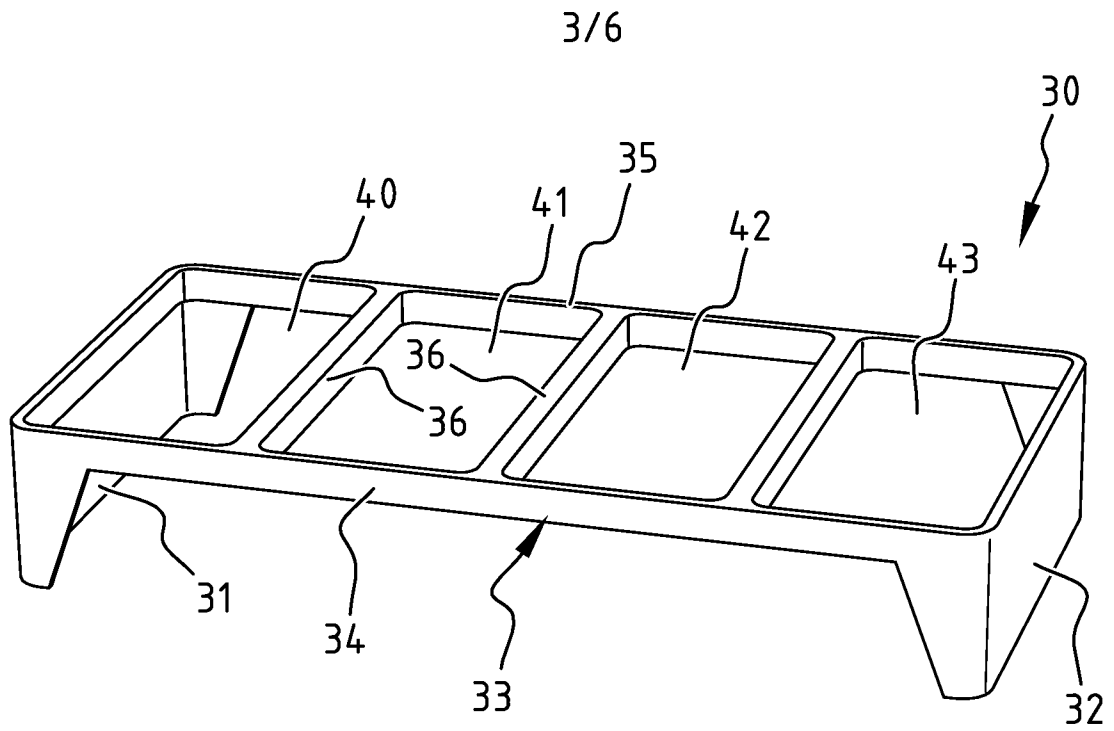


FIG. 3

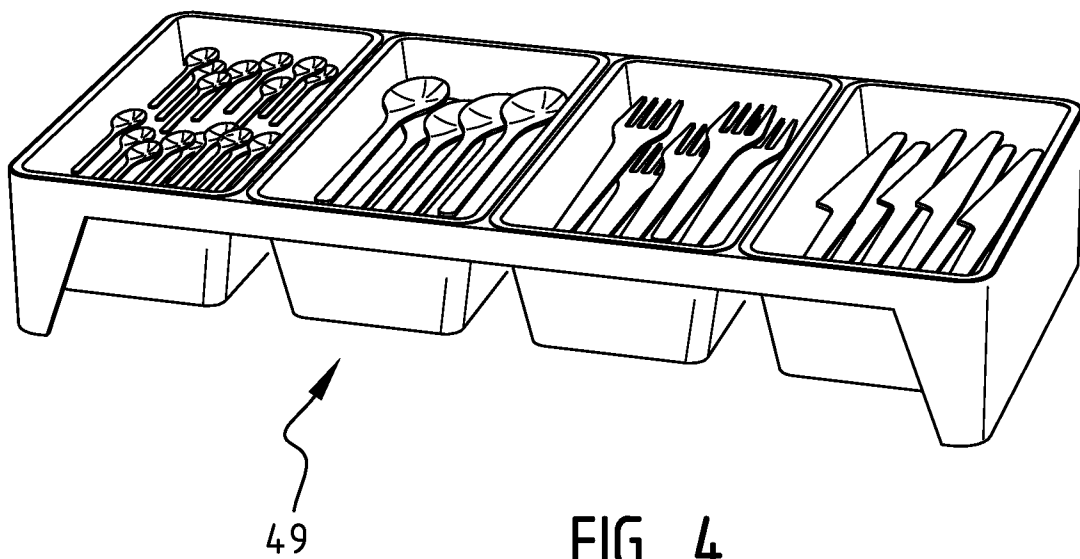


FIG. 4

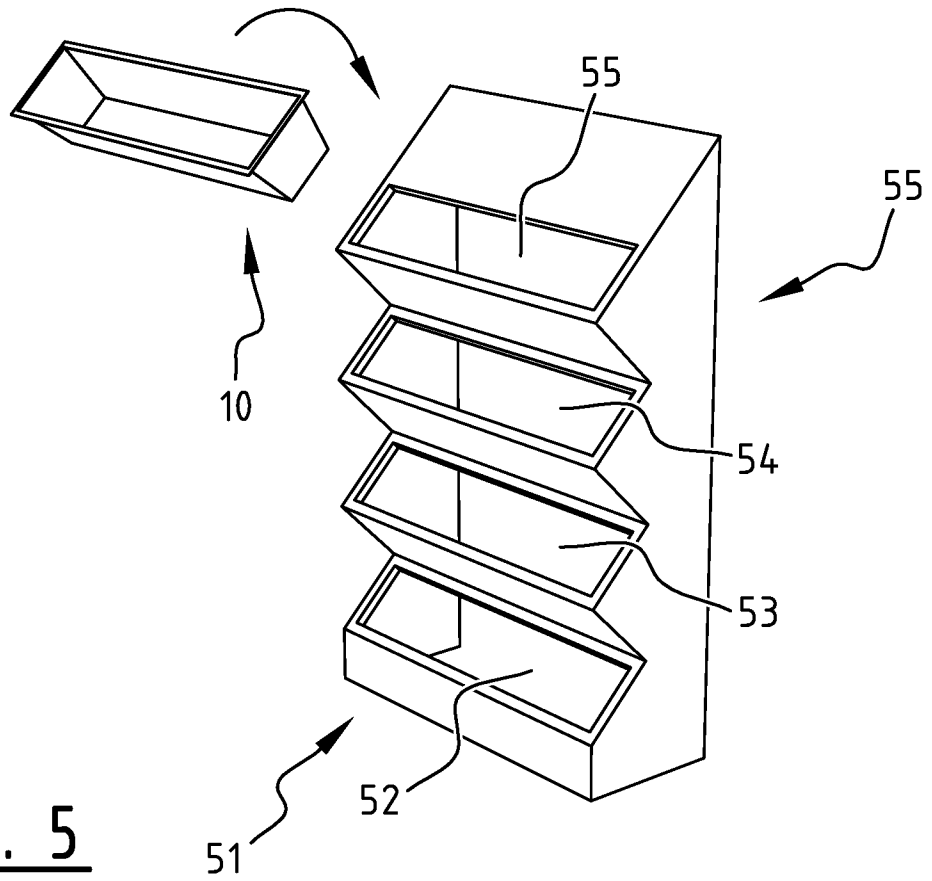


FIG. 5

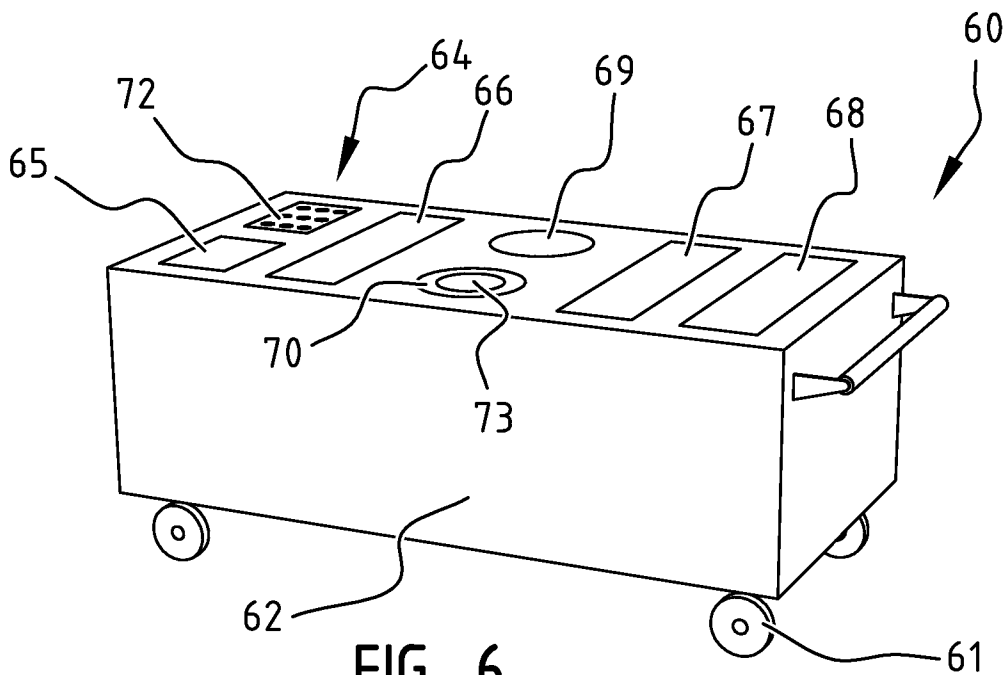


FIG. 6

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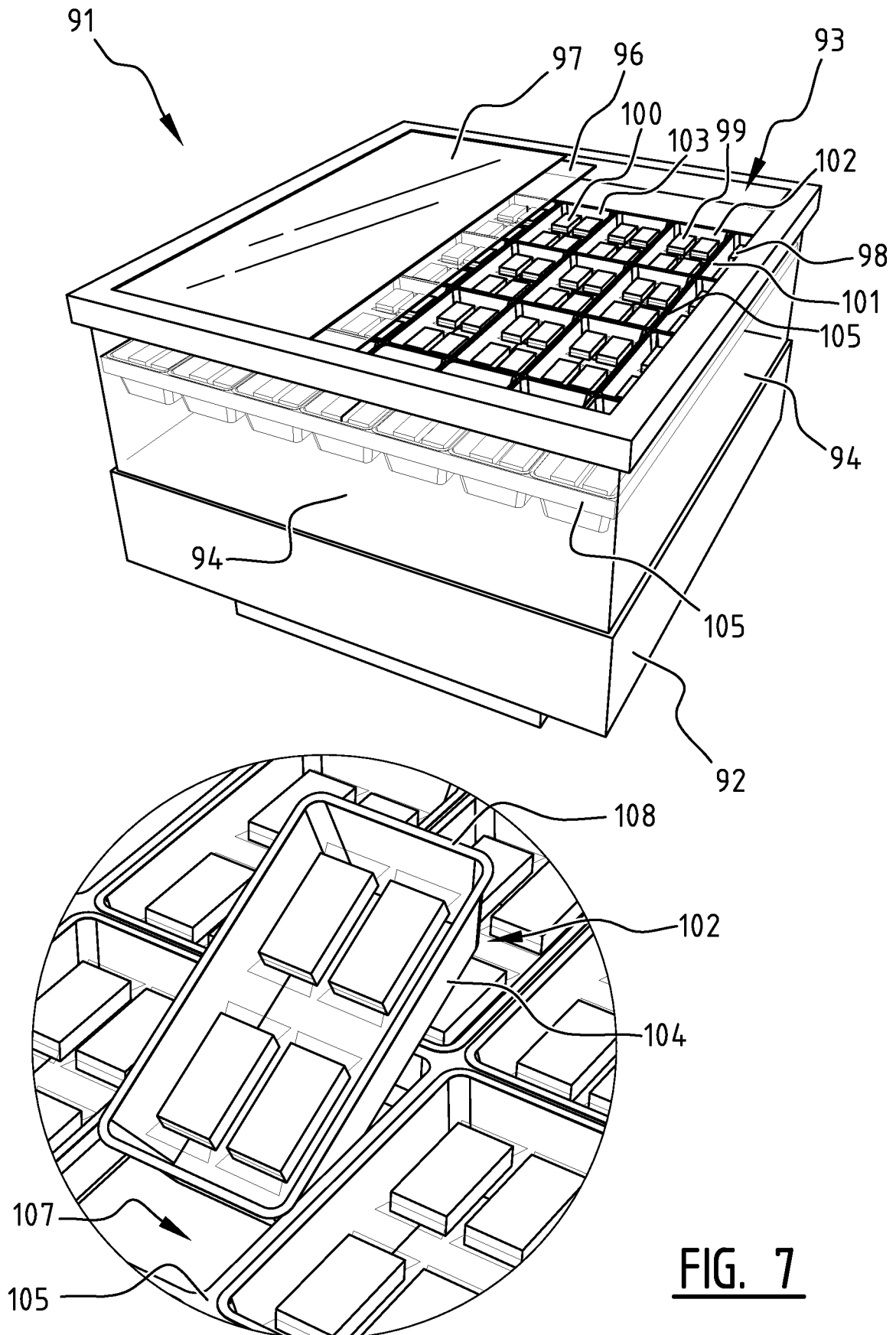


FIG. 7

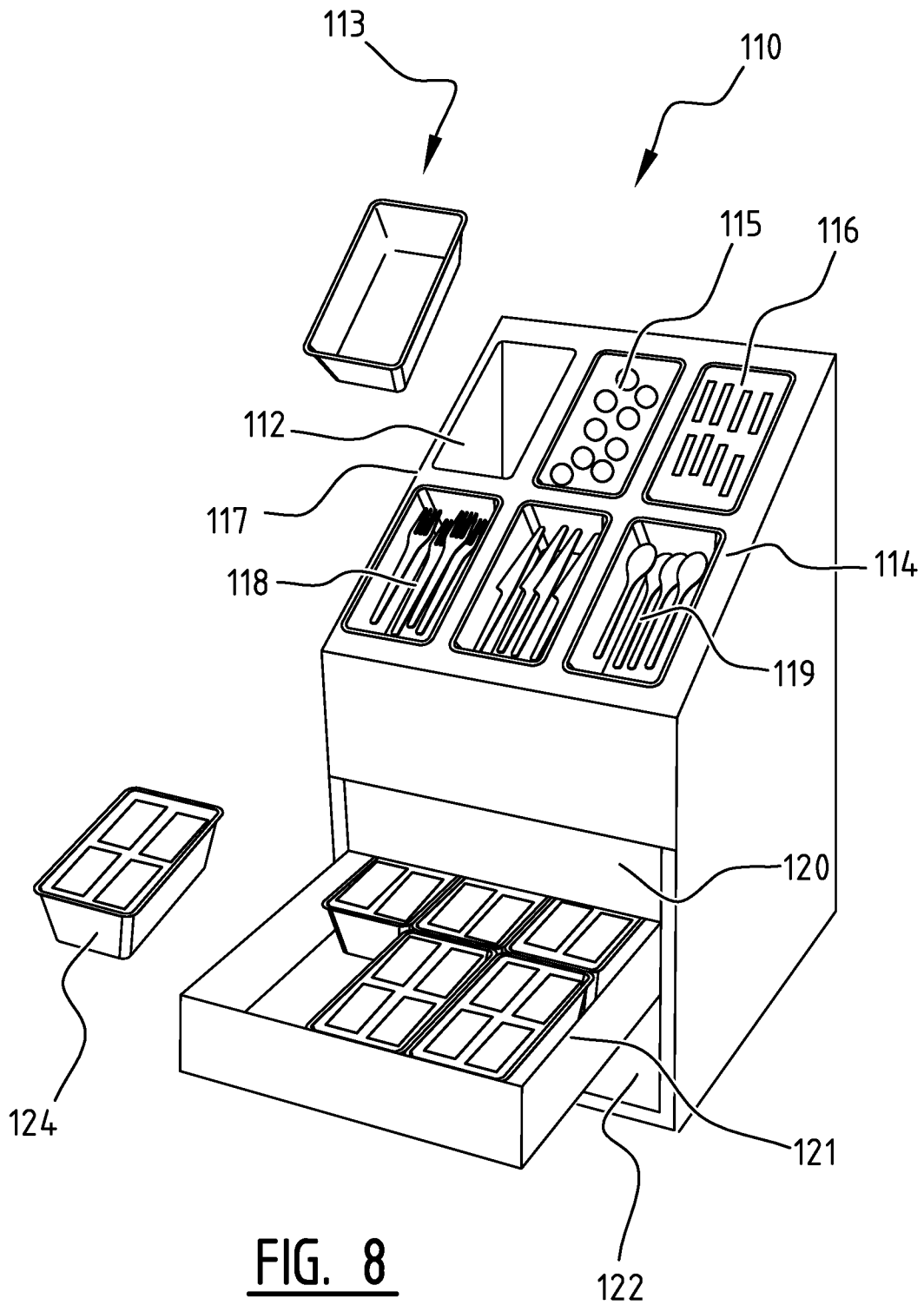


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/062005

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47G21/14 A47B77/14 A47B88/20 A47F1/10 B65D1/34
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47G A47B A47F B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/082307 AI (TUCKER TERENCE [US]) 21 April 2005 (2005-04-21) paragraphs [0033] - [0057] ; figures -----	1-37
X	US 5 921 408 A (GROENEWOLD KEITH [US] ET AL) 13 July 1999 (1999-07-13) column 4, line 5 - column 9, line 55; figures -----	I - 8, II- 21, 23-37
X	US 1 682 885 A (BUTLER FANNIE M) 4 September 1928 (1928-09-04) page 1, line 83 - page 3, line 127; figures -----	1-6, 11, 12, 14-19, 23, 25-30, 33-36

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 8 December 2011	Date of mailing of the international search report 19/12/2011
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Van Bastel aere, Tiny
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2011/062005

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