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(54) **MODULAR CONTAINER FOR A SEPARATE COLLECTION OF WASTE**

(57) Modular container (200) for a separate collection of waste, where its inner space is divided in different sections, able to contain two, three or four different bags separated each other, characterized in that comprising:

- a series of radial elements (201a, 201b, 201c, 201d), each of them being represented by an independent module that, together with the other modules, achieves a general structure having the shape of a cone or a cylinder; said radial elements (201a, 201b, 201c, 201d) can be connected each other along their respective right and left lateral borders, by using a respective connecting mechanism (220); one of said radial elements includes an outer housing (205) in order to insert possible add-on;
- a jointed base element (202), comprising in turn two platforms (203a, 203b), represented by elements that can rotate each in respect to the other, and in respect to a first central pivot (204); on said base element (202) the general structure of the modular container (200) stands up;
- a jointed top lid (250), having a circular shape, comprising in turn two fixed circular sectors (251a, 251b) and a series of movable circular sectors (252a, 252b, 252c, 252d, 252e, 252f) that can rotate in respect to said fixed circular sectors (251a, 251b) and in respect to a second central pivot (254); said lid (250) presents a jointed protrusion (253) on its radial border, said protrusion (253) being inserted in said outer housing (205), so that an opening/closing mechanism is achieved in the same lid (250) in respect to said modular container (200), so that the same container (200) presents an assembled configuration for a standard use, and a disassembled configuration for transportation, where said radial elements (201a, 201b, 201c, 201d) are disconnected, said base element (202) is disconnected and closed on itself, and said lid (250) is disconnected and closed on itself.

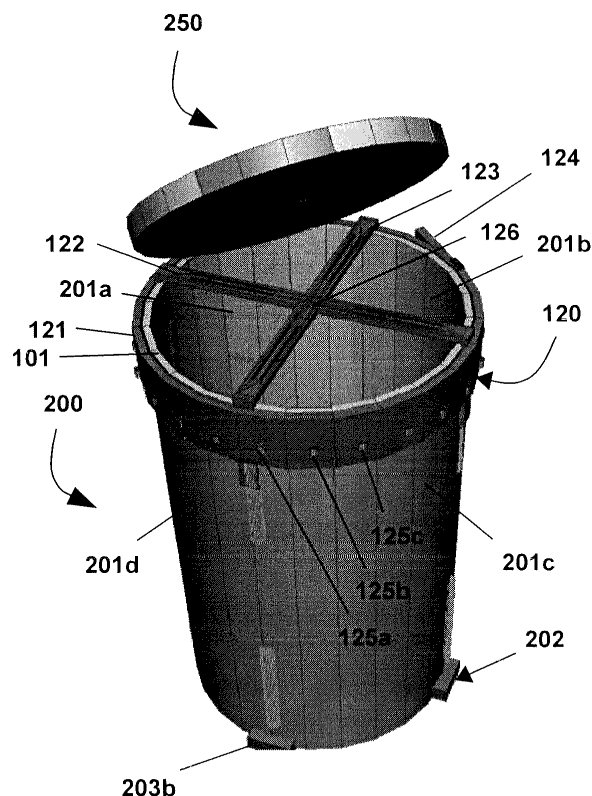


Fig. 14

Description

[0001] The present invention regards a modular container for a separate collection of waste, having size of a trash can collecting waste from people living in an entire building, where its inner space is divided in different sections, able to contain different bags separated each other. Said container is composed of all the necessary elements, including the lid, and it comprises a series of independent modules that are assembled to achieve a general structure having shape of a cone or a cylinder.

The container further comprises a device, according to the principles disclosed in EP 18425086, including a belt that is adaptable and variable in length in respect to different types and/or sizes of containers. Some braces are applied to said belt, in order to support some bags or multi-bags; the braces have their ends are fixed to the belt of the container, they include some grooves at a specific distance that allow the proper bags or multi-bags to be installed.

The modular container presents an assembled configuration for a standard use, and a disassembled configuration for transportation, where its components are possibly disconnected, closed and aligned each other, in order to be inserted in a transportation bag.

[0002] As known, in state of the art some examples of containers exist, that are divided in more sections in order to achieve a separate collection of waste.

US 5190183 (McNaughton et al.) essentially discloses an apparatus for dividing a trash receptacle into sections for the source separation of waste items and recycle materials. The apparatus is designed to be attached to the top opening of a trash receptacle, and facilitates the use of liner bags placed within the sections to produce sections for separating and storing the various types of trash and recyclables. The apparatus is adjustable to fit the top of various sizes of trash containers and is further adjustable in size, shape and the number of sections it divides into without inhibiting the use of the container lid. The apparatus can be configured to divide the container into thirds, halves or one half and two quarters to facilitate the separation of recyclables.

US 5246119 (Heffner) discloses an arrangement for pre-sorting recyclable materials that includes a certain number of plastic bags, each of them being associated to a sector of a container, that can be connected each to the adjacent one, up to fill all the inner space of a container. The bags have a connection and a disconnection mechanism, so that they can be added or removed, each independently to the others. The general structure is composed of bags that are connected each other, up to run a 360° angle and fill all the inner container. There are no additional supporting items, except some adhesive stripes or other items that assure the connection of the bags to the container.

WO 2015/139124 A1 (Atkinson) discloses an arrangement including an adjustable belt supporting a bag to be inserted in a container. The belt, composed with other

adjacent belts, can achieve a real frame that supports a series of independent bags, each of them associated to a different type of waste, achieving therefore a separate collection of waste. The means for attaching the adjacent belts each other, and attaching the belts to the lateral walls of the container, are given by specific clip hooks. The general arrangement permits to attach the multiple bags each other, and to adapt the general shape to different geometries, according to shape and size of the outer container. Additional examples of devices for separate collection of waste are disclosed by further documents that are less relevant, as i.e.: US 4905853, US 5033641, US 5085342, US 5183228, US 8950620, WO 2002/026595 A1, WO 2012/126132 A1.

Therefore, from a general point of view, US 5190183 (McNaughton et al.) discloses a rigid structure, radially adjustable, where some independent bags can be attached independently each other, by using a small spring or clip mechanisms. US 5246119 (Heffner) does not include a proper supporting structure, however it includes an attaching and lateral bags composition mechanism, that allows to add or remove each of them, inside a container, one independently to the others. WO 2015/139124 A1 (Atkinson) discloses a mechanism including an adjustable belt, however that is placed at the top border of each single bag, and then laterally attached to other similar belts in order to achieve a frame, that is attached in turn to the container by using specific or clips attachments.

[0003] Therefore, it arises from the above examples that there are no existing containers achieving all the objectives of the present invention. That is, a modular container for a separate collection of waste. Said container comprises a device, according to the principles disclosed in EP 18425086, including an adjustable belt that adapt itself to the upper border of the container, and having one or more braces on which some bags or multi-bags are attached. The container presents an assembled configuration for a standard use, and a disassembled configuration for transportation.

[0004] Therefore, the present invention overcomes all the drawbacks of the solutions disclosed from the prior art, and the main objective is to propose a modular container for a separate collection of waste, where its inner space is divided in different sections, able to contain different bags separated each other. Said container comprises a series of independent modules that are assembled to achieve a general structure having shape of a cone or a cylinder, so that the same container presents an assembled configuration for a standard use, and a disassembled configuration for transportation.

[0005] Another objective is that the modular container comprises a device, according to the principles disclosed in EP 18425086, with a belt that would be adaptable and variable in length, in respect to different types and/or sizes of the same containers, that the belt could be slightly pulled outside in order to install some braces supporting some bags or multi-bags, where the braces have their ends connected to the belt on the container, and the brac-

es have some grooves, at a specific distance, that allow the installation of an appropriate collecting multi-bag.

[0006] Another further objective is to include some environment compatible multi-bags, so that to achieve more collection sections in the container, i.e. two, three or four sections, in order to achieve a separate collection of waste, and in order that the same multi-bags can be steadily connected to the container.

[0007] Another objective is that it could possible to un-install, remove and exchange the multi-bags, for each section, in an autonomous and independent way in respect to the other parts of the structure.

[0008] Another further objective is to include a transportation system, that permits to contain and transport the components of the modular container in its disassembled configuration, with the same components being eventually disconnected, closed and aligned in order to occupy as less space as possible.

[0009] Therefore it is specific subject of the present invention a modular container for a separate collection of waste, where its inner space is divided in different sections, able to contain two, three or four different bags separated each other, characterized in that comprising:

- a series of radial elements, each of them being represented by an independent module that, together with the other modules, achieves a general structure having the shape of a cone or a cylinder; said radial elements can be connected each other along their respective right and left lateral borders, by using a respective connecting mechanism; one of said radial elements includes an outer housing in order to insert possible add-on;
- a jointed base element, comprising in turn two platforms, represented by elements that can rotate each in respect to the other, and in respect to a first central pivot; on said base element the general structure of the modular container stands up;
- a jointed top lid, having a circular shape, comprising in turn two fixed circular sectors and a series of movable circular sectors that can rotate in respect to said fixed circular sectors and in respect to a second central pivot; said lid presents a jointed protrusion on its radial border, said protrusion being inserted in said outer housing, so that an opening/closing mechanism is achieved in the same lid in respect to said modular container,

so that the same container presents an assembled configuration for a standard use, and a disassembled configuration for transportation, where said radial elements are disconnected, said base element is disconnected and closed on itself, and said lid is disconnected and closed on itself.

[0010] In addition to that expressed before, the invention is characterized by some significant advantages: the fact of representing a universal modular container that is adaptable to different types of use; the fact of implement-

ing the current standards and rules for the separate collection of waste; the fact of having sections of different colors according to the rules for treatment of that type of waste; the fact of decreasing the amount of space occupied in respect to the use of a larger number of containers; the fact of making bags and multi-bags available in the form of rolls, with a tear mechanism; the fact of proposing a low cost system, suitable for all the existent waste containers, and that is, at the same time, environment compatible, practical, fast and easy to be used.

[0011] The present invention is now being described according to non-limiting examples, with particular reference to the figures of the enclosed drawings, where:

Figure 1 is a perspective view of a standard domestic trash can for the collection of waste, according to the prior art;

Figure 2 is a perspective view of the same trash can of **Figure 1**, to which the device disclosed in EP 18425086 has been applied, in order to achieve a separate collection of waste;

Figure 3 is a perspective view in detail of the same trash can of **Figure 2**, in order to achieve a separate collection of waste;

Figure 4 is a top view of the modular container of the present invention, where a radial element is visible, that represents one of the modules that achieve the general structure;

Figure 5 is a top view of the connection mechanism of the radial elements, along their respective right and left lateral borders;

Figure 6 is a perspective view of the same container of **Figure 4**, where a radial element is visible, that represents one of the modules that achieve the general structure, with the base on which the entire structure stands up;

Figures 7, 8 and 9 are perspective views of a sequence of respective steps where the respective right and left borders of two radial elements that achieve the general structure are moved closer and connected.

Figure 10 is a top view of a lid that closes the top of the modular container and achieves an opening/closing mechanism;

Figure 11 is a perspective view of the same lid of **Figure 10**, in a closed position where the movable elements have rotated and are placed under the fixed elements:

Figure 12 is a lateral view of the same lid of **Figures 10 and 11**, where the single components are represented in a disassembled configuration;

Figure 13 is a perspective view of the modular container of the present invention, where all the main components are represented, and where a radial element is shown in detail, that represents one of the modules that achieve the gen-

eral structure;

Figure 14 is a perspective view of the same container of **Figure 13**, where all the main components are represented, to which the device disclosed in EP 18425086 has been applied, in order to achieve a separate collection of waste; **Figure 15** presents respective top and lateral views, in an assembled configuration, of a base element on which the entire structure stands up; **Figure 16** is a perspective view of a transportation bag, inside of which the components of the modular container are contained, that are represented by the radial elements, the base element and the lid.

[0012] It is underlined that only few of the many conceivable embodiments of the present invention are here described, which are just some specific non-limiting examples, having the possibility to describe many other embodiments based on the disclosed technical solutions of the present invention.

[0013] **Figure 1** shows a standard domestic trash can **100** for the collection of waste, according to the prior art. Instead, **Figure 2** shows the same trash can **100** where a device **120**, as disclosed in EP 18425086, has been installed. It allows to divide the inner space of the trash can **100** in different sections, and to adapt it to a separate collection of waste in respect to two, three or four separate bags.

With reference to **Figure 3**, the device **120** essentially comprises: a belt **121** to be applied to the outer walls of the top side **101** of a trash can **100**; some supporting braces **122**, **123**, ... placed in a diagonal direction, with their ends **122a**, **122b** and **123a**, **123b** that are fixed to the same belt **121** of the trash can **100**; some bags or multi-bags, fixed either in the grooves **122c**, **122d**, **122e**, **122f**, ... of the diagonal braces **122**, **123**, ... and under the supporting belt **121** installed on the trash can **100**. The belt **121** is adaptable and variable in length, i.e. by a clasp with a slot **124**, in respect to different types and/or sizes of trash cans **100**. Its inner contact surface is made of a material that is adhesive to the same trash can **100**. Its outer surface has some protuberances **125a**, **125b**, **125c**, ... that allow the belt **121** to be pulled out, so that the other components of the device **120** can be installed. The braces **122**, **123**, ... support some bags or multi-bags. They are of elastic type, and have the inner side made of the same adhesive material belonging to said belt **121**. The braces **122**, **123**, ... include some grooves **122c**, **122d**, **122e**, **122f**, ... at a specific distance that allow the proper insertion and installation of the respective bags or multi-bags.

Some environment compatible bags or multi-bags can be used, where multi-bags are composed of more single bags.

Once they are installed into the trash can **100**, more collection sections are achieved, i.e. two, three or four sections, in order to achieve a separate collection of waste.

By pulling a line of prefixed holes on the multi-bag it is possible to uninstall, remove and exchange each of the single bags in an autonomous and independent way in respect to the other part of the structure.

[0014] **Figure 13** represents a modular container **200**, according to the principles of the present invention, where a radial element is shown that is one of the modules that are part of the general structure.

The modular container **200** presents its inner space that is divided in different sections, able to contain two, three or four different bags separated each other. It comprises, as main components: a series of radial elements **201a**, **201b**, **201c**, **201d**; a jointed base element **202**; and a jointed top lid **250**.

In particular, **Figures 4 and 6** show a series of radial elements **201a**, **201b**, **201c**, **201d** and a jointed base element **202**.

Each of said radial elements **201a**, **201b**, **201c**, **201d** is represented by an independent module that, together with the other modules, achieves a general structure having the shape of a cone or a cylinder. Said radial elements **201a**, **201b**, **201c**, **201d** can be connected each other along their respective right and left lateral borders, by using a respective connecting mechanism **220**. A particular of the connecting mechanism **220** is shown in **Figure 5**. One of said radial elements includes an outer housing **205** in order to insert possible add-on.

The jointed base element **202** comprises in turn two platforms **203a**, **203b**, represented by elements that can rotate each in respect to the other, and in respect to a first central pivot **204**. On said base element **202** the general structure of the modular container **200** stands up.

The jointed top lid **250** has a circular shape, and comprises in turn two fixed circular sectors **251a**, **251b** and a series of movable circular sectors **252a**, **252b**, **252c**, **252d**, **252e**, **252f** that can rotate in respect to said fixed circular sectors **251a**, **251b** and in respect to a second central pivot **254**. Said lid **250** presents a jointed protrusion **253** on its radial border, said protrusion **253** being inserted in said outer housing **205**, so that an opening/closing mechanism is achieved in the same lid **250** in respect to said modular container **200**.

In such a way, the same container **200** presents an assembled configuration for a standard use, and a disassembled configuration for transportation, where said radial elements **201a**, **201b**, **201c**, **201d** are disconnected, said base element **202** is disconnected and closed on itself, and said lid **250** is disconnected and closed on itself.

[0015] **Figure 14** represents the same modular container **200**, according to the principles of the present invention, to which the device **120** disclosed in EP 18425086, and shown in **Figures 2 and 3**, is applied, in order to achieve a separate collection of waste.

The device **120** comprises in turn: a belt **121** supporting some braces **122**, **123**, ...; some braces **122**, **123**, ... supporting some bags or multi-bags; and some environment compatible bags or multi-bags.

The belt **121** supporting some braces **122**, **123**, ..., is applied to the outer walls of the top side **101** of container **200**. The belt **121** is adaptable and variable in length, i.e. by a clasp with a slot **124**, in respect to different types and/or sizes of container **200**, having an inner contact surface made of a material that is adhesive to the same container **200**. It has an outer surface having some protuberances **125a**, **125b**, **125c**, ... that allow the belt **121** to be pulled out, so that the other components of the device **120** can be installed.

The braces **122**, **123**, ..., supporting some bags or multi-bags, are of elastic type, and have the inner side made of the same adhesive material belonging to said belt **121**. The braces **122**, **123**, ... are placed in a diagonal direction, and their ends **122a**, **122b** and **123a**, **123b** are fixed to the belt **121** of the container **200**. They include some grooves **122c**, **122d**, **122e**, **122f**, ..., at a specific distance that allow the proper insertion and installation of the respective bags or multi-bags.

The environment compatible bag or multi-bags are composed of more single bags, so that to achieve more collection sections in the container **200**, i.e. two, three or four sections, in order to achieve a separate collection of waste. The bags or multi-bags can be fixed either in the grooves **122c**, **122d**, **122e**, **122f**, ..., of the diagonal braces **122**, **123**, ..., and under the supporting belt **121** installed on the container **200**. By pulling a line of prefixed holes on the multi-bag it is possible to uninstall, remove and exchange each of the single bags, in an autonomous and independent way in respect to the other part of the structure.

[0016] According to a first embodiment of the present invention, the modular container **200** comprises a unique brace **122** supporting bags or multi-bags.

The brace **122** is of elastic type, and has the inner side made of the same adhesive material belonging to said belt **121**. The brace **122** is placed as a diameter of the container **200** and its ends **122a**, **122b** are fixed to the belt **121**. The brace **122** includes some grooves **122c**, **122d**, **122e**, **122f**, at a specific distance, that allow the proper insertion and installation of the respective bags or multi-bags.

[0017] According to a second embodiment of the present invention, the modular container **200** comprises two braces **122**, **123** supporting bags or multi-bags. The braces **122**, **123** are of elastic type, and have the inner side made of the same adhesive material belonging to said belt **121**. The braces **122**, **123** are placed as diameters of the container **200** and they cross each other according to an angle of 90° , where a first brace **123** passes through a hole **126** placed into a second brace **122**, and their ends **122a**, **122b** and **123a**, **123b** are fixed to the belt **121**. The braces **122**, **123** include some grooves **122c**, **122d**, **122e**, **122f**, ..., at a specific distance, that allow the proper insertion and installation of the respective bags or multi-bags.

[0018] According to a third embodiment of the present invention, the modular container **200** comprises three

braces **130**, **131**, **132**, or a primary brace **130**, **131** and a secondary brace **132**, supporting bags or multi-bags. The braces **130**, **131**, **132** are of elastic type, and have the inner side made of the same adhesive material belonging to said belt **121**. The braces **130**, **131**, **132** are placed as rays of the container **200** and they cross each other according to an angle of 120° , where the three braces **130**, **131**, **132** are connected at one of their ends, or the secondary brace **132** passes through a hole **126** placed on the primary brace **130**, **131**, with their ends fixed to the belt **121**. The braces **130**, **131**, **132** include some grooves at a specific distance that allow the proper insertion and installation of the respective bags or multi-bags.

[0019] With reference to **Figure 5**, said connecting mechanism **220** of said radial elements **201a**, **201b**, **201c**, **201d** along their respective right **222** and left **221** lateral borders is composed of a protruding element **224**, having i.e. the shape of a cylinder, that is inserted in a proper hollow housing **223**, having a complementary shape, so that two of said radial elements **201a**, **201b**, **201c**, **201d** are jointed laterally and kept connected.

[0020] **Figures 7, 8 and 9** show a sequence of respective steps where the respective right and left borders of two radial elements that achieve the general structure are moved closer and connected.

The connecting mechanism **240** of two radial elements along their respective right **242** and left **241** lateral borders is composed of some protruding elements **244a**, **244b**, having i.e. the shape of a cylinder, that are inserted in proper hollow housings **245a**, **245b**, having a complementary shape. In a first step the right **242** and left **241** lateral borders are placed at different height from the ground so that the protruding elements **244a**, **244b** are placed in the spaces **243a**, **243b**. In a second step the right **242** lateral border is shifted so that the protruding elements **244a**, **244b** are inserted completely in the housings **245a**, **245b** of the left **241** lateral border, and so that said two radial elements are jointed laterally and kept connected.

[0021] With reference to **Figures 10, 11 and 12**, the jointed top lid **250** comprises an opening/closing mechanism according to which said movable circular sectors **252a**, **252b**, **252c**, **252d**, **252e**, **252f** rotate in respect to said fixed circular sectors **251a**, **251b** and in respect to said second central pivot **254**. In the closed position said circular sectors **252a**, **252b**, **252c**, **252d**, **252e**, **252f** are placed under said fixed circular sectors **251a**, **251b** and the structure occupies a small space. In the open position said circular sectors **252a**, **252b**, **252c**, **252d**, **252e**, **252f** are placed side by side with said fixed circular sectors **251a**, **251b** and the structure is shaped approximately as a disk.

[0022] With reference to **Figure 15**, the jointed base element **202** comprises an opening/closing mechanism according to which said two platforms **203a**, **203b** rotate each other and in respect to said first central pivot **204**. In the closed position said two platforms **203a**, **203b** are

placed one under the other and the structure occupies a small space. In the open position said two platforms **203a**, **203b** are placed one perpendicular to the other, and the structure is shaped approximately as a cross.

[0023] With reference to **Figure 16**, the modular container **200** of the present invention can further comprise a transportation bag **300**.

It has preferably the shape of a parallelepiped and has a lateral pocket **303**. Inside the bag **300** the components of the modular container **200** are contained, and they are represented by: the radial elements **201a**, **201b**, **201c**, **201d** that are disconnected and aligned each other in order to occupy as less space as possible; the jointed base element **202** in the closed position; the jointed top lid **250** in the closed position.

[0024] An alternative embodiment of the present invention is represented by a container that is portable and appropriate for travelling, and able to achieve a separate collection of waste, by construction of a specific structure. It can be made of plastic or metal, and achieves a structure composed of: a circular base that is placed in a horizontal direction; at least two circular sections placed in a horizontal direction, at a specific distance each other and in respect to said circular base; a series of rods that compose a supporting bar, to which said circular base and sections are attached; a circular cover covering the upper side of the structure; and a tissue, that is wrapped around as a cylinder, covering the radial part of the structure.

The circular base is placed in a horizontal direction, has an outer radial border with a surface made of velcro, and further comprises a threaded vertical housing, in order to insert a rod by a screwing operation.

The series of rods, with their respective ends that are threaded each other in a complementary way, are placed in a vertical direction, with a first rod screwed into said housing, and the other rods screwed each other at their respective ends, one following the other, along the vertical direction, in order to compose a supporting bar.

The circular sections have an outer radial border with a surface made of velcro, and include a hole at the same radial border, so that they can be placed in a horizontal direction, at a specific distance each other and in respect to said circular base, they can be connected by a screw and can be laterally supported by said supporting bar, at the points of the rods that pass through said holes.

The circular cover has the same size of the circular base, and it is connected at the upper side of the structure through a mechanism, so that it can be opened and closed, by pulling a specific protuberance on it.

The flexible tissue is made of a synthetic material, that is wrapped around as a cylinder in order to contain said circular base and said circular sections inside, being radially connected to them by a velcro mechanism.

[0025] Therefore, the above components are composed of: a circular base, a series of rods, at least two circular sections, a circular cover, a flexible tissue. The components can be disassembled and can be contained

in a small space, constrained at the lower side by said circular base, and constrained at the upper side by said circular cover, that connects itself perfectly according to its velcro mechanism, so that a kit that is portable and appropriate for travelling, allowing a separate collection of waste can be achieved.

[0026] Therefore, the above examples show that the present invention reaches all the expected objectives. In particular, it permits to achieve a modular container for a separate collection of waste, where its inner space is divided in different sections, able to contain different bags separated each other. Said container comprises a series of independent modules that are assembled to achieve a general structure having shape of a cone or a cylinder, so that the same container presents an assembled configuration for a standard use, and a disassembled configuration for transportation.

[0027] Further according to the invention, the modular container comprises a device, according to the principles disclosed in EP 18425086, with a belt that would be adaptable and variable in length, in respect to different types and/or sizes of the same containers, that the belt could be slightly pulled outside in order to install some braces supporting some bags or multi-bags, where the braces have their ends connected to the belt on the container, and the braces have some grooves, at a specific distance, that allow the installation of an appropriate collecting multi-bag.

[0028] Furthermore, some environment compatible multi-bags are included, so that to achieve more collection sections in the container, i.e. two, three or four sections, in order to achieve a separate collection of waste, and in order that the same multi-bags can be steadily connected to the container.

[0029] Then, according to the invention, it is possible to uninstall, remove and exchange the multi-bags, for each section, in an autonomous and independent way in respect to the other parts of the structure.

[0030] Finally, according to the invention, a transportation system is included, that permits to contain and transport the components of the modular container in its disassembled configuration, with the same components being eventually disconnected, closed and aligned in order to occupy as less space as possible.

[0031] The present invention has been described by making reference to some non limiting examples and following some preferred embodiments; however it goes without saying that modifications and/or changes could be introduced by those skilled in the art without departing from the relevant scope, as defined in the enclosed claims.

Claims

1. Modular container (200) for a separate collection of waste, where its inner space is divided in different sections, able to contain two, three or four different

bags separated each other, **characterized in that** comprising:

- a series of radial elements (201a, 201b, 201c, 201d), each of them being represented by an independent module that, together with the other modules, achieves a general structure having the shape of a cone or a cylinder; said radial elements (201a, 201b, 201c, 201d) can be connected each other along their respective right and left lateral borders, by using a respective connecting mechanism (220); one of said radial elements includes an outer housing (205) in order to insert possible add-on;
- a jointed base element (202), comprising in turn two platforms (203a, 203b), represented by elements that can rotate each in respect to the other, and in respect to a first central pivot (204); on said base element (202) the general structure of the modular container (200) stands up;
- a jointed top lid (250), having a circular shape, comprising in turn two fixed circular sectors (251a, 251b) and a series of movable circular sectors (252a, 252b, 252c, 252d, 252e, 252f) that can rotate in respect to said fixed circular sectors (251a, 251b) and in respect to a second central pivot (254); said lid (250) presents a jointed protrusion (253) on its radial border, said protrusion (253) being inserted in said outer housing (205), so that an opening/closing mechanism is achieved in the same lid (250) in respect to said modular container (200),

so that the same container (200) presents an assembled configuration for a standard use, and a disassembled configuration for transportation, where said radial elements (201a, 201b, 201c, 201d) are disconnected, said base element (202) is disconnected and closed on itself, and said lid (250) is disconnected and closed on itself.

2. Modular container (200) for a separate collection of waste, according to previous claim 1, **characterized in that** comprising a device (120) that comprises in turn:

- a belt (121) supporting some braces (122, 123, ...), said belt (121) to be applied to the outer walls of the top side (101) of container (200); the belt (121) being adaptable and variable in length, i.e. by a clasp with a slot (124), in respect to different types and/or sizes of container (200), having an inner contact surface made of a material that is adhesive to the same container (200), and an outer surface having some protuberances (125a, 125b, 125c, ...) that allow the belt (121) to be pulled out, so that the other components of the device (120) can be installed;

- some braces (122, 123, ...) supporting some bags or multi-bags, said braces (122, 123, ...) being of elastic type, and having the inner side made of the same adhesive material belonging to said belt (121); the braces (122, 123, ...) are placed in a diagonal direction, and their ends (122a, 122b) and (123a, 123b) are fixed to the belt (121) of the container (200), they include some grooves (122c, 122d, 122e, 122f, ...) at a specific distance that allow the proper insertion and installation of the respective bags or multi-bags;

- some environment compatible bags or multi-bags, where multi-bags are composed of more single bags, so that to achieve more collection sections in the container (200), i.e. two, three or four sections, in order to achieve a separate collection of waste; the bags or multi-bags can be fixed either in the grooves (122c, 122d, 122e, 122f, ...) of the diagonal braces (122, 123, ...), and under the supporting belt (121) installed on the container (200); by pulling a line of prefixed holes on the multi-bag it is possible to uninstall, remove and exchange each of the single bags, in an autonomous and independent way in respect to the other part of the structure.

3. Modular container (200) for a separate collection of waste, according to previous claim 2, **characterized in that** comprising:

- a unique brace (122) supporting bags or multi-bags, said brace (122) being of elastic type, and having the inner side made of the same adhesive material belonging to said belt (121); the brace (122) is placed as a diameter of the container (200), and its ends (122a, 122b) are fixed to the belt (121), the brace (122) includes some grooves (122c, 122d, 122e, 122f), at a specific distance, that allow the proper insertion and installation of the respective bags or multi-bags.

4. Modular container (200) for a separate collection of waste, according to previous claim 2, **characterized in that** comprising:

- two braces (122, 123) supporting bags or multi-bags, said braces (122, 123) being of elastic type, and having the inner side made of the same adhesive material belonging to said belt (121); the braces (122, 123) are placed as diameters of the container (200) and they cross each other according to an angle of 90°, where a first brace (123) passes through a hole (126) placed into a second brace (122), and their ends (122a, 122b) and (123a, 123b) are fixed to the belt (121), the braces (122, 123) include some grooves (122c, 122d, 122e, 122f, ...), at a specific distance, that

allow the proper insertion and installation of the respective bags or multi-bags.

5. Modular container (200) for a separate collection of waste, according to previous claim 2, **characterized in that** comprising:

- three braces (130, 131, 132), or a primary brace (130, 131) and a secondary brace (132), supporting bags or multi-bags, said braces (130, 131, 132) being of elastic type, and having the inner side made of the same adhesive material belonging to said belt (121); the braces (130, 131, 132) are placed as rays of the container (200) and they cross each other according to an angle of 120°, where the three braces (130, 131, 132) are connected at one of their ends, or the secondary brace (132) passes through a hole (126) placed on the primary brace (130, 131), with their ends fixed to the belt (121), the braces (130, 131, 132) include some grooves at a specific distance that allow the proper insertion and installation of the respective bags or multi-bags.

6. Modular container (200) for a separate collection of waste, according to previous claim 1, **characterized in that**:

- said connecting mechanism (220) of said radial elements (201a, 201b, 201c, 201d) along their respective right (222) and left (221) lateral borders is composed of a protruding element (224), having i.e. the shape of a cylinder, that is inserted in a proper hollow housing (223), having a complementary shape, so that two of said radial elements (201a, 201b, 201c, 201d) are jointed laterally and kept connected.

7. Modular container (200) for a separate collection of waste, according to previous claim 1, **characterized in that**:

- said connecting mechanism (240) of two radial elements along their respective right (242) and left (241) lateral borders is composed of some protruding elements (244a, 244b), having i.e. the shape of a cylinder, that are inserted in proper hollow housings (245a, 245b), having a complementary shape; in a first step the right (242) and left (241) lateral borders are placed at different height from the ground so that the protruding elements (244a, 244b) are placed in the spaces (243a, 243b), in a second step the right (242) lateral border is shifted so that the protruding elements (244a, 244b) are inserted completely in the housings (245a, 245b) of the left (241) lateral border, and so that said two radial elements are jointed laterally and kept connect-

ed.

8. Modular container (200) for a separate collection of waste, according to previous claim 1, **characterized in that**:

- said jointed top lid (250) comprises an opening/closing mechanism according to which said movable circular sectors (252a, 252b, 252c, 252d, 252e, 252f) rotate in respect to said fixed circular sectors (251a, 251b) and in respect to said second central pivot (254); in the closed position said circular sectors (252a, 252b, 252c, 252d, 252e, 252f) are placed under said fixed circular sectors (251a, 251b) and the structure occupies a small space, in the open position said circular sectors (252a, 252b, 252c, 252d, 252e, 252f) are placed side by side with said fixed circular sectors (251a, 251b) and the structure is shaped approximately as a disk.

9. Modular container (200) for a separate collection of waste, according to previous claim 1, **characterized in that**:

- said jointed base element (202) comprises an opening/closing mechanism according to which said two platforms (203a, 203b) rotate each other and in respect to said first central pivot (204); in the closed position said two platforms (203a, 203b) are placed one under the other and the structure occupies a small space, in the open position said two platforms (203a, 203b) are placed one perpendicular to the other, and the structure is shaped approximately as a cross.

10. Modular container (200) for a separate collection of waste, according to previous claims 1 and 2, **characterized in that** further comprising:

- a transportation bag (300), having preferably the shape of a parallelepiped and having a lateral pocket (303); inside the bag (300) the components of the modular container (200) are contained, and they are represented by: the radial elements (201a, 201b, 201c, 201d) that are disconnected and aligned each other in order to occupy as less space as possible; the jointed base element (202) in the closed position; the jointed top lid (250) in the closed position.

11. Modular container (200) that is portable and appropriate for travelling, and able to achieve a separate collection of waste, according to previous claims 1 and 2, made of plastic or metal, **characterized in that** achieving a structure composed of:

- a circular base that is placed in a horizontal

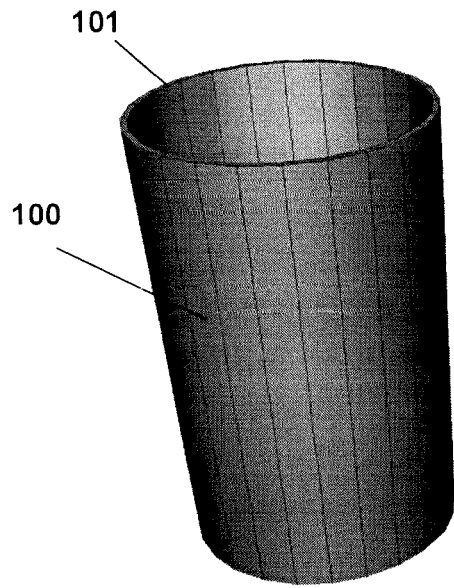
direction, and having an outer radial border with a surface made of velcro, further comprising a threaded vertical housing, in order to insert a rod by a screwing operation;

- a series of rods, having their respective ends that are threaded each other in a complementary way, that are placed in a vertical direction, having a first rod screwed into said housing, and the other rods being screwed each other at their respective ends, one following the other, along the vertical direction, in order to compose a supporting bar;
- at least two circular sections, having an outer radial border with a surface made of velcro, that include a hole at the same radial border, so that they can be placed in a horizontal direction, at a specific distance each other and in respect to said circular base, they can be connected by a screw and can be laterally supported by said supporting bar, at the points of the rods that pass through said holes;
- a circular cover, having the same size of the circular base, that is connected at the upper side of the structure through a mechanism, so that it can be opened and closed, by pulling a specific protuberance on it;
- a flexible tissue made of a synthetic material, that is wrapped around as a cylinder in order to contain said circular base and said circular sections inside, being radially connected to them by a velcro mechanism.

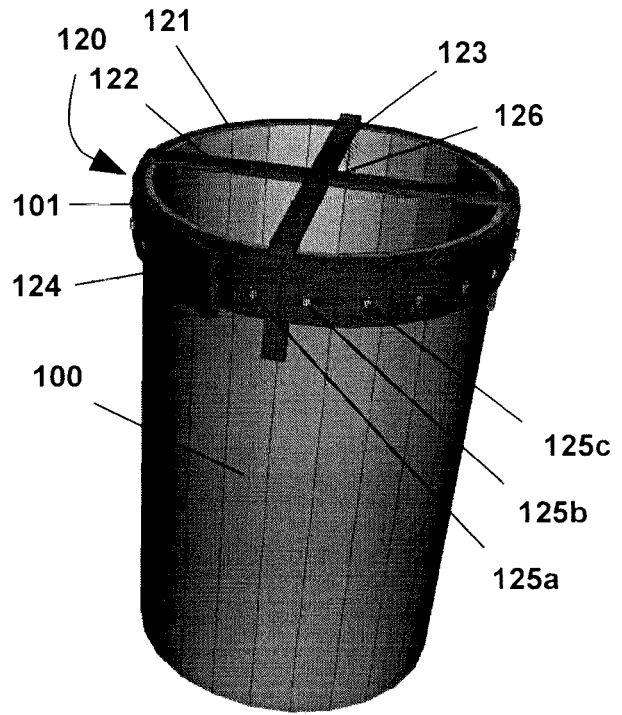
12. Modular container (200) that is portable and for travelling, for a separate collection of waste, according to previous claim 11, **characterized in that:**

- said components are composed of: a circular base, a series of rods, at least two circular sections, a circular cover, a flexible tissue; said components can be disassembled and can be contained in a small space, constrained at the lower side by said circular base, and constrained at the upper side by said circular cover that connects itself perfectly according to its velcro mechanism,

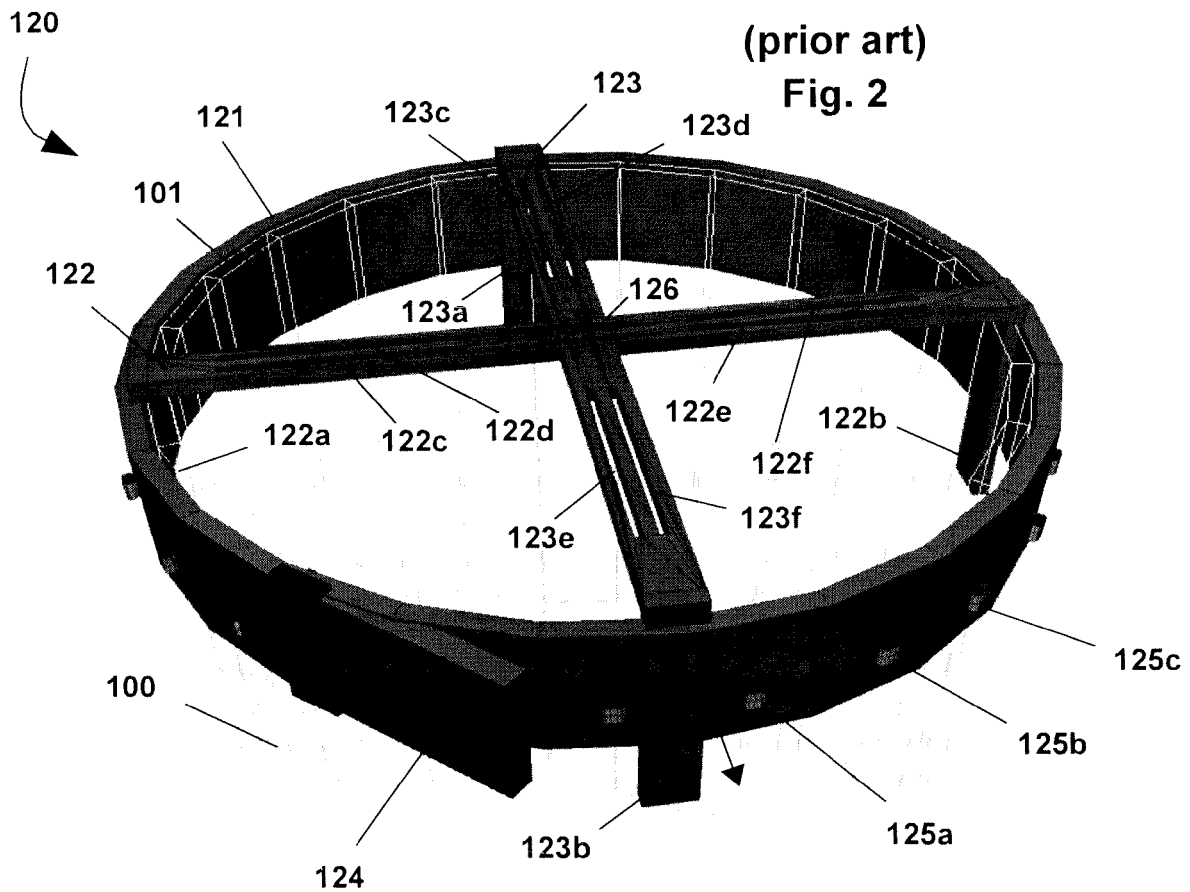
so that a kit that is portable and appropriate for travelling, allowing a separate collection of waste can be achieved.



(prior art)
Fig. 1



(prior art)
Fig. 2



(prior art)
Fig. 3

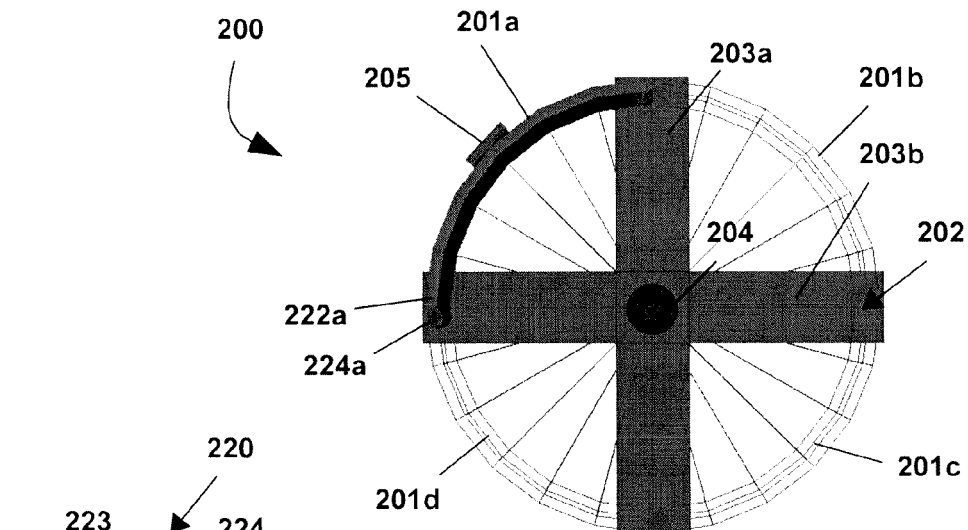


Fig. 4

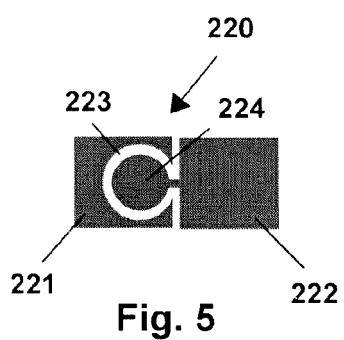


Fig. 5

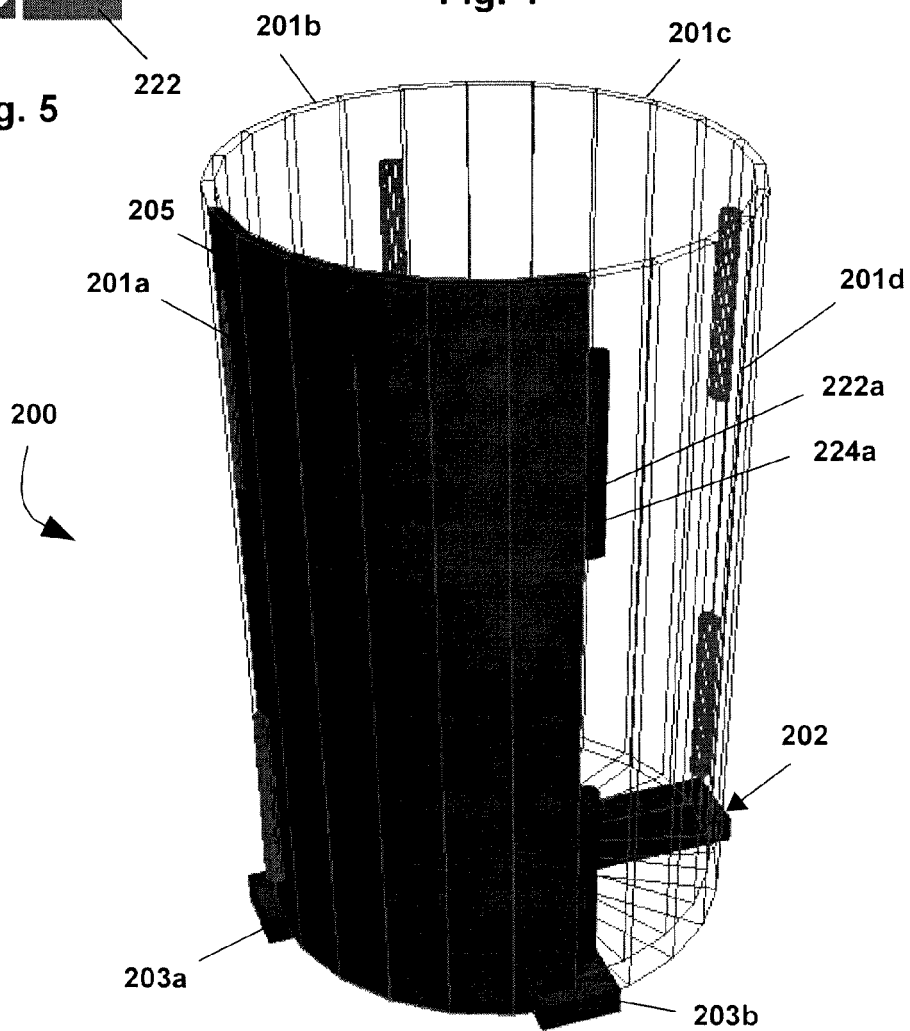


Fig. 6

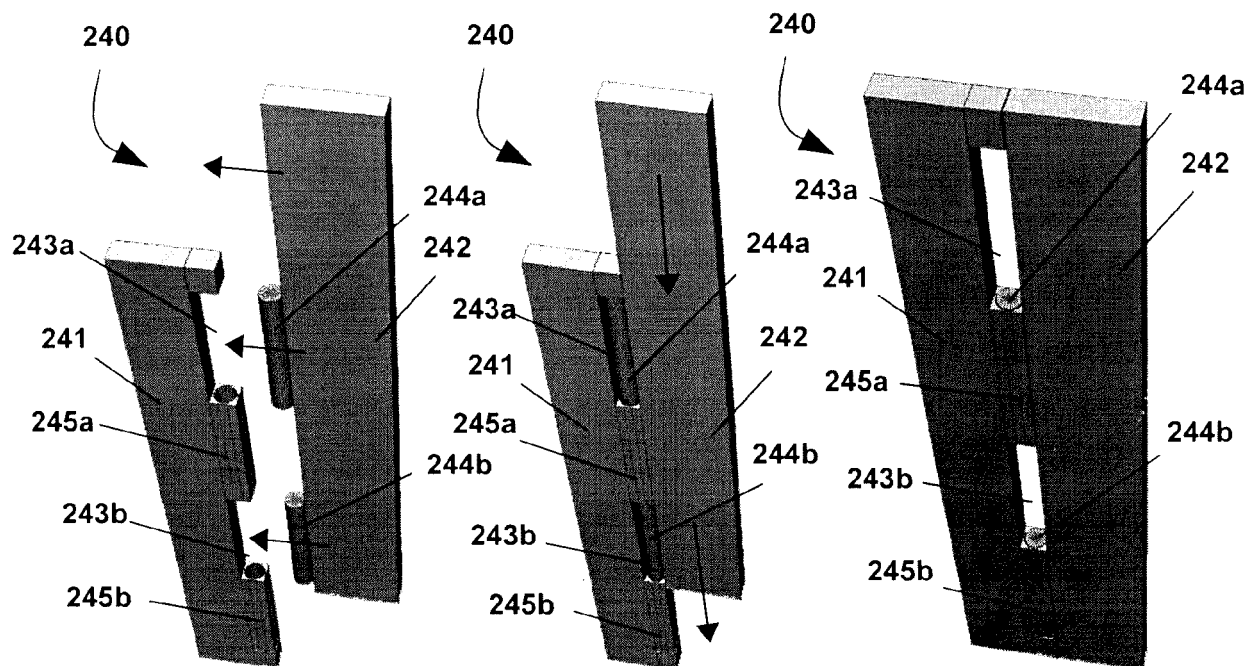


Fig. 7

Fig. 8

Fig. 9

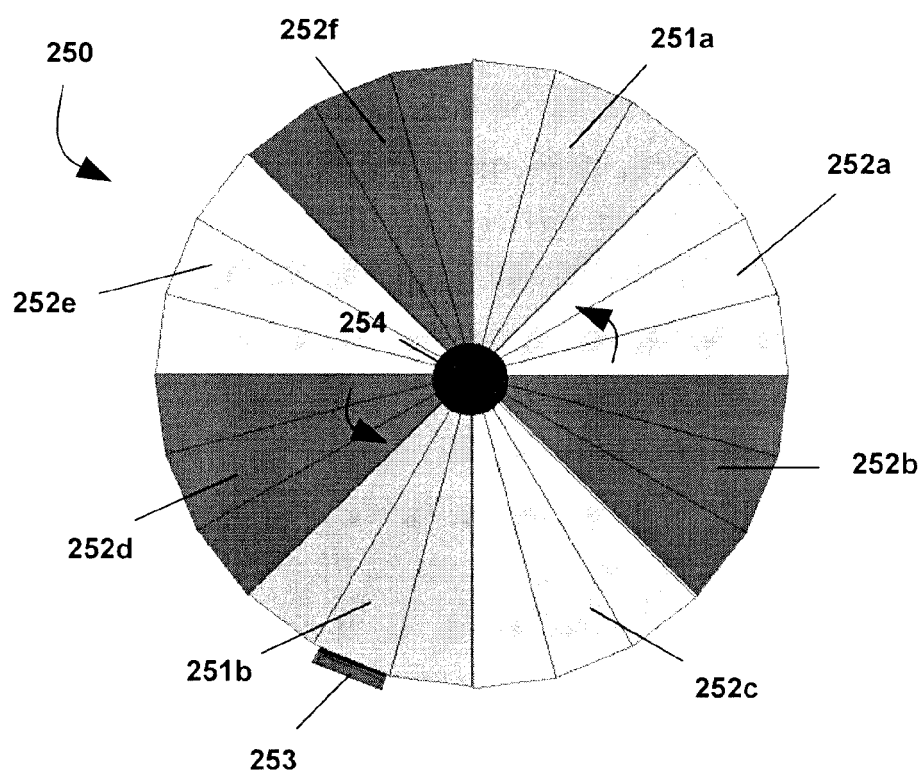


Fig. 10

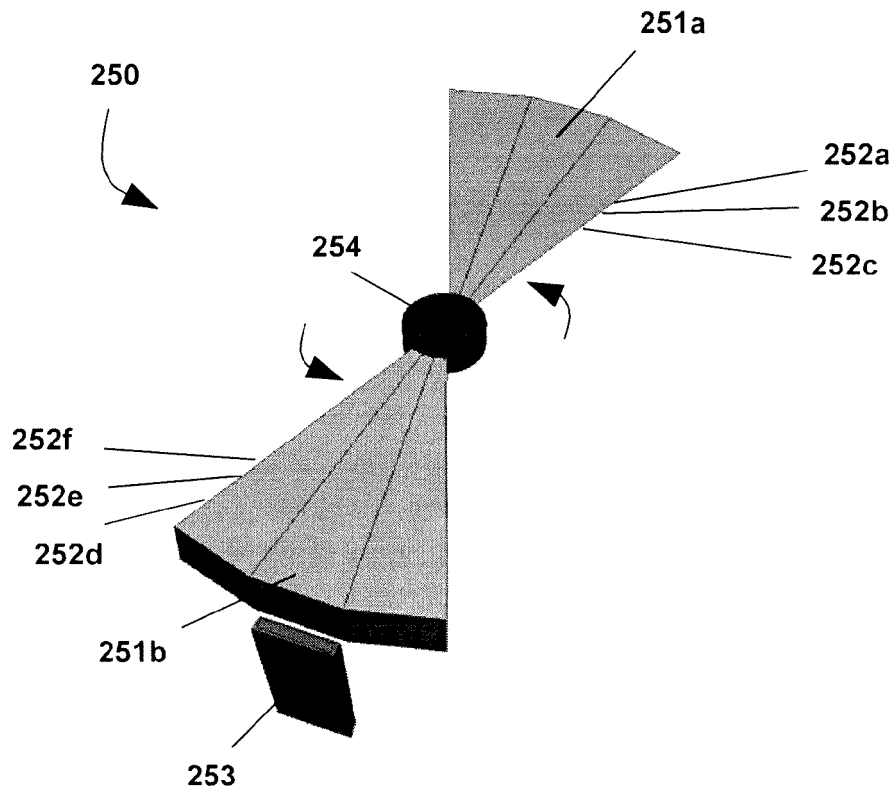


Fig. 11

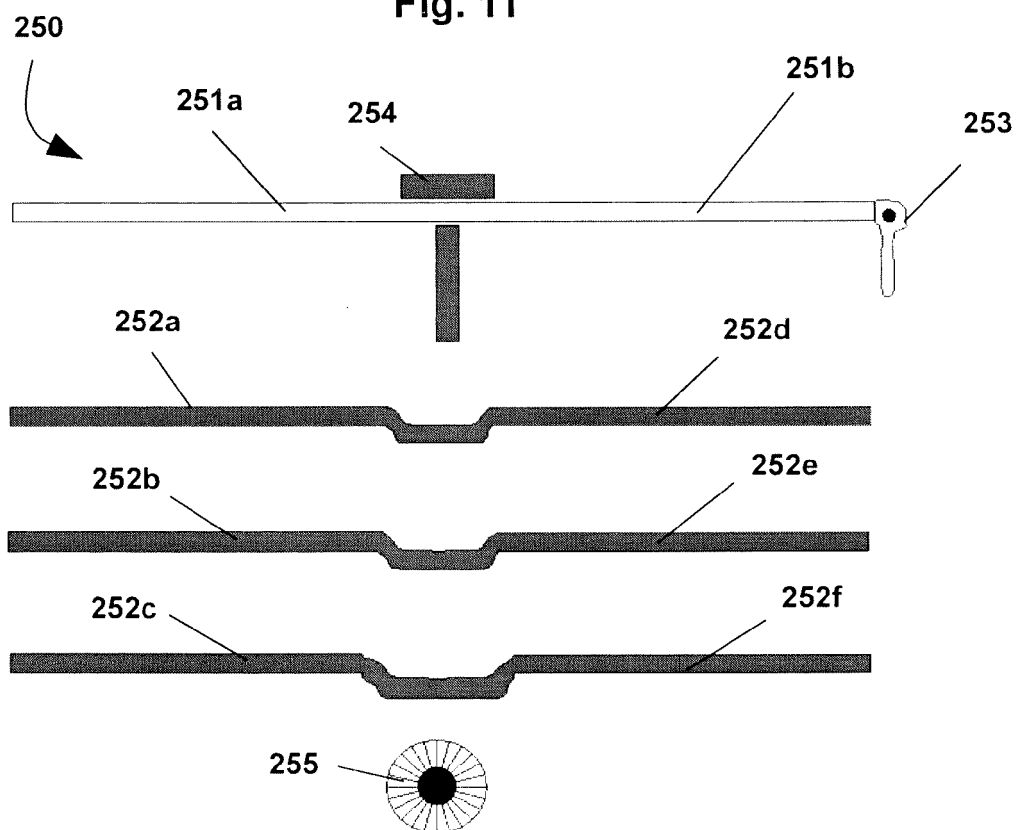


Fig. 12

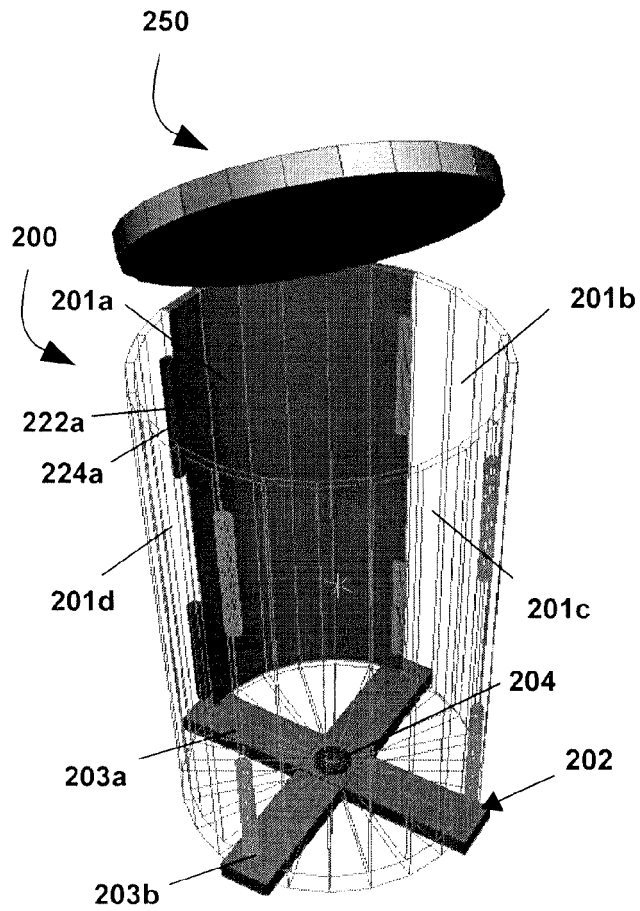


Fig. 13

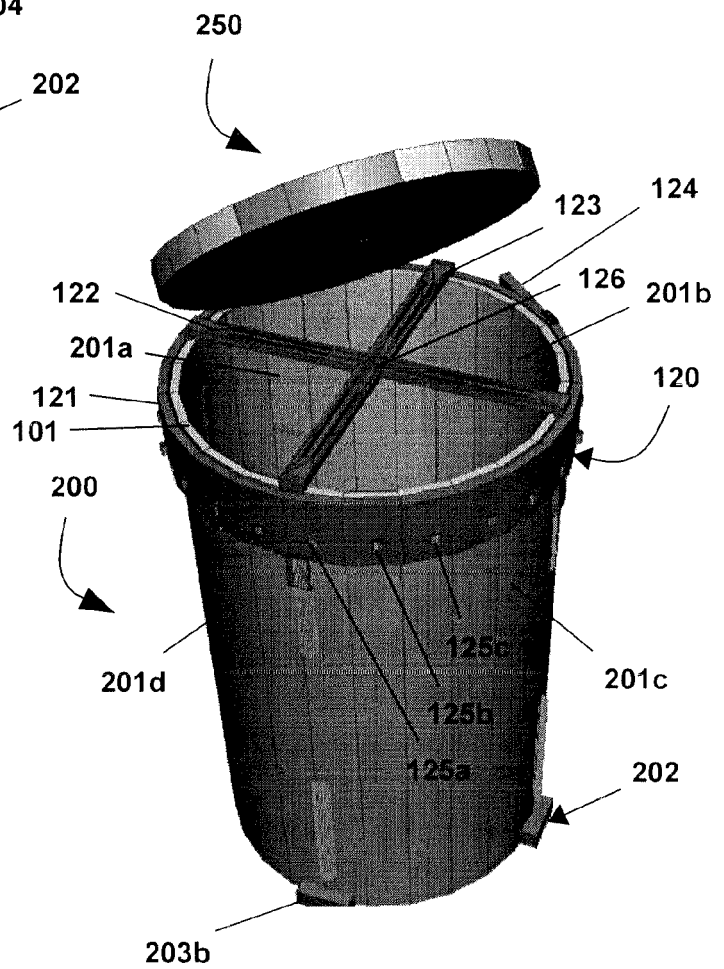


Fig. 14

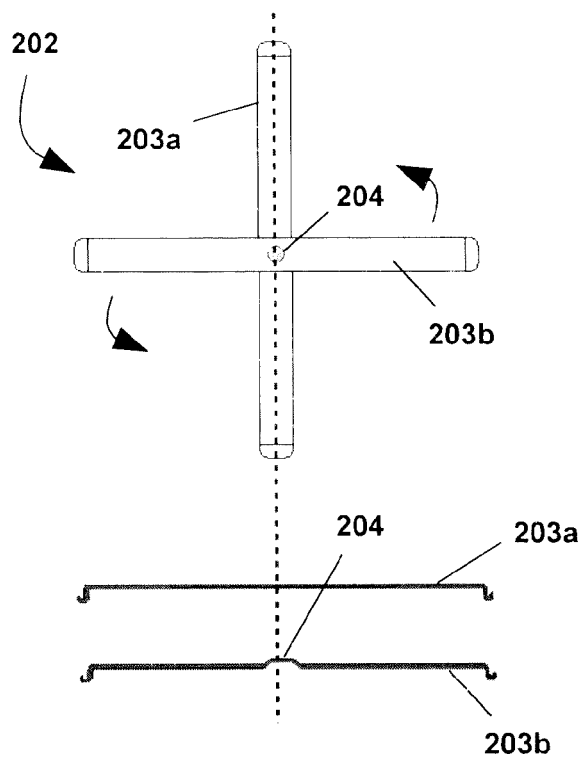


Fig. 15

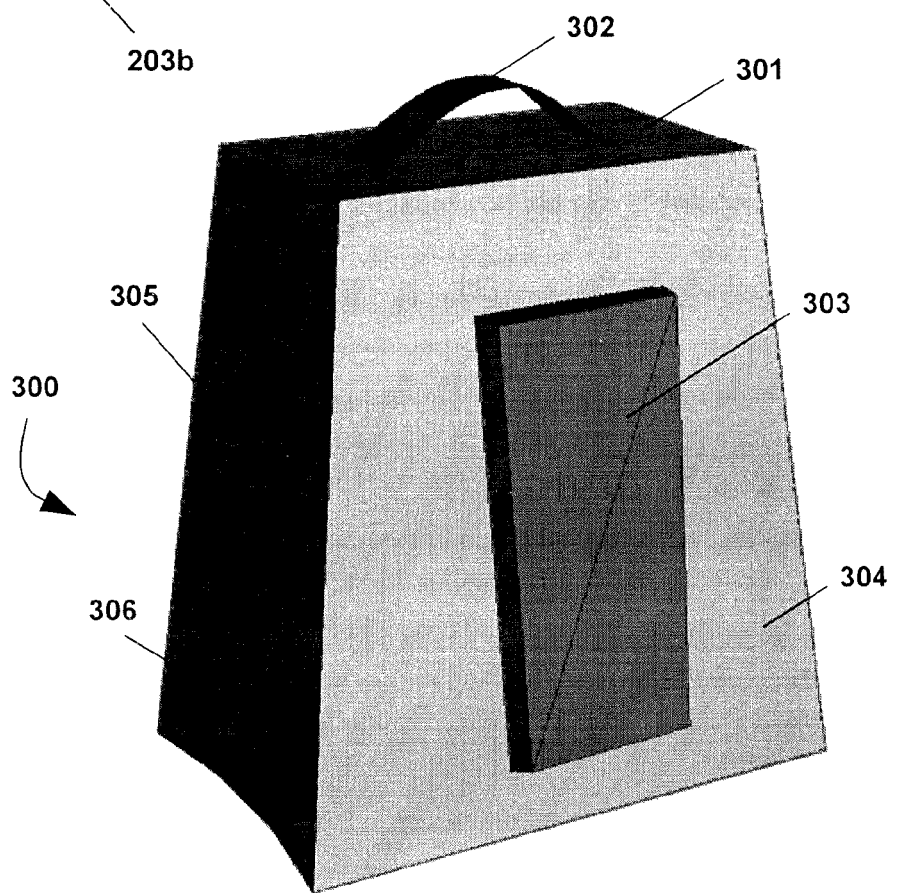


Fig. 16



EUROPEAN SEARCH REPORT

Application Number
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Place of search The Hague		Date of completion of the search 9 July 2019	Examiner Luepke, Erik
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