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(54) **Container for separate waste collection**

(57) A container for separate waste collection comprises an outer frame (1) open at the top with at least one side door (1A) to extract at least one collector (R1 - R4) for separate wastes. A basket (3) rotatable around a vertical axis (X1) is arranged inside the frame and is subdivided into a plurality of sectors (S1 - S4) to hold or contain a respective collector (R1 - R4). A lid (5) which can be applied over said frame (1) is furthermore provided, presenting at least one entrance door (5A; 5B; 5C; 5D) to throw the wastes inside the respective collector (R1 - R4).

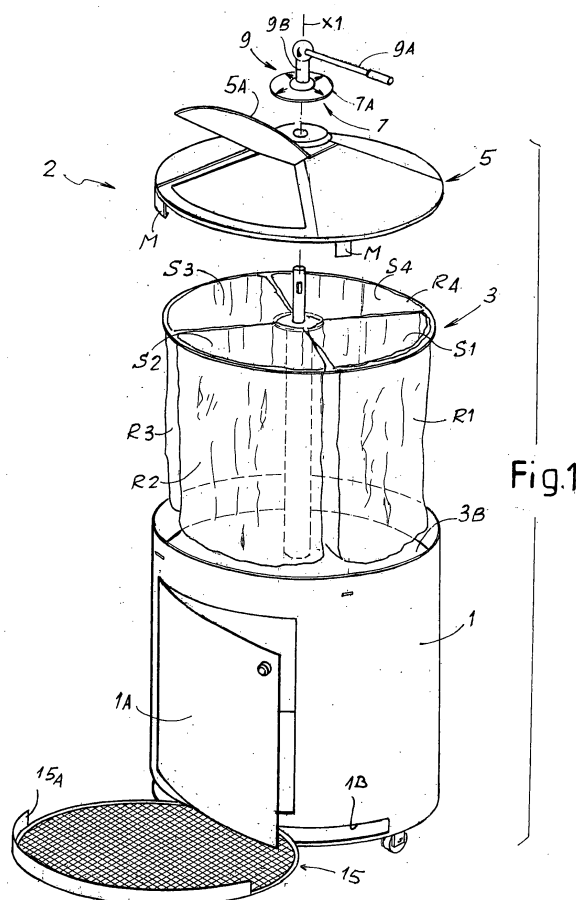


Fig.1

Description

Technical Field

[0001] The present invention relates to a container for separate waste collection.

State of the Art

[0002] The containers for separate waste collection generally provide a plurality of compartments inside which the different types of wastes (for example glass, paper, plastic, wood, organic material and other) can be thrown.

[0003] US5244270 discloses for example a rotating container with a plurality of compartments, which can be inserted inside a piece of furniture. In particular, this embodiment is designed so as to integrate in a corner piece of furniture of a domestic environment, so as to optimize the available space and at the same time to be practical and functional in use.

[0004] US5013102 discloses a rotating container with a plurality of compartments for the separate waste collection for the domestic use. One of the distinctive features of this container is that it provides a particular mechanism for choosing the compartment inside which the separate wastes can be thrown.

[0005] The disadvantages of both these types of containers are due to the fact that they are complex and expensive to manufacture, as well as bulky. A further disadvantage is that these containers must be demounted for maintenance and cleaning, thus increasing the costs for the management thereof. Furthermore, they are not easy to be demounted for transport and handling. A further drawback is that they are not very practical, as it is necessary to provide a rigid collector, inside which a waste sack can be inserted.

[0006] Therefore, despite the development of technology, it is currently a problem and there is the need for a container for wastes to be separated, which is simple and economic and at the same time practical and strong in use.

Objects and summary of the invention

[0007] The present invention relates to a container for separate waste collection, which completely or partially reduces or overcomes one or more of the drawbacks of the known devices.

[0008] These objects and advantages are substantially obtained with a container for separate waste collection according to claim 1.

[0009] More in particular, the the present invention provides a container for the separate waste collection comprising an outer frame open at the top with at least one side door to extract at least one collector of separate wastes; a basket rotating around a vertical axis, arranged inside the frame and subdivided into a plurality of sectors

to hold or contain a respective collector; a lid which can be applied over the frame and which has at least one entrance door to throw the waste inside the respective collector.

[0010] The frame is preferably of substantially cylindrical shape. It may be open also at the bottom, or it may be closed at the bottom. According to some particularly advantageous embodiments of the present invention, the frame is closed at the bottom by a wall which can be moved and extracted, preferably through a side movement, i.e. a movement substantially orthogonal to the axis of the frame. In this way the bottom wall can be extracted and cleaned in an easy way. In other embodiments the bottom wall can be fixed, and above it an extractable filter can be arranged, which collects any debris.

[0011] Advantageously, according to some embodiments, the basket has a substantially cylindrical shape and the sectors are cylindrical wedges suitable to receive the respective collector.

[0012] According to some advantageous embodiments of the present invention, the lid can be integral and rotates together with the basket, or the lid can be fixed on the frame. In this latter case, a signaling system can be provided for signaling the position of each collector inside the frame, so as to allow the user to identify the collector suitable to a type of waste, or so as to position the desired collector near the side door, in order to extract and replace it.

[0013] In some embodiments, the door of the lid can be opened manually or through a pedal mechanism, and it can be an individual door so as to open only one sector at a time. In other embodiments it is possible to provide as many doors as the number of sectors of the basket, or a number of doors greater than two but lower than the number of sectors of the basket. In any case, even if more doors are provided, these can open individually, and each time only in correspondence of the collector selected by the user.

[0014] The pedal mechanism is preferably provided when the lid is fixed on the frame, whilst the manual opening can be preferable in the case in which the lid is integral with the basket.

[0015] Another advantageous embodiment provides manual rotating means for the basket, connected directly on the axis of rotation thereof, so as to produce a mechanism simple to be constructed and used.

[0016] The collector that can be arranged in the sectors may be a sack or also a rigid container, according to the specific production or use requirements.

[0017] Further advantageous embodiments of the present invention provide at least one of the following: a bottom base for resting the collectors, so as to prevent them from falling down during the rotation of the basket (this base is in particular useful when the collectors are sacks); a measurement system for controlling the weight of each collector; and a signaling system for signaling when one of the collectors achieves a maximum weight, which can be preset; a filter or an extractable wall on the

bottom of the frame, in order to facilitate cleaning of the container without demounting the container. When a rest base is provided, it can be advantageously produced in the shape of a grille, with wide apertures and small rest surface, so that any debris which can fall from the collectors does not accumulate on the base, but falls down on the extractable wall or filter below. If this wall or filter is not provided, the rest base is preferably produced as a solid wall, or in the shape of a filter, so as to collect the debris and to be cleaned occasionally, by extracting the basket from the frame. In this case it would be preferable that the frame is completely opened not only at the top, but also at the bottom, so that cleaning of a bottom wall, which could be difficult, is not required.

[0018] An advantage of some embodiments of the container according to the present invention is that it is particularly easy and economic to be manufactured and used. In some embodiments the present invention offers the advantage that the container allows to load a collector by maintaining the other collectors substantially closed in a simple and efficient manner, preventing escaping of bad smells.

[0019] An advantage of a particular embodiment is that cleaning of the inside of the container is facilitated without the need for demounting it, especially when an extractable filter on the bottom is provided.

[0020] The container according to the present invention is, in conclusion, compact and resistant, it can be easily transported and it is particularly suitable to be used both in domestic environment and in outer urban environments (such as for example gardens, parks or streets), as well as in industrial environments (such as for example factories or working sites).

[0021] Further advantageous features and embodiments of the container according to the present invention are set forth in the attached dependant claims and will be further described hereunder with reference to a non-limiting embodiment.

Brief description of the drawings

[0022] The present invention can be better understood and its numerous objects and advantages shall be more apparent to those skilled in the art with reference to the accompanying schematic drawing, which shows a non-limiting practical embodiment of the invention. In the drawing, the individual figure shows a container for the separate waste collection according to an embodiment of the present invention.

Detailed description of an embodiment of the invention

[0023] In the drawing, a container for the separate waste collection is indicated as a whole with number 2. It comprises a substantially cylindrical outer frame 1. In some embodiments the frame 1 is open at the top and it can be provided with a side door 1A to extract radially, i.e. laterally, at least one collector of separate wastes.

Inside the frame 1 a basket 3 is arranged, rotatable around a vertical axis X1 and subdivided into a plurality of sector S1, S2, S3 and S4, each of which is substantially shaped as a cylindrical wedge to hold or contain a collector R1, R2, R3 and R4. Each collector R1 - R4 can be a sack or a rigid collector. In the example of the drawing sacks are represented made for example of plastic.

[0024] If the collector R1 - R4 is a sack, this latter can be fixed to the edge of a sector S1 - S4 through a traditional anchoring system, such as for example a small secondary frame, which blocks the edge of the aperture of the sack on the edge of the sector.

[0025] A lid 5 is arranged above the frame 1, preferably provided with a door 5A with a shape corresponding to the shape of a sector S1 - S4, to throw the wastes in the collector R1, R2, R3 or R4.

[0026] In the embodiment shown in the figure, the lid 5 is coupled to the frame 1 through terminals M, and the door 5A comprises a hinge and a handle - not shown in the figure for the sake of simplicity - for manual opening. In other embodiments, not shown, the lid 5 can be mounted integral with the basket 3. In some embodiments, the upper door 5A can be opened by a pedal mechanism, such as for example a lever mechanical system of the type analogous to that used in the traditional sacks for waste collection, not shown in the figure.

[0027] In other embodiments, the lid 5 can be fitted with a door in correspondence of each sector S1 - S4 or in correspondence of some of said sectors.

[0028] In an advantageous embodiment of the present invention, manual rotation means 9 are provided for the basket 3, which can be made in the form of a hand wheel or a handle 9A fixed to an arm 9B, which enters in the centre of the lid 5 in order to connect to the axis X1 of the basket 3. It is clear that this rotation means 9 can be provided in the form of a different mechanism, according to particular requirements of construction or use.

[0029] In this way a user can grip the handle 9A and rotate the basket 23 when he/she has to extract one of the collectors R1 - R4 through the aperture closed by the side door 1A. If the lid 5 has a plurality of upper doors 5A corresponding to the various collector R1 - R4, the wastes can be thrown in the respective collector R1 - R4 without rotating the basket 3. Alternatively, if an individual door 5A is provided or if a number of doors smaller than the number of collectors R1 - R4 is provided, the basket 3 can be rotated so as to bring the selected collector in correspondence of the door.

[0030] In some embodiments a signaling system 7 can be provided for indicating the position of each collector R1 - R4 inside the frame 1. This system can comprise a signaling element 7A integral with the basket 3 for signaling the position of each collector R1 - R4 inside the frame 1. This signaling element 7A can have different shapes and it can be arranged in different manners on the container 2 according to particular requirements of construction or use, for example it can be a disk integral to the arm 9B, resting to the centre of the lid 5 and on

which the indication are printed for each collector R1 - R4.

[0031] The signaling system 7 can perform different functions based upon the provided type of container 2. For example, in the case shown in the figure, wherein the lid 5 is fixed on the frame 1 and has an upper door 5A, the signaling system 7 allows the user to throw the wastes in the desired collector R1 - R4 through the aperture closed by the door 5A and, furthermore, to position the desired collector R1 - R4 in front of the side door 1A, so as to extract it from the basket 3.

[0032] In some embodiments, the basket 3 further comprises a lower resting base 3B for the collectors R1 - R4, which can be sacks or rigid containers, in such a manner as to facilitate the rotation thereof and to support the weight thereof.

[0033] It is also possible to provide furthermore a control system for controlling the weight of each collector R1 - R4, and a signaling system for signaling when one of the collector R1 - R4 achieves a maximum weight which can be preset.

[0034] In an advantageous embodiments, the control system and the signaling system can be mechanical. An arrangement of this type can comprise for example a lever on the edge of each sector S1 - S4 with a preloaded spring so that one end of the lever is lowered when the sack has achieved the set weight, whilst the other end is raised, pushing an indicator outside from the lid 5. It should be understood that such a mechanical system is described merely by way of example, as it can vary according to particular implementation requirements. In other embodiments an electronic system can be provided, for example with a load cell and an indicator, such as for example a LED indicator or other.

[0035] In the figure an extractable filter 15 is indicated, formed by a mesh grille on the bottom of the frame 1, i.e. near the lower end thereof. The filter 15 is used to facilitate cleaning of the container without demounting the container. In some embodiments an extractable solid wall can be provided instead of a filter. the filter or the wall are preferably provided with an extraction movement in lateral direction, i.e. nearly orthogonal to the axis X1 of the container, so that it can be extracted when the container is in use and without removing the basket and/or the collectors contained inside it. At this end the frame can have an arched window 1B near its bottom, i.e. near its lower end. The window 1B can be closed by an edge 15A of the wall or extractable filter 15.

[0036] If the basket 3 is provided with a base 3B, as shown in the drawing, this base can be constituted for example by resting elements which maintain free a wide section of passage, so that any debris can accumulate on the extractable wall or on the extractable filter 15 below. In other embodiments the base 3B can be solid, i.e. closed, and it can form an extractable wall, which in this case is extracted together with the whole basket, for a periodic cleaning of the container 2. In the figure the base 3B is represented solid and it is used in combination with an extractable filter or extractable wall 15 below. In this

case the extractable filter or wall 15 collects only debris which can fall despite of the presence of the lower base 3B of the basket 3. In some embodiments the lower extractable wall is made solid instead of being in filter shape and provided with an upwardly projecting edge so as to form a tray for collecting any liquid coming out from the collectors R1 - R4 above.

[0037] It should be noted that the basket 3 can be anchored only to the rotation means 9 so as to rotate inside the frame 1. In other embodiments the basket 3 can comprise wheels or one or more shoes sliding along a guide inside the frame 1 so as to support the weight of the basket and of the collectors with their content.

[0038] The frame 1 can lay on the floor or it can be fitted, as in the illustrated example, with wheels, pivoting as the case may be, to facilitate the movements thereof on the floor.

[0039] It is understood that the drawing purely shows a possible non-limiting embodiment of the invention, which may vary in forms and arrangements without departing from the scope of the concept on which the invention is based. Any reference numbers in the appended claims are provided for the sole purpose of facilitating the reading thereof in the light of the description hereinbefore and the accompanying drawings and do not in any way limit the scope of protection of the present invention.

Claims

1. A container for separate waste collection, **characterized in that** it comprises:

- an outer frame (1) open at least at the top and provided with at least a side door (1A) to extract a collector (R1 - R4) of separate waste housed inside said container;
- a basket (3) rotating around a rotation axis (X1), arranged inside the frame (1) and subdivided into a plurality of sectors (S1 - S4) to hold or contain respective collectors (R1 - R4) in said sectors;
- a lid (5) applied over said frame (1) and presenting at least one upper door (5A) to throw the wastes inside the respective collector (R1 - R4).

2. The container as claimed in claim 1, **characterized in that** said basket (3) has a substantially cylindrical shape and **in that** said sectors (S1, S2, S3, S4) are cylindrical wedges.

3. The container as claimed in claim 1 or 2, **characterized in that** said lid (5) rotates together with said basket (3).

4. The container as claimed in claim 1 or 2, **characterized in that** said lid (5) is fixed with respect to said

frame (1).

5. The container as claimed in one or more of the previous claims, **characterized in that** it comprises an extractable wall (15) in the lower area of said frame (1). 5
6. The container as claimed in claim 5, **characterized in that** said extractable wall (15) is in the shape of a filter. 10
7. The container as claimed in one or more of the previous claims, **characterized in that** said frame is open at the bottom. 15
8. The container as claimed in one or more of the previous claims, **characterized in that** it has a signaling system (7) suitable to indicate the position of each of said collectors (R1 - R4) inside said frame (1). 20
9. The container as claimed in one or more of the previous claims, **characterized in that** it comprises manual rotation means (9) for said basket (3).
10. The container as claimed in one or more of the previous claims, **characterized in that** said collectors (R1 - R4) are sacks or rigid containers. 25
11. The container as claimed in one or more of the previous claims, **characterized in that** said basket (3) comprises a lower rest base (3B) for said collectors (R1 - R4). 30
12. The container as claimed in one or more of the previous claims, **characterized in that** it comprises at least one detection system, suitable to detect the weight of each of said collectors (R1 - R4), and at least one signaling system, suitable to signal when one of said collectors (R1 - R4) achieves a maximum weight, which can be preset. 35 40
13. The container as claimed in one or more of the previous claims, **characterized in that** said lid has a plurality of upper doors, in a number corresponding to the number of said sectors. 45

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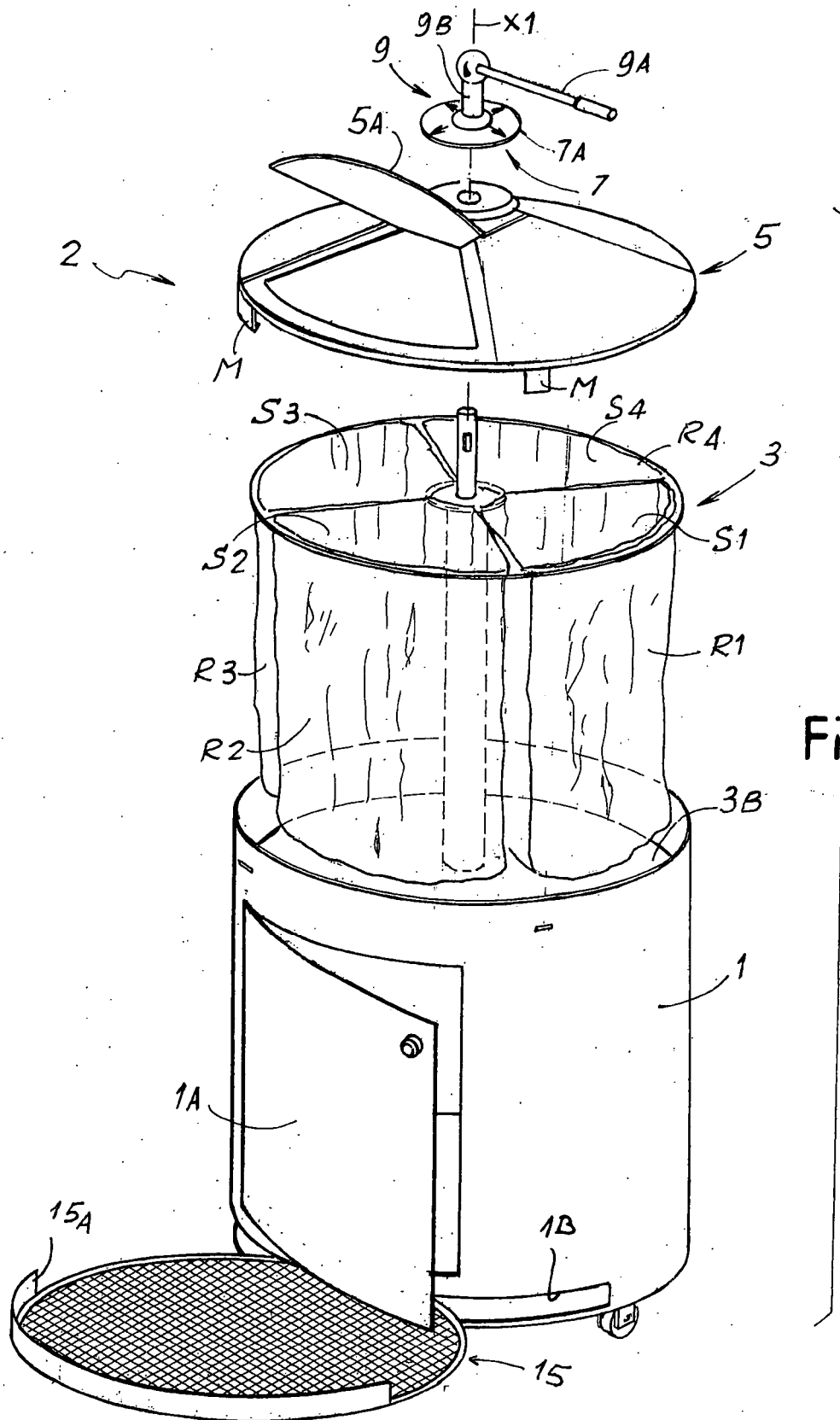


Fig.1



EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5417

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* column 2, line 17 - column 3, line 51 * * figures 1-6 *	3,5-7, 12-13	
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			B65F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		15 January 2010	Smolders, Rob
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 42 5417

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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15-01-2010

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