SYSTEM FOR SEPARATE DOMESTIC WASTE COLLECTION

(57) Abstract: system (1) for separate domestic waste collection, comprising one or more independent units (2, 3, 4, 5) each unit (2,3,4,5) suitable for shredding or compacting one typology of waste, whereby all units (2,3,4,5) are connected through tubes (6) to a corresponding compartment inside a single container.
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SYSTEM FOR SEPARATE DOMESTIC WASTE COLLECTION

DESCRIPTION

The invention relates to a system for separate domestic waste collection and in particular the purpose of the system is to reduce the volume of waste according to its type and its accumulation in a single container with several compartments.

The system envisages the employment of two or more units which can be overlain, each one designed to reduce the volume of a particular waste.

As we well know, modern waste collection and disposal policies envisage that waste is treated according to its typology and, for this purpose, it must be separated. This operation may be performed inside specially equipped waste collection centres or in the collection phase, envisaging a series of special containers and, in this case, there will be one for the collection of paper, one for glass, one for plastic and so on.

This type of separate waste collection assumes that the user is precise as he must put the waste into the right container. Unfortunately this does not always happen, indeed many local authorities are experimenting a door to door separate waste collection.

Door to door collection has a series of drawbacks, including the difficulty of keeping the waste inside the domestic environment until the day envisaged for its collection by the company contracted by the town council.

Another drawback is determined by the high management costs of this kind of collection, as it requires significant human resources in order to be actuated.

The purpose of this invention is to provide a system to be used in a domestic environment which envisages waste storage into a single container located outside the building until the waste itself is picked up by the company contracted by the town council.

A further purpose of the present invention is that of providing a system suitable for providing already treated waste ready for reducing its volume.

These and further purposes are achieved by the system for separate domestic waste collection described in a preferred embodiment which does not limit further developments of the present invention, with reference to the accompanying drawings, wherein:

Fig. 1 is a schematic view of a system according to the present invention including four units each of which particularly suitable for reducing one typology of waste;

Fig. 2 is a side sectional view of the waste collection container;

Fig. 3 is a plan view of the container of Figure 2;

Fig. 4 is a side view of a building in which the separate waste collection system is installed.
With reference to the annexed drawings, a system 1 for separate domestic waste collection is described below. The system 1 envisages that inside each house and/or in any case in environments accessible exclusively from each individual apartment, there are a series of units 2, 3, 4 and 5 each one suitable for reducing the volume of the waste conferred at to transfer it to a container 7 located outside the building and internally divided into several compartments each one capable of containing a different typology of waste.

For instance the system may envisage a unit 2 for crushing the glass consisting of a container with a hatch for inserting the waste, a mobile wall for moving inside the container by the rotation of two threaded bars whose rotation is transmitted by a motor located inside the container itself.

The supporting layer formed, in a preferred embodiment, by a series of parallel metal rods allows the glass to fall onto the chute below only after it has been crushed by the wall, the chute itself has a surface with small perforations which allow the percolation of any liquids which may be present in the glass containers and which are then conveyed by a funnel below the chute into a drain hole.

After crushing, the glass is expelled from the hole that is connected through a tube 6 to the container 7.

Another unit, which, for example, can be located inside the system, is that of the paper shredder 3 which includes a container, of the same size as unit 2, with a long narrow slit on one of its faces in which the paper can be inserted. The paper is shredded as it goes through the rollers and is expelled from a hole.

As mentioned, there can be four or more units and they are of the same shape and size, they have four feet on the top, each one positioned in the corner of the upper face and corresponding to four blind holes on the lower face. The feet fit into the holes of the unit below thus allowing units 2, 3, 4 and 5 to be stacked in a stable manner.

Each of the units 2, 3, 4 and 5 is also connected by means of tubes 6 to the container 7, the latter is divided into several compartments and has a suction unit 9 which is activated each time a motor M of each unit 2, 3, 4 and 5 is activated.

At the same time as activating the suction unit 9, each of the units also has a waste thrust system inside the tubes 6, said system may be pneumatic or hydraulic if the separated waste is to be washed at the same time.

Before being sent to the container 7, the waste may also be treated inside each unit 2, 3, 4 and 5 with substances or techniques for its sterilization.

The container 7 can also be divided into two parts: the upper part 72 and the lower part 71, the bottom of the latter has hatches 73, which can be opened separately so that the waste can be emptied by type, for this purpose the upper part of the container 7 has a hook 10.
Furthermore the container 7 may have sensors indicating the almost complete filling of the compartments, and means of communication by cable, air, satellite and web to inform the waste collection company that the container 7 is almost full.

With reference to Figure 4, in which a system for separate domestic waste collection on three layers is illustrated, the container 7 is positioned outside the building so that the waste itself can be collected by the contracted company without disturbing the flat owners.
CLAIMS

1. **System for separate domestic waste collection** comprising one or more units independent from one another (2, 3, 4 and 5), each unit (2, 3, 4 and 5) suitable for shredding and compacting one typology of waste, characterised in that all the units (2, 3, 4 and 5) are connected through tubes (6) to a single container (7), said container (7) including the same number of compartments as the independent units (2, 3, 4 and 5).

2. System according to claim one characterised in that the container (7) has one or more suction units (9) whose power is suitable for sucking in the waste coming from the units (2, 3, 4 and 5). Each one of these units (2, 3, 4, and 5), in turn, is equipped with its own compression system, either pneumatic or hydraulic, in order to help pushing the waste into the tubes (6) and then into the container (7).

3. System according to any one of the preceding claims characterised in that the suction unit (9) and the compression systems present in each of the units (2, 3, 4 and 5) are activated automatically and simultaneously each time a waste is introduced into the units (2, 3, 4 and 5).

4. System according to any one of the preceding claims characterised in that the units (2, 3, 4 and 5) are installed inside each apartment or, outside, on balconies or verandas of a building and the container (7) is positioned at the base of the building itself either outside or inside it.

5. System according to one or more of the previous claims characterised in that the units (2, 3, 4 and 5) can be reciprocally assembled and for this purpose they are equipped with means (11 and 12) permitting a safe and stable connection.

6. System according to one or more of the previous claims characterised in that the container (7) is equipped with sensors indicating the almost complete filling of the container's (7) compartments, and means of communication by cable, air, satellite and web to inform the waste collection company that the container (7) is almost full.

7. System according to one or more of the previous claims characterised in that the waste is treated inside each unit (2, 3, 4 and 5) with substances or techniques for its sterilisation before being sent to the container (7).
**INTERNATIONAL SEARCH REPORT**

**INTERNATIONAL APPLICATION No**
PCT/IB2011/00295

**A. CLASSIFICATION OF SUBJECT MATTER**

INV. B65F1/00 B65F1/12 B65F5/00

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)

B65F

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, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<td>US 6 903 142 Bl (C. STAUBER) 7 June 2005 (2005-06-07) col umn 6, line 16 - col umn 8, line 67 figures 1-11</td>
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