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(72) Inventor: **Berti, Daniele**
50143 Firenze (IT)

(74) Representative: **Martini, Lazzaro**
Studio Brevetti Ing. Dr. Lazzaro Martini s.r.l.
Via dei Rustici 5
50122 Firenze (IT)

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(71) Applicant: **Berti, Daniele**
50143 Firenze (IT)

(54) **Waste bin**

(57) Waste bin, comprising at least a container (CE), each of which is destined to receive a relevant collecting bag (SA), characterized in that it is provided with an

opening (CV) associable to means for suction of air between the bag (SA) and the container (CE) for making the bag (SA) adherent to the container (CE).

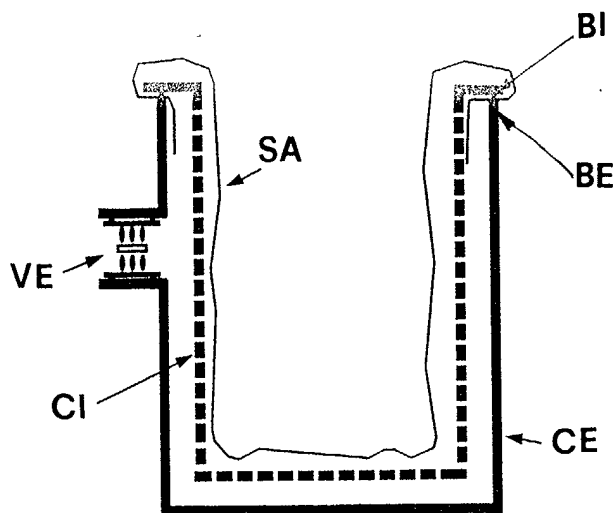


Fig. 1

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Description

[0001] The present invention relates to a waste bin.

[0002] Usually, a waste bin, such as a waste bin for domestic use including a removable bag, comprises a rigid container, a cover, a thin plastic bag and possibly a ring for fixing the bag to the upper part of the container. When a new bag is put within the container, the bag does not adhere to the inner wall of the container, and this causes difficulty in the initial introduction of refuses in the bag.

[0003] The main aim of the present invention is to facilitate and speed up the correct putting of a new bag in a waste bin usually used for domestic use and also for the other uses of similar containers with bags.

[0004] This result has been achieved, according to the invention, by providing an apparatus having the characteristics described in claim 1. Further characteristics being set forth in the dependent claims.

Particularly, the invention contemplates to put an air exhauster acting on the air between the container and the thin plastic bag, preferably with the adhesion of the bag to the perforated walls of a second container placed between the bag and the (outer) container.

[0005] Among the advantages of the invention, there are that it is possible to fill the bag in an optimum way, even when the bag is just been put in the container, that it is possible to use common bags of known type, that the waste bin is easy to be realized and used, that the waste bin can be cleaned easily, that it maintain unchanged its features even after a long use.

[0006] These and other advantages and characteristics of the invention will be best understood by anyone skilled in the art from a reading of the following description in conjunction with the attached drawings given as a practical exemplification of the invention, but not to be considered in a limitative sense, wherein:

- Fig. 1 is a schematic view in longitudinal section of a possible embodiment of the invention;
- Fig. 2 relates to a schematic view in longitudinal section of another possible embodiment of the invention;
- Fig. 3 is a schematic and partial section view according to line III-III of Fig. 2;
- Fig. 4 is a schematic view of a further possible embodiment of the invention.

[0007] In Fig. 1 is represented a schematic embodiment of a waste bin, wherein an external or main container is marked with CE; the container CE is cylindrical rigid and airproof, is closed on the bottom and open on the top; CI is a second inner cylindrical container, open on the top and permeable - almost partially - to the air (in the embodiment of Fig. 1, the second container CI is permeable to the air on its lateral walls and on its bottom); the size of the inner container CI is slightly smaller than the inner size of the outer container CE: in

this way there is a little hollow space between the inner container CI and the outer container CE; VE is a motor fan associated to the outer container CE, in particular the fan VE is seated in a lateral opening CV; the fan VE pulls the air out of the container CE; SA is a thin plastic bag that is inserted in the inner container CI; the edge of the bag SA is turned over the upper edge of the inner container CI, in such a way to results inserted between the upper edge of the inner container CI and the corresponding upper edge of the outer container CE.

[0008] Referring to Fig. 1, a possible procedure for putting the bag SA in the waste bin in the following: the fan VE is started up; then, the thin plastic bag SA is inserted in the inner container CI; the inner container CI is slightly lifted and the edge of the bag SA is turned over around the upper edge BI of the inner container CI; the inner container CI is lowered in such a way that the lower side of the peripheral edge BI of the inner container CI results against the upper edge BE of the outer container CE; by operating the air suction means VE, the bag SA adheres to the inner wall of the inner container CI; finally, the fan VE is stopped by switching off the power supply of the corresponding electric motor.

[0009] In order to facilitate the cleaning of the container CE, the fan VE may be simply removed. The fan VE may be driven by a battery operated low voltage electric motor.

[0010] The electric supply means (not shown) for the motor fan VE may include a normal battery, a rechargeable battery, a transformer etc.

With reference to Figs. 2 and 3, the inner container CI may be omitted and the container CE may be provided with inner grooves in order to facilitate the air suction. The bag may be turned directly over the upper edge of the container CE. The bag may be then fixed to the container CE by means of an elastic or rigid ring (not shown) which makes the upper portion of the bag adherent to the outer wall of the container.

[0011] As shown in Figs. 2 and 3, the inner wall of the container CE is provided with a plurality of grooved SC which are interconnected in correspondence of a common intersecting or connecting central recessed area ZC of the container bottom. The said opening CV is in correspondence of one of said grooves SC and it results connected with the other grooves SC through the aforesaid recessed area ZC. It is thus possible to suck up air from the hollow space between the container CE and the bag SA.

Furthermore, the air suction means may be located remote from the container CE and connected to the latter by means of a suction duct connectable with the opening CV.

For example, alternatively, the opening CV may be connected with a vacuum cleaner or a manual vacuum pump.

[0012] With reference to Fig. 4, a waste bin according to the present invention may comprise a plurality of containers CE, CE'; each of which apt to receive a corre-

sponding collecting bag SA, SA'. The air suction means VE are connected with each container CE, CE' by means of connecting ducts CC. This embodiment of the present invention has the advantage to quickly and correctly positioning the collecting bags also in the case of separate waste collection.

In practice, details in the execution may equally vary as regards shape, size, disposition of elements, kind of material employed within the field of this innovative concept and within the limits offered by the present patent as industrial invention.

Claims

1. Waste bin, comprising at least a container (CE), each of which is destined to receive a relevant collecting bag (SA), **characterized in that** it is provided with an opening (CV) associable to means for suction of air between the bag (SA) and the container (CE) for making the bag (SA) adherent to the container (CE). 5
2. Waste bin according to claim 1, **characterized in that** it is provided with air suction means acting through said opening (CV). 10
3. Waste bin according to claim 1 or 2 **characterized in that** it comprises a second container (CI) which is to be positioned between the said container (CE) and the collecting bag (SA), said second container (CI) being air permeable. 15
4. Waste bin according to one or more the preceding claims, **characterized in that** said air suction means include a motor fan (VE). 20
5. Waste bin according to claim 4 **characterized in that** said motor fan (VE) includes a battery operated low voltage electric motor. 25
6. Waste bin according to claim 1 or 2, **characterized in that** the inner wall of said container (CE) is provided with a plurality of grooves (SC) which are connected with said air suction means and which define an uneven surface to which surface the bag (SA) adheres when the air suction means are operated, the said grooves (SC) further defining corresponding air suction channels. 30
7. Waste bin according to claim 6 **characterized in that** said grooves (SC) are interconnected in correspondence of a common intersecting or connecting area (ZC). 35
8. Waste bin according to claim 1 **characterized in that** said air suction means are connected to the said container (CE) by means of an air duct (CO). 40
9. Waste bin according to claim 8, **characterized in that** said air suction means are housed within a corresponding seat featured by the said container (CE). 45
10. Waste bin according to claim 8, **characterized in that** said air suction means are separated from the said container (CE). 50

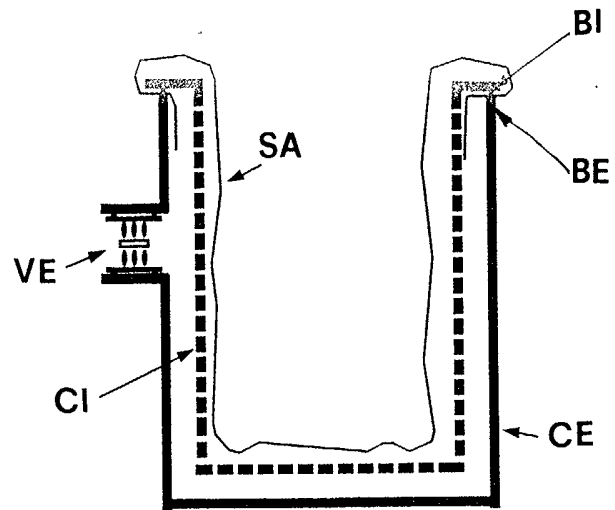


Fig. 1

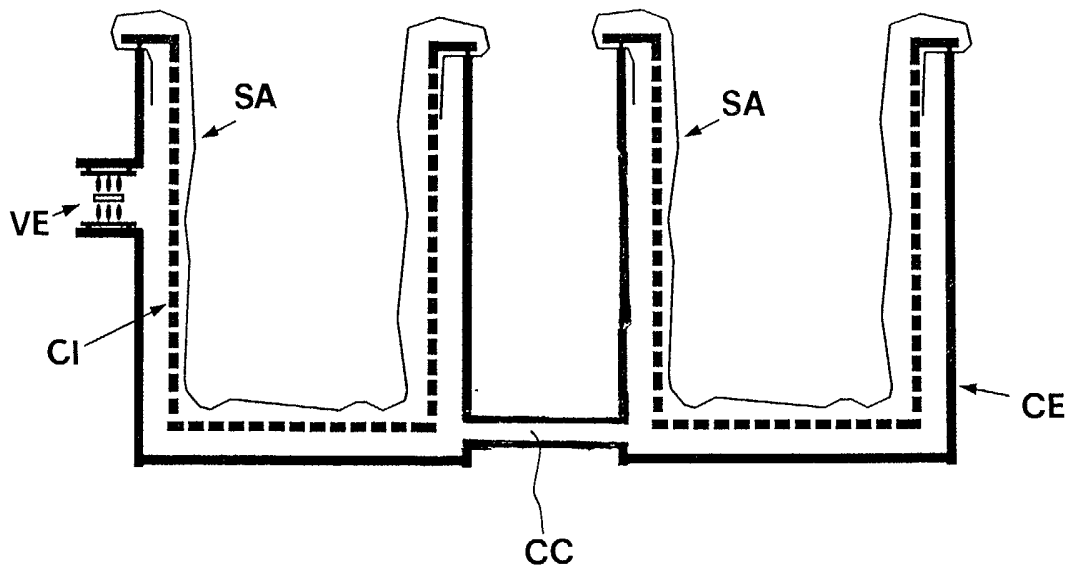


Fig. 4

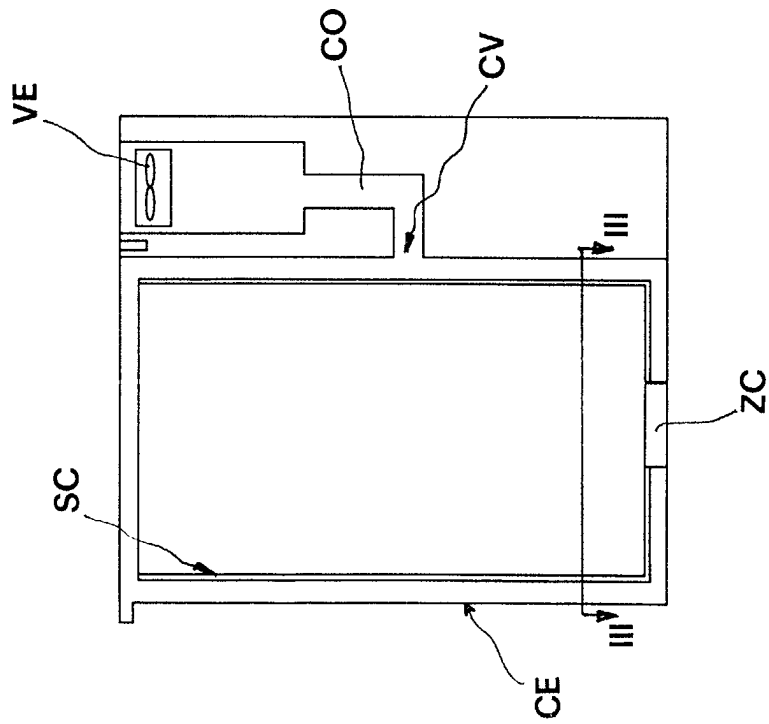


Fig. 2

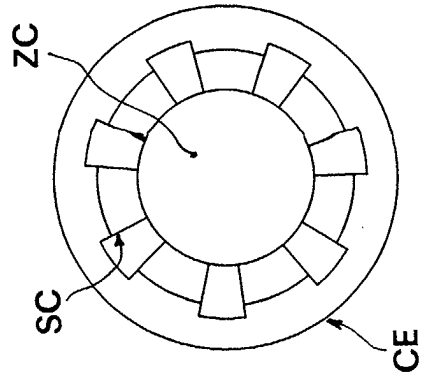


Fig. 3



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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 4 June 2002	Examiner Smolders, R
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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