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(54) **An urban waste dustbin with vertical load opening**

(57) An urban waste dust-bin (8) for the mechanized collection of rubbish without any opening mechanism operable by the user is characterized by a covering member (18) having a vertical load opening (6) with a size equal to the width of the front side of the dustbin (8). Such vertical load opening (6) is protected by rubber

straps (10) that close the opening (6) of the dustbin (8) to safeguard sanitation. The emptying of the rubbish occurs through only one lid (12) provided with a handle (14), the lid (12) is hinged (16) at the upper side of the covering member (18) and opens by gravity upon up-ending the dustbin (8).

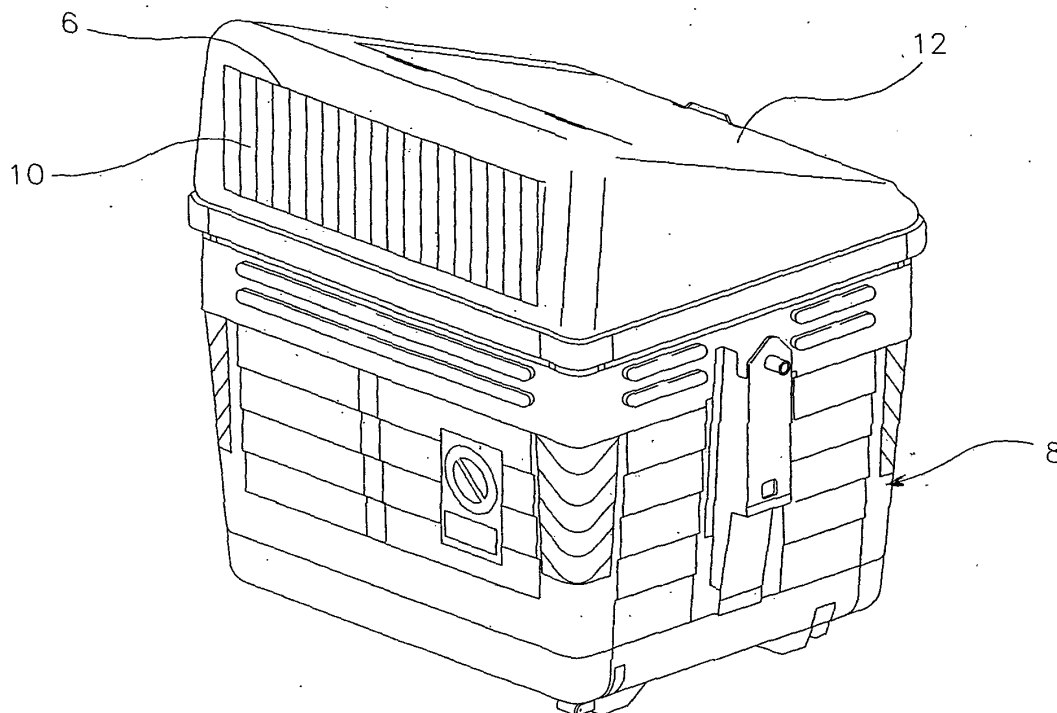


FIG. 2

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Description

[0001] The present finding relates to an urban waste dust-bin arranged for the mechanized collection of rubbish, characterized in that the pedal and any other means for opening the lid controlled by users or the dust-cart is missing.

[0002] As known, the wide-mouthed containers for urban waste, so-called "dust-bins", arranged for the mechanized collection of rubbish presently available on the market are standardized as for design, construction, volume, size, materials (high-density polyethylene, polyester reinforced with glass fibres or PRFV, zinc plated steel, aluminium alloy), type of lid (flat or dome lid swinging or not), movable-on-wheels or stationary bins, etc. In any case, independently of their volume and material the bins consist of two main members/groups, i.e. a tank and a (flat or swinging) lid.

Further devices (generally a pedal) for opening the lid by the user and those operated by the dust-cart upon emptying the bin have also to be added.

[0003] The invention aims at providing a new type of dust-bin to be manufactured ex-novo as well as a kit to modify the containers presently in use by proposing a novel solution allowing:

1. the likelihood of a damage of the container and its components to be reduced by simplifying the construction;
2. the urban decorum to be improved by keeping the original state of the container unchanged;
3. the design to be improved;
4. the noise to be reduced especially upon emptying;
5. the access for the user to be improved;
6. the safety level to be increased (by avoiding moving parts);
7. the construction withstand to be increased by extending the mean life of the bin.

This has been accomplished by removing or reducing all moving parts of the urban waste containers presently on the market, and namely:

- the pedal and all components and mechanisms thereof no longer necessary;
- the device operable by the dust-cart to open the swinging lid upon emptying the bin;
- the lid of the user's side which is replaced by a vertical load opening with a size equal to the width of the front side of the container and such a height as to allow it to satisfy the maximum size of the UNI regulations in force, such vertical load opening being protected by rubber straps that close the opening of the rubbish container to safeguard sanitation.

The emptying of rubbish occurs through only one weathered lid (provided with handle) which is hinged at the

upper side and opens by gravity upon capsizing the container.

Advantageously, the finding disclosed can be applied to all types of rubbish containers independent of their volume (the solution is preferably applicable from 600 litres to 3200 litres), the building material, and the mobility of the container.

[0004] The description of the invention will more readily be understood with reference to the accompanying drawings that show by way of example two preferred embodiments thereof. In particular:

Fig. 1 shows a dust-bin of conventional type;

Fig. 2 shows a perspective view of a dust-bin according to the finding with only one load opening at the access side;

Fig. 3 shows a view of the same dust-bin from the opposite side;

Fig. 4 shows an assembling kit to be applied to the tank body of an already existing rubbish container to transform it into a dust-bin according to the present finding.

[0005] With reference to the figures, the dust-bin of Fig. 2 has an asymmetric shape as it looks essentially like a right parallelepiped having at the user's side a vertical load opening 6 with a size equal to the width of the front side of container 8 and such a height as to allow the container to satisfy the maximum size of the UNI regulations in force.

As can be seen in the figure, the load opening 6 is protected by rubber straps 10 that close the waste container to safeguard sanitation. The emptying of the waste occurs through the inclined lid 12 provided with handle 14 and hinged at the upper side to the body of container 8 which opens by gravity. Lid 12 can be opened at the opposite side of the load opening 6, i.e. the road side (discharge side).

By the proposed solution:

- problems connected to the opening of the lid are avoided as the lid is opened only by gravity. Such problems occurs in the present containers whether the pedal is present or not and increase in case of failure of the pedal;
- the problem of the stench produced by the more or less swift lid closure movement (depending on the lid shock-absorbers) and evil smelling for the user upon introducing the waste into the container is solved;
- the following dangerous situations for the user due to the pedal are avoided:

- i) the poor balance of the user upon pressing the pedal by a proper force;

ii) raising of one leg more than necessary in case whether the pavement is far away of the dust-bin or its pedal is adjusted at such a height that needs the presence of a nearby pavement, with the risk of falling back, a dangerous situation especially if the load opening is directed to road side.

iii) loss of balance when the user rests with one foot on the pavement and presses with the other foot the pedal of a dust-bin far away from the pavement, thus running the risk of falling to the load opening and hitting the lid which is being lowered because of the missing pressing force of the user who is losing his/her balance;

- the ergonomics of throwing waste into the dust-bin is improved as the user takes no further interest in the pedal because he/she has not to press it anymore and can concentrate on the throwing action using both hands, for example;
- because of its easier use, the dust-bin is less "exclusive" with regard to weaker users such as old people, children, disabled, etc.;
- users have less contacts with the dust-bins as it is the case if the pedal is broken;
- the cost of the dust-bin is reduced as the lid opening means are missing;
- the maintenance of the dust-bin is simplified as the moving parts are less.

Fig. 4 shows an assembling kit to modify an already existing dust-bin. It essentially consists of a covering member with a prismatic shape generally indicated at 18, with a vertical opening 8 directed to the user's side, two side walls 20 sloping to the road side, and a weathered lid 12 hinged at 16 which opens to the road side.

The assembling is easy: after removal of the existing lid and the opening device, covering member 18 is applied to tank 4 to transform the existing dust-bin into a dust-bin according to the finding.

in that the hinge of the pivoting lid is at a height which is not lower than the upper edge of the vertical load opening to ensure the emptying of the bin and to avoid stagnancy of rubbish.

3. An assembling kit for dust-bins, **characterized in that** there is provided a covering member with a prismatic shape having a vertical load opening that opens to the user's side, two side walls sloping to the road side, and a weathered lid which is hinged and can be opened to the road side, said covering member being applied to the tank of the dust-bin once removed the existing lid and any lid opening device.

Claims

1. An urban waste dust-bin for the mechanized collection of rubbish, **characterized in that** the lid of the user's side is replaced by a vertical load opening with a size equal to the width of the front side of the bin and such a height as to allow it to satisfy the maximum size of the UNI regulations in force, such vertical load opening being protected by rubber straps that close the opening of the rubbish container to safeguard sanitation, the emptying of rubbish occurring through only one weathered lid provided with handle which is hinged at the upper side and opens by gravity upon capsizing the container.
2. The dust-bin according to claim 1, **characterized**

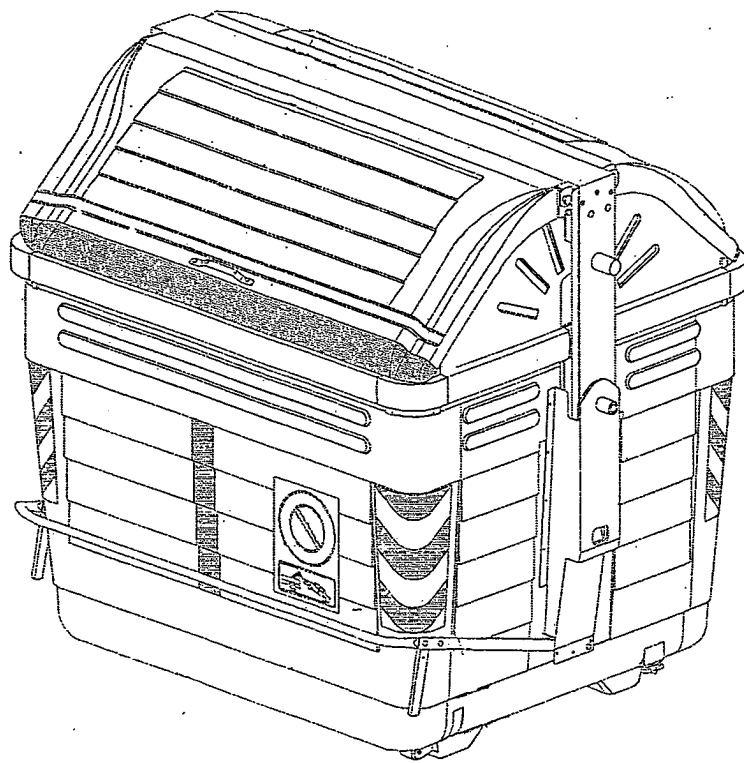


FIG. 1

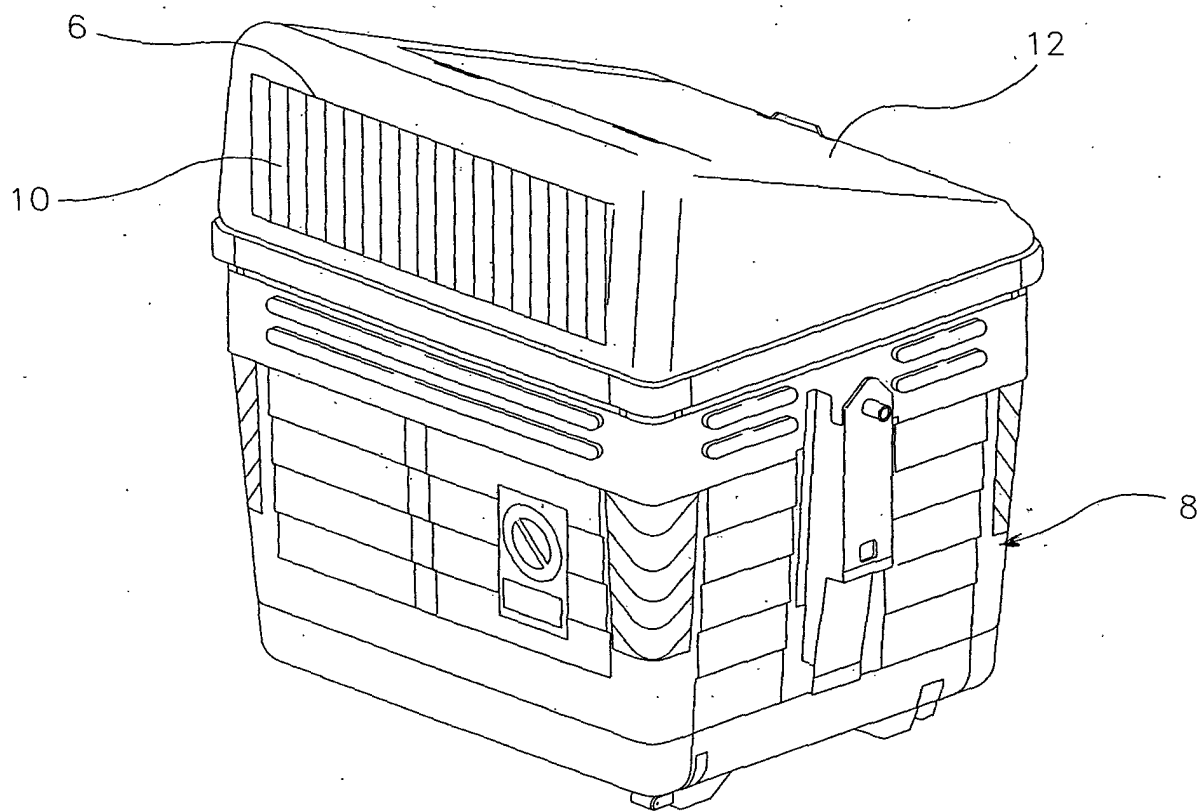


FIG. 2

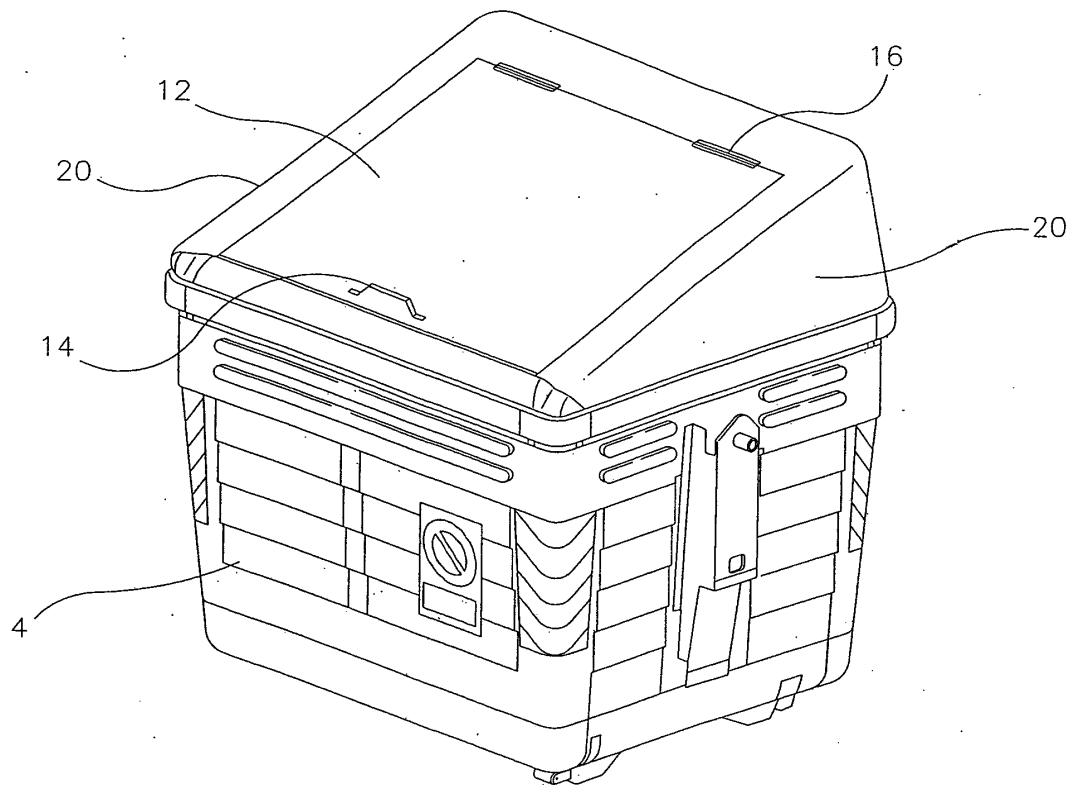


FIG. 3

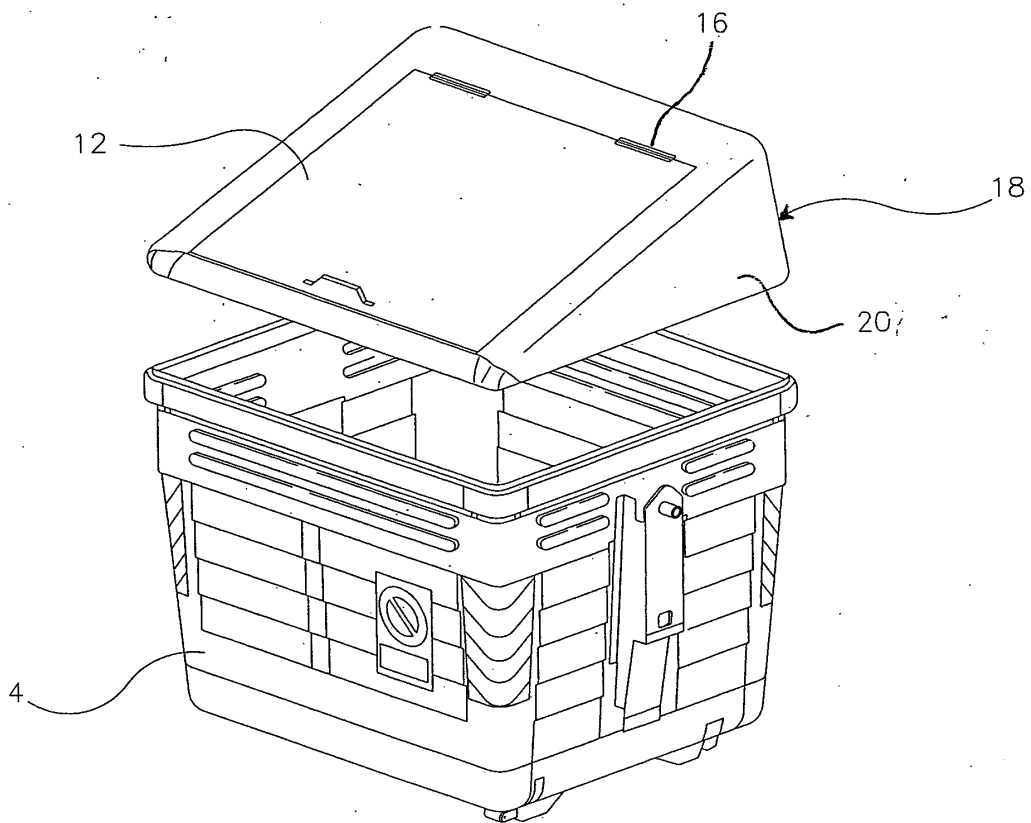


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 04 42 5301

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	CA 2 232 121 A (CS GESTION DE DÉCHETS ET DE MATIERES RECYCLABLES INC) 16 September 1999 (1999-09-16) * page 7, line 17 - page 8, line 8 * * figures 1,2,4 *	1-3	B65F1/16
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		6 July 2004	Smolders, R
CATEGORY OF CITED DOCUMENTS 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 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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 04 42 5301

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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06-07-2004

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