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(54) **BODY FOR A GARBAGE TRUCK**

(57) A body (10) for containing refuse on a garbage truck, comprising a primary loading opening (12), arranged on a lateral or top wall of the body (10), said primary loading opening (12) being adapted to allow the refuse to dump inside the body (10), coupling means, suitable for releasably connecting the body (10) to the garbage truck, and a secondary discharge opening (14),

extending over at least part of the floor of the body (10), and provided with closing means (16) movable between a first closed position, wherein said secondary discharge opening (14) is occluded to retain the refuse within the body (10), and a second open position, wherein said discharge opening (14) is opened to allow the refuse, contained within the body (10), to be discharged.

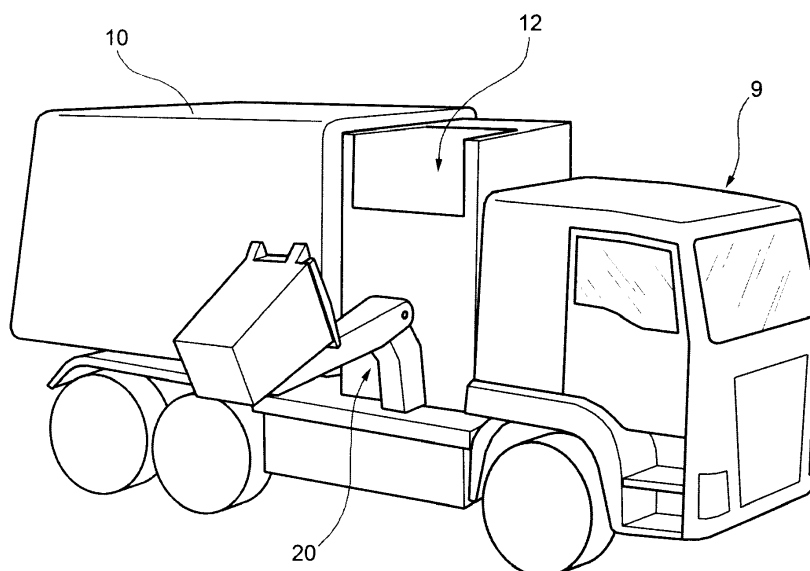


FIG. 1

Description

Technical field

[0001] The present invention is, in general, in the field of vehicles for the collection and transport of urban refuse; in particular, the invention refers to a refuse body or tank for garbage trucks.

Prior Art

[0002] Vehicles for collecting, transporting and treating municipal refuse are known. Such vehicles, defined as self-compactors, are more or less powerful and cumbersome (depending mainly on the type of load and transport capacity), and generally include a tractor and a body wherein the refuse is dumped, then compressed and compacted into a smaller volume.

[0003] Such bodies are fixed to the frame of the garbage truck, and may not be separated from the vehicle. This entails a series of inconveniences since, once the refuse body has been filled, the vehicle must stop its collection operations and visit a landfill site or a transfer center. This inconvenience results in high economic and environmental costs, together with a considerable waste of time. If the discharge site is unable to accept other material, the loaded trucks must wait until the collection center is available again before releasing the load. In such a situation, the trucks cannot carry out their collection service, creating inconveniences in the community in terms of public health and urban decorum.

[0004] Furthermore, the expulsion of compacted refuse from the inside of the body is made more and more unpleasant by the possibility of mechanical failures or other malfunctions, which force operators and maintenance workers to work in precarious and unhealthy conditions.

[0005] Such limitations, understandably, negatively affect the quality of the collection service and the refuse disposal process, which represent social and economic issues of primary importance.

Summary of the invention

[0006] An object of the present invention is to remedy the aforementioned problems.

[0007] To obtain such a result, the body according to the invention may be separated from the garbage truck in such a way that, when the body is full, it may be removed from the vehicle and replaced with an empty body, so that the garbage truck may continue its collection operations independently.

[0008] Furthermore, to allow easy handling of the body and ensure the load of refuse is completely emptied, there is an opening on the floor of the body, which may be closed and opened alternately by means of closing elements so that the load of the body may be easily evacuated downwards by opening such opening on the floor.

[0009] Due to the opening on the floor, it is possible to empty the body correctly and immediately, in particular once it has been separated from the garbage truck.

[0010] The aforementioned and other objects and advantages are achieved, according to an aspect of the invention, by a body for garbage trucks having the features defined in the accompanying claims.

Brief description of the figures

[0011] The functional and structural features of some preferred embodiments of a body for garbage trucks according to the invention will now be described. Reference is made to the accompanying drawings, wherein:

- figure 1 is a schematic perspective view of a garbage truck showing a body according to an embodiment of the present invention;
- figures 2A and 2B are respectively a schematic perspective view in partial cross-section and a side view of a body according to an embodiment of the invention, wherein a possible configuration of the releasable closing means is visible; and
- figure 3 is a schematic view in partial side cross-section of the inside of a body, according to an embodiment of the invention, wherein compaction means for compressing the refuse are visible.

Detailed Description

[0012] Before describing in detail a plurality of embodiments of the invention, it should be clarified that the invention is not limited in its application to the details of construction or to the configuration of the components provided in the following description or illustrated in the drawings. The invention may assume other embodiments and may be implemented or achieved in essentially different ways. It should also be understood that the phraseology and terminology have descriptive purposes and should not be construed as limiting.

[0013] By way of example in reference to figure 1, a body 10 for containing refuse on a garbage truck 9 comprises a primary loading opening 12, located on a lateral or top wall of the body 10. Such loading opening 12 is adapted to allow the discharge of refuse into the body 10, for example, from a container for urban refuse, which is normally lifted, tilted and dumped inside the body 10 manually or by gripping means 20, such as forks or other solutions known to the person skilled in the art.

[0014] The body 10 further comprises coupling means (not shown, but known per se), adapted to connect the body 10 releasably to the garbage truck. In this way, the body is detachable, and may be alternatively attached to the transport vehicle frame or disconnected and removed therefrom.

[0015] A secondary discharge opening 14 extends over at least part of the floor of the body 10. Such secondary opening 14 is provided with closing means 16

movable between a first closed position, wherein said secondary discharge opening 14 is occluded to retain the refuse within the body 10, and a second open position, wherein the secondary discharge opening 14 is opened to allow the refuse, contained within the body 10, to be discharged outside of the body 10. In this way, particularly when the body 10 is separated from the transport vehicle, it is possible to open the passage 14 on the floor and remove the load (also simply by falling). The discharge opening 14 may extend over the entire surface of the floor of the body 10 (in which case, the closure means 16 will itself form the floor of the body, when it is in the first closed position).

[0016] According to one embodiment, illustrated by way of example in figures 2A and 2B, the closing means 16 are configured in the form of a hatch openable towards the outside of the body 10. Appropriately, the hatch comprises one or two doors hinged to the floor (or one of the lateral walls) of the body and revolving downwards, in such a way that, by opening, they place the internal volume of the body 10 in communication with the outside.

[0017] According to the alternatives not shown, the closure means 16 may be configured as a sliding gate, or other solutions available to the person skilled in the art.

[0018] Appropriately, the body 10 has a section tapered upwards, to facilitate the detachment and fall of the refuse when the secondary discharge opening (14) is open. Ideally, the body 10 has a trapezoidal shape, with the two lateral walls inclined longitudinally and sloping from top to bottom.

[0019] Preferably, inside the body 10 are movable compaction means 18, adapted to compress the refuse.

[0020] Such compaction means 18, according to an embodiment, are detachable from the garbage truck integrally with the body 10. In this case, for example, electrical and/or mechanical power take-offs associated with the compaction means 18 may be present in the body 10, such that when the body is loaded onto the transport vehicle, the power take-offs are connected to power sources outside the body 10, which feed the compaction means 18.

[0021] According to one embodiment, one or more gripping means 20, capable of engaging, lifting and tilting refuse containers to dump the contents into the body 10, may be integral with the latter.

[0022] By way of example, the gripping means 20 are configured as articulated forks, comprising an end for engaging the refuse container, and a plurality of mutually hinged and articulable segments.

[0023] The advantage achieved is that of providing a vehicle for containing, transporting and compacting refuse which is extremely simple to manufacture and practical to use.

[0024] Various aspects and embodiments of a body for garbage trucks according to the invention have been described. It is understood that each embodiment may be combined with any other embodiment. The invention, moreover, is not limited to the described embodiments,

but may vary within the scope defined by the accompanying claims.

5 Claims

1. A body (10) for containing refuse on a garbage truck, comprising:

- 10 - a primary loading opening (12), arranged on a lateral or top wall of the body (10), said primary loading opening (12) being adapted to allow the refuse to dump inside the body (10);
- 15 - coupling means, suitable for releasably connecting the body (10) to the garbage truck; and
- 20 - a secondary discharge opening (14), extending over at least part of the floor of the body (10), and provided with closing means (16) movable between a first closed position, wherein said secondary discharge opening (14) is occluded to retain the refuse within the body (10), and a second open position, wherein said discharge opening (14) is opened to allow the refuse, contained within the body (10), to be discharged.

2. A body according to claim 1, wherein the closing means (16) are configured in the shape of a hatch openable toward the outside of the body (10).

30 3. A body according to claim 1 or 2, having a tapered section upwards, to facilitate the detachment and fall of the refuse when the secondary discharge opening (14) is open.

35 4. A body according to any one of the preceding claims, within which compaction means (18), suitable for compressing the garbage, are movable.

40 5. A body according to claim 4, wherein the compaction means (18) are detachable from the garbage truck integrally with the body (10).

45 6. A body according to any one of the preceding claims, comprising gripping means (20), capable of engaging, lifting and tilting refuse containers to dump the contents into the body (10).

50 7. A body according to claim 6, wherein the gripping means (20) are configured as articulated forks, comprising one end for engaging the refuse container, and a plurality of mutually hinged and articulable segments.

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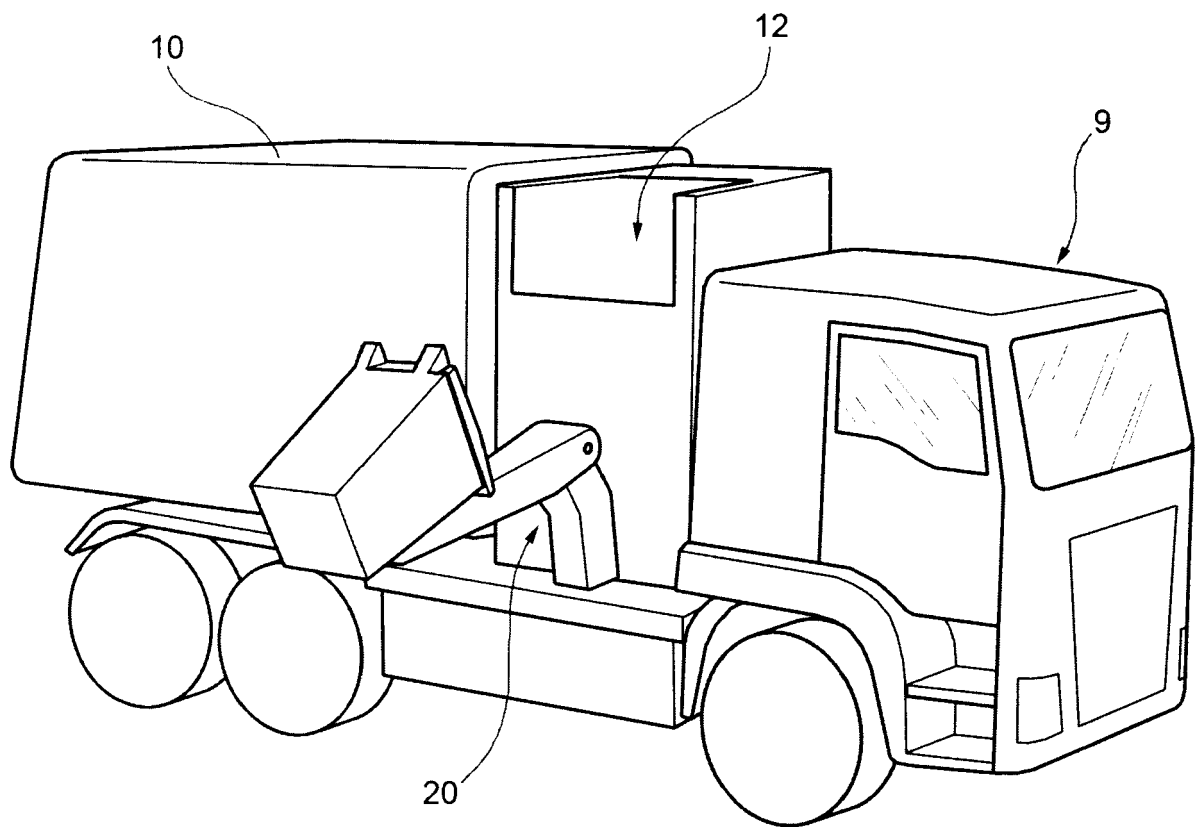


FIG. 1

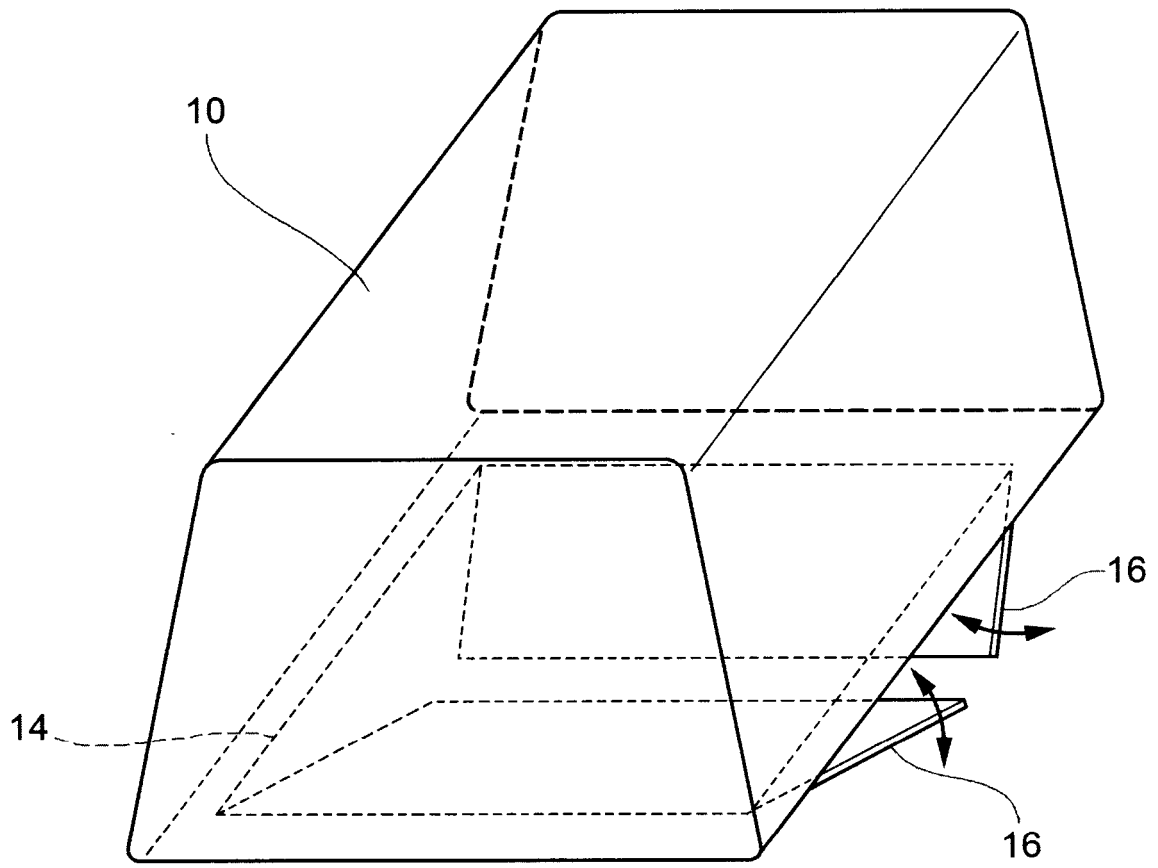


FIG. 2A

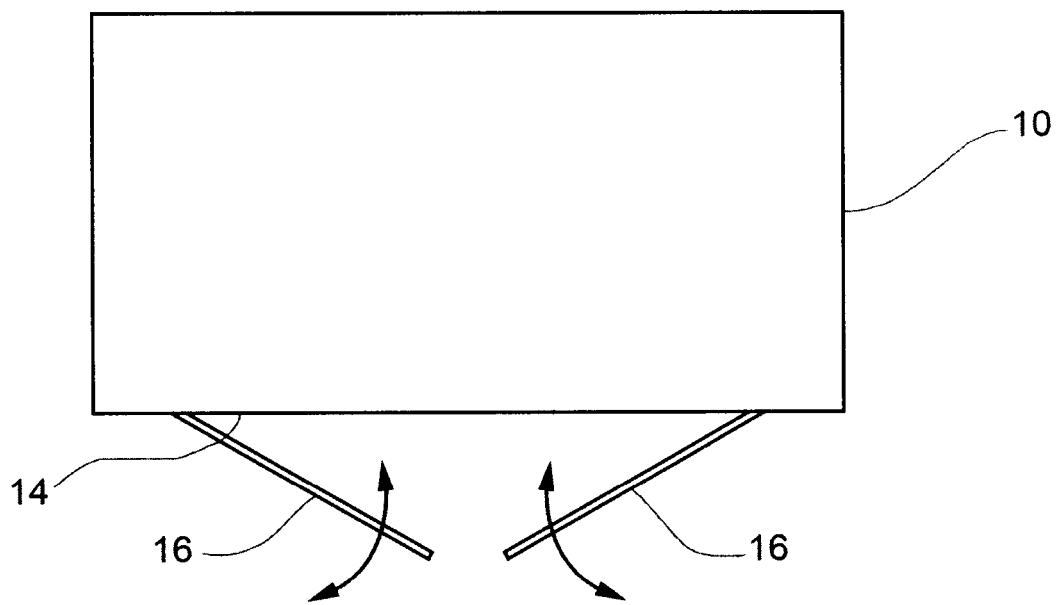


FIG. 2B

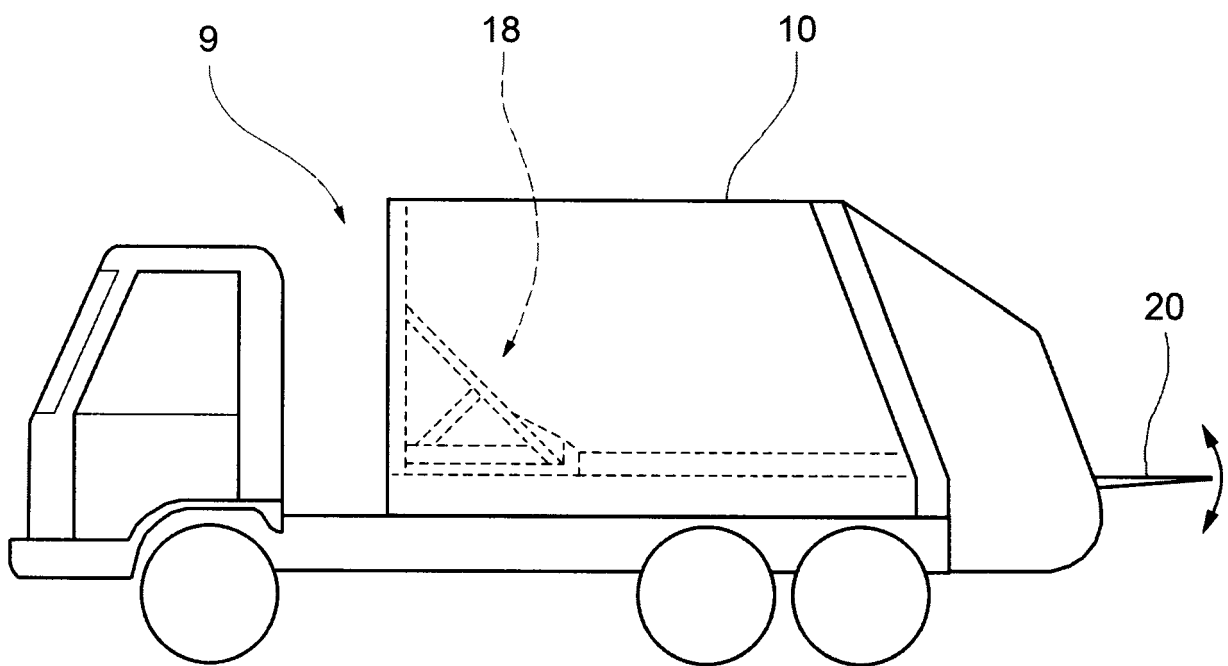


FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 18 17 4709

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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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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 August 2018	Examiner Smolders, Rob
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 18 17 4709

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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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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82