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(54) **A refuse container**

(57) A refuse container (1) comprises a receptacle bin (2) for temporarily storing refuse and a support trailer (8). The bin (2) comprises an opening (14) through which refuse may enter and/or exit the bin (2), and the refuse container (1) comprises a lid (3) to cover the opening (14). The lid (3) is selectively rotatable between a covered configuration and an uncovered configuration. The bin (2) is selectively rotatable relative to the support trailer

(8) between a storing configuration and an emptying configuration. The axis of rotation extends through the bin (2), and extends through the points of attachment of the support trailer (8) to the bin (2). The axis of rotation is spaced apart from the centroid (10) of the bin (2). The weight of the lid (3) causes the lid (3) to automatically move from the covered configuration to the uncovered configuration, responsive to the bin (2) moving from the storing configuration to the emptying configuration.

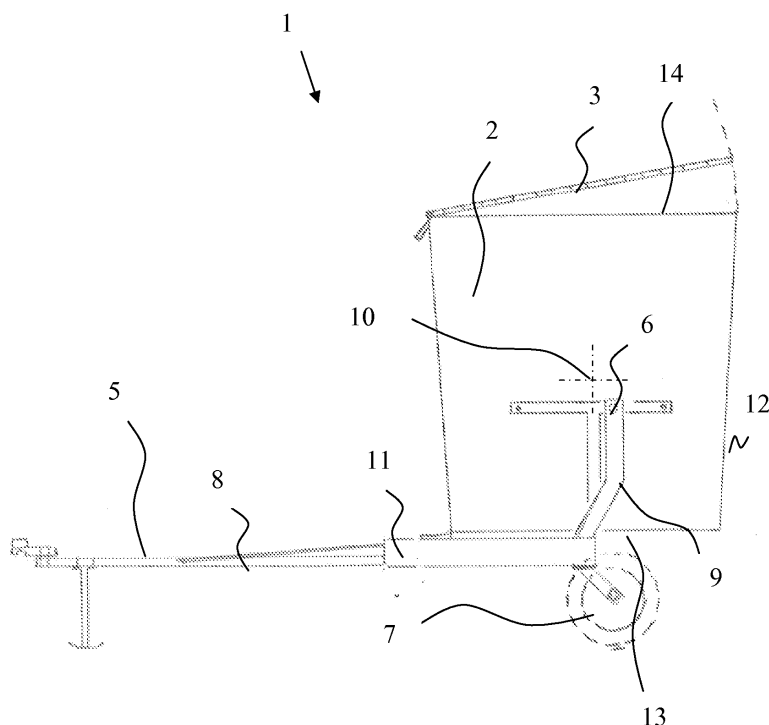


Fig. 1

Description

Introduction

[0001] This invention relates to a refuse container.

Statements of Invention

[0002] According to the invention there is provided a refuse container comprising a receptacle element for at least temporarily storing refuse, the receptacle element being selectively movable between a storing configuration and an emptying configuration.

[0003] In one embodiment of the invention the container comprises means to support the receptacle element relative to the ground. Preferably the receptacle element is movable relative to the support means between the storing configuration and the emptying configuration. Ideally the support means is configured to support the receptacle element raised above the ground. Most preferably the support means is configured to support the receptacle element raised above the ground in the emptying configuration. This arrangement facilitates ease of emptying of the receptacle element.

[0004] In another embodiment the receptacle element is rotatable between the storing configuration and the emptying configuration. Preferably the receptacle element is rotatable by greater than 90 degrees between the storing configuration and the emptying configuration. In this manner the receptacle element may be emptied by tipping the refuse out of the receptacle element. Ideally the receptacle element is rotatable by greater than 120 degrees between the storing configuration and the emptying configuration. Most preferably the receptacle element is rotatable by approximately 135 degrees between the storing configuration and the emptying configuration. The axis of rotation may extend through the receptacle element. This arrangement results in a compact container which is easy to empty. Preferably the axis of rotation extends through one or more points of attachment of the support means to the receptacle element. Ideally the axis of rotation is spaced apart from the centroid of the receptacle element. This arrangement creates a moment of inertia to prevent the receptacle element from inadvertently moving from the storing configuration to the emptying configuration. Most preferably the axis of rotation is located closer to a base of the receptacle element than the centroid of the receptacle element. The axis of rotation may be located closer to a rear wall of the receptacle element than the centroid of the receptacle element.

[0005] In one case the receptacle element comprises an opening through which refuse may enter and/or exit the receptacle element. Preferably the container comprises means to cover the opening. In this manner rain-water and/or animals are prevented from entering the receptacle element. Ideally the cover means is selective-

ly movable between a covered configuration and an uncovered configuration. Most preferably the cover means is rotatable between the covered configuration and the uncovered configuration. The cover means may be configured to move from the covered configuration to the uncovered configuration responsive to the receptacle element moving from the storing configuration to the emptying configuration. This arrangement results in a container which is easy to empty.

[0006] In another case the container comprises means to attach the container to a vehicle. In this manner the container may be transported to any desired site, for example a refuse collection centre.

[0007] In one embodiment the container comprises one or more wheels. In this manner the container may be easily transported.

Brief Description of the Drawings

[0008] The invention will be more clearly understood from the following description of an embodiment thereof, given by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is a side view of a refuse container according to the invention in a storing configuration,

Fig. 2 is a plan view of the refuse container of Fig. 1 in the storing configuration,

Fig. 3 is an isometric view of the refuse container of Fig. 1 in the storing configuration, and

Fig. 4 is a side view of the refuse container of Fig. 1 in an emptying configuration.

Detailed Description

[0009] Referring to the drawings there is illustrated a refuse container 1 according to the invention. The refuse container 1 comprises a receptacle bin 2 for at least temporarily storing refuse, and a support trailer 8.

[0010] The bin 2 comprises an opening 14 through which refuse may enter and/or exit the bin 2, and the refuse container 1 comprises a lid 3 to cover the opening 14. The lid 3 is selectively rotatable between a covered configuration (Fig. 3) and an uncovered configuration (Fig. 1).

[0011] The support trailer 8 comprises a trailer base 11, two upstanding arms 9, a tow bar 5, and two wheels 7.

[0012] Each arm 9 is fixedly attached to the trailer base 11. Each arm 9 comprises an inwardly protruding pivot finger 6 to attach the bin 2 to the support trailer 8 (Fig. 2).

[0013] The tow bar 5 is fixedly attached to the trailer base 11. The tow bar 5 enables the support trailer 8 and hence the refuse container 1 as a whole to be attached to a vehicle, such as a motorcar or a truck.

[0014] Each wheel 7 is attached to the trailer base 11.

[0015] The bin 2 is selectively rotatable relative to the support trailer 8 between a storing configuration (Figs. 1 to 3) and an emptying configuration (Fig. 4). The axis of rotation A-A extends through the bin 2, and extends through the pivot fingers 6 at the points of attachment of the support trailer 8 to the bin 2 (Fig. 2). The axis of rotation A-A is spaced apart from the centroid 10 of the bin 2 (Fig. 1). In particular the axis of rotation A-A is located closer to the base 13 of the bin 2 than the centroid 10 of the bin 2, and the axis of rotation A-A is located closer to the rear wall 12 of the bin 2 than the centroid 10 of the bin 2. In this case the bin 2 rotates by approximately 135 degrees between the storing configuration (Fig. 1) and the emptying configuration (Fig. 4).

[0016] The weight of the lid 3 causes the lid 3 to automatically move from the covered configuration to the uncovered configuration, responsive to the bin 2 moving from the storing configuration (Fig. 3) to the emptying configuration (Fig. 4).

[0017] The support trailer 8 supports the bin 2 relative to the ground raised above the ground in the storing configuration (Fig. 1) and in the emptying configuration (Fig. 4).

[0018] In use, the refuse container 1 is located at a desired site of storing refuse. To insert refuse into the bin 2, the lid 3 is manually rotated from the covered configuration (Fig. 3) to the uncovered configuration (Fig. 1). The refuse is inserted into the bin 2, and the lid 3 is released. The weight of the lid 3 causes the lid 3 to automatically rotate from the uncovered configuration (Fig. 1) to the covered configuration (Fig. 3).

[0019] When it is desired to empty the bin 2, the tow bar 5 is attached to a vehicle (Fig. 3), such as a motorcar or a truck, and the refuse container 1 is transported to a site of refuse disposal. The bin 2 is manually rotated relative to the support trailer 8 from the storing configuration (Fig. 3) to the emptying configuration (Fig. 4). The weight of the lid 3 causes the lid 3 to automatically move from the covered configuration to the uncovered configuration as the bin 2 moves from the storing configuration (Fig. 3) to the emptying configuration (Fig. 4). The refuse falls out of the bin 2 under gravitational action.

[0020] When the bin 2 is empty, the bin 2 is manually rotated relative to the support trailer 8 from the emptying configuration (Fig. 4) to the storing configuration (Fig. 3). The weight of the lid 3 causes the lid 3 to automatically move from the uncovered configuration to the covered configuration as the bin 2 moves from the emptying configuration (Fig. 4) to the storing configuration (Fig. 3). The refuse container 1 may then be transported back to the desired site of storing refuse.

[0021] The trailer 8 is provided below the large wheelie bin 2 which may have a volume of 1,000 litres or 1,100 litres.

[0022] The trailer container 1 keeps the waste sealed from rain, dogs, birds, and rodents. The trailer container 1 enables the waste load to be tipped out without further handling of the rubbish bags being required. The trailer

container 1 thus minimises any smell and/or mess associated with the handling of wet rubbish bags.

[0023] The large wheelie bin 2 is attached to the trailer 8 by the hinge mechanism 6 which enables easy tipping of waste at a landfill. The hinge 6 is located off-centre and sufficiently low to allow easy tipping of the bin 2. The off-centre hinge 6 ensures that the wheelie bin 2 sits on the plate 11 on the trailer 8 until the operator pushes the top of the wheelie bin 2 beyond centre point and allows for the easy discharge of the waste. The hinge attachment 6 is provided on the lower right hand side above the wheel 7. The wheelie bin 2 rests on the metal protrusions 6 at the rear bottom centre of the bin 2. The wheelie bin 2 rests on the protrusions 6 until such time as the bin 2 is ready to be tipped and at that point it may simply be rotated forward on its hinge 6 and emptied. The container 1 thus provides for ease of tipping.

[0024] The container 1 provides an easy, clean, and economical way to handle waste and dispose of waste.

[0025] Although the invention has been described above in relation to temporarily storing refuse, it will be appreciated that the invention may be employed to store a variety of possible materials including rubbish, trash, garbage, waste.

[0026] The invention is not limited to the embodiment hereinbefore described, with reference to the accompanying drawings, which may be varied in construction and detail.

Claims

1. A refuse container comprising a receptacle element for at least temporarily storing refuse, the receptacle element being selectively movable between a storing configuration and an emptying configuration.
2. A container as claimed in claim 1 wherein the container comprises means to support the receptacle element relative to the ground.
3. A container as claimed in claim 2 wherein the receptacle element is movable relative to the support means between the storing configuration and the emptying configuration.
4. A container as claimed in claim 2 or 3 wherein the support means is configured to support the receptacle element raised above the ground.
5. A container as claimed in claim 4 wherein the support means is configured to support the receptacle element raised above the ground in the emptying configuration.
6. A container as claimed in any of claims 1 to 5 wherein the receptacle element is rotatable between the storing configuration and the emptying configuration.

7. A container as claimed in claim 6 wherein the receptacle element is rotatable by greater than 90 degrees between the storing configuration and the emptying configuration. 5
8. A container as claimed in claim 6 or 7 wherein the axis of rotation extends through the receptacle element. 10
9. A container as claimed in claim 8 wherein the axis of rotation extends through one or more points of attachment of the support means to the receptacle element. 15
10. A container as claimed in any of claims 6 to 9 wherein the axis of rotation is spaced apart from the centroid of the receptacle element. 20
11. A container as claimed in claim 10 wherein the axis of rotation is located closer to a base of the receptacle element than the centroid of the receptacle element. 25
12. A container as claimed in claim 10 or 11 wherein the axis of rotation is located closer to a rear wall of the receptacle element than the centroid of the receptacle element. 30
13. A container as claimed in any of claims 1 to 12 wherein the receptacle element comprises an opening through which refuse may enter and/or exit the receptacle element. 35
14. A container as claimed in claim 13 wherein the container comprises means to cover the opening. 40
15. A container as claimed in any of claims 1 to 14 wherein the container comprises means to attach the container to a vehicle. 45

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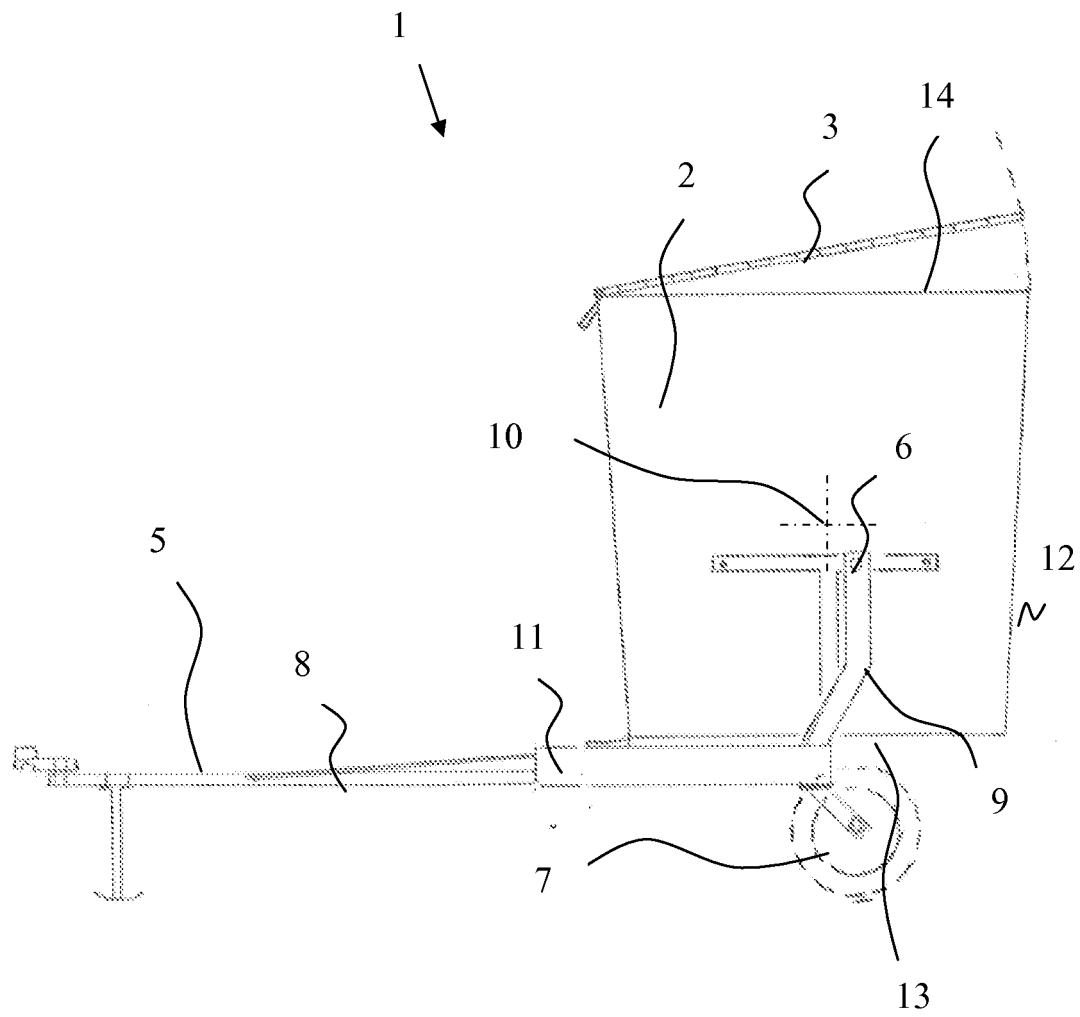


Fig. 1

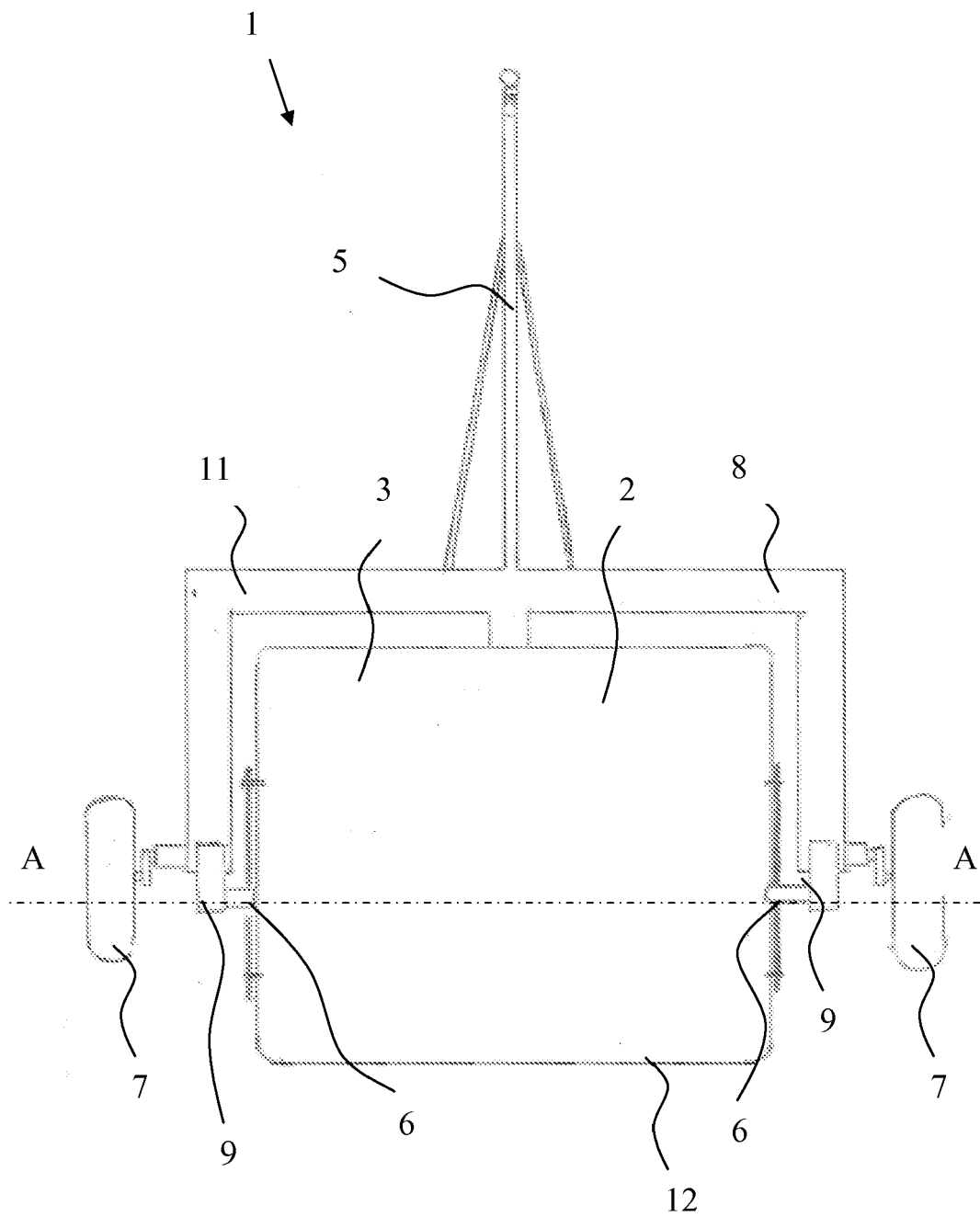


Fig. 2

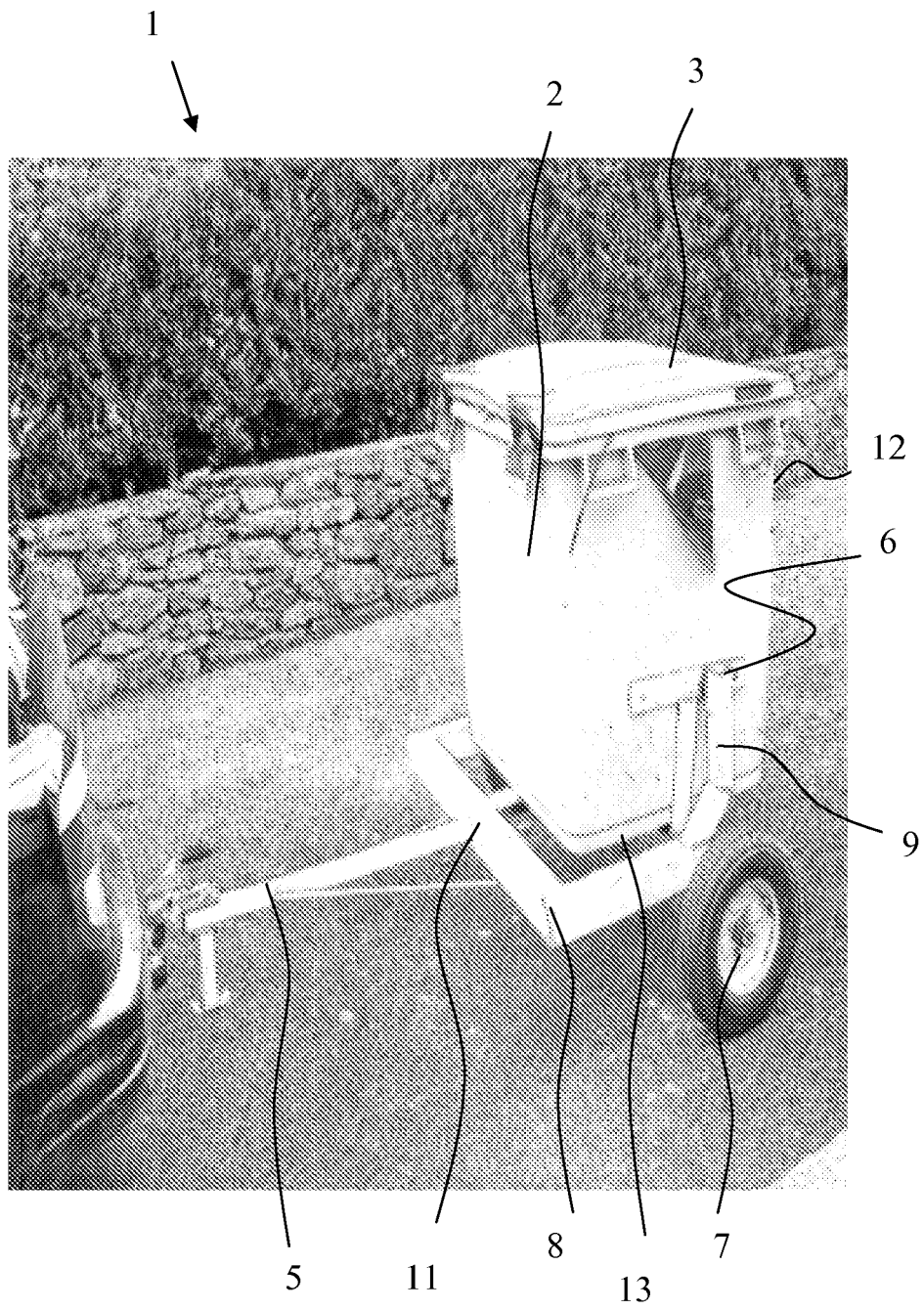


Fig. 3

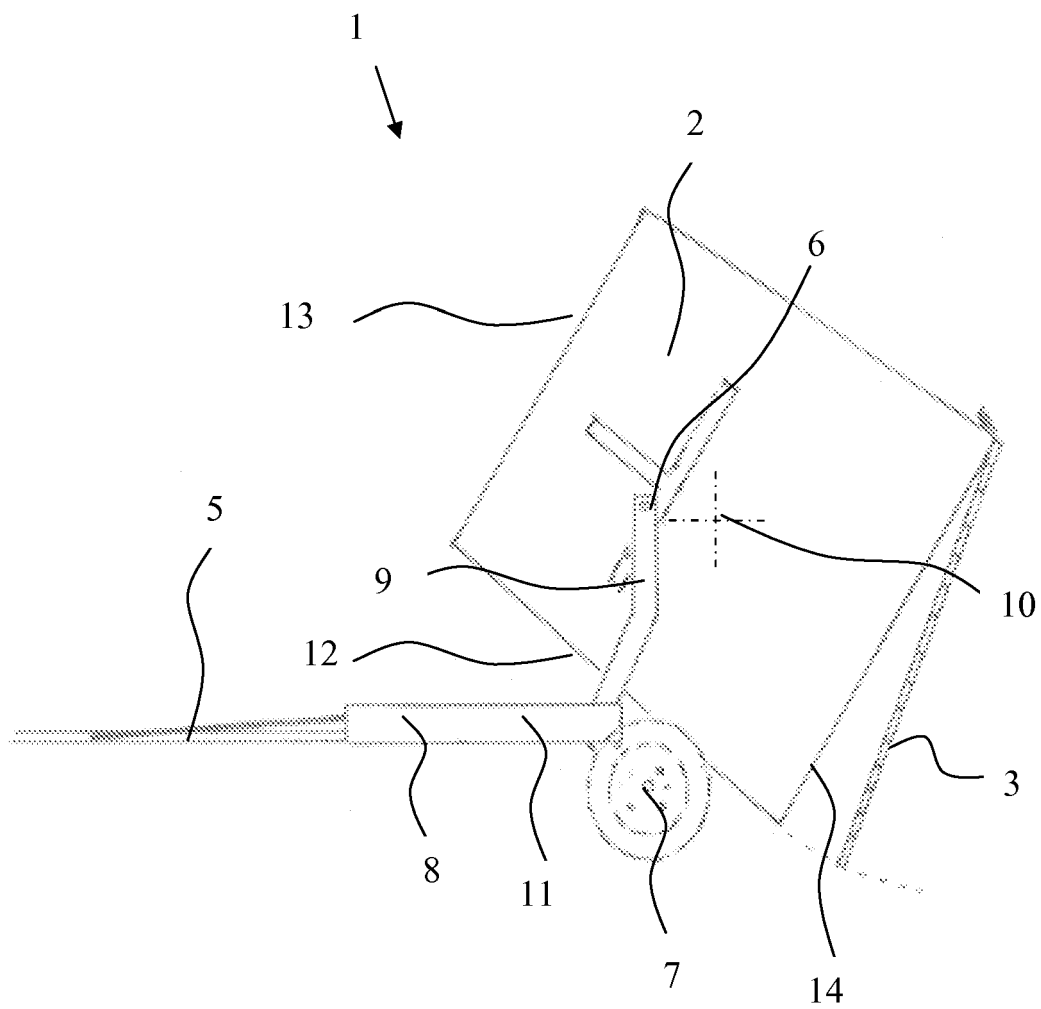


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 09 17 3984

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 039 271 A (V. JULIAN) 13 August 1991 (1991-08-13) * the whole document *	1-15	INV. B65F1/12 B65F1/14
X	US 4 802 709 A (M. JONES) 7 February 1989 (1989-02-07) * the whole document *	1-11, 13-15 12	
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X	US 2 952 434 A (S. BLANCHARD) 13 September 1960 (1960-09-13) * the whole document *	1-10, 13-14 11-12	
A			
			TECHNICAL FIELDS SEARCHED (IPC)
			B65F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		17 February 2010	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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EPO FORM 1503 03.82 (P04C01)

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

EP 09 17 3984

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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17-02-2010

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