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(54) **LOADING AREA FOR ROAD SWEEPER**

(57) A loading area (1) for road sweeper (10) is provided comprising a tub (2) suitable to contain waste and defining at least an opening (20) through which waste can escape from the tub (2), a complementary surface (21) adjacent to the opening (20), a lid (3) configured to occupy, on command, the opening (20); a constraining mechanism (4) constraining in a compliant way the lid (3) to the tub (2) in such a manner to determine at least a closing configuration in which the lid (3) occupies entirely the opening (20), and an opening configuration in

which the lid (3) frees entirely the opening (20); operation means (5) operatively connected to the constraining mechanism (4) and configured to bring the constraining mechanism (4) from the closing configuration to the opening configuration or vice versa; in which the constraining mechanism (4) is connected to said tub (2) at the complementary surface (21) and it is configured so that, in the opening configuration, the lid (3) is at least partially superimposed on the complementary surface (21).

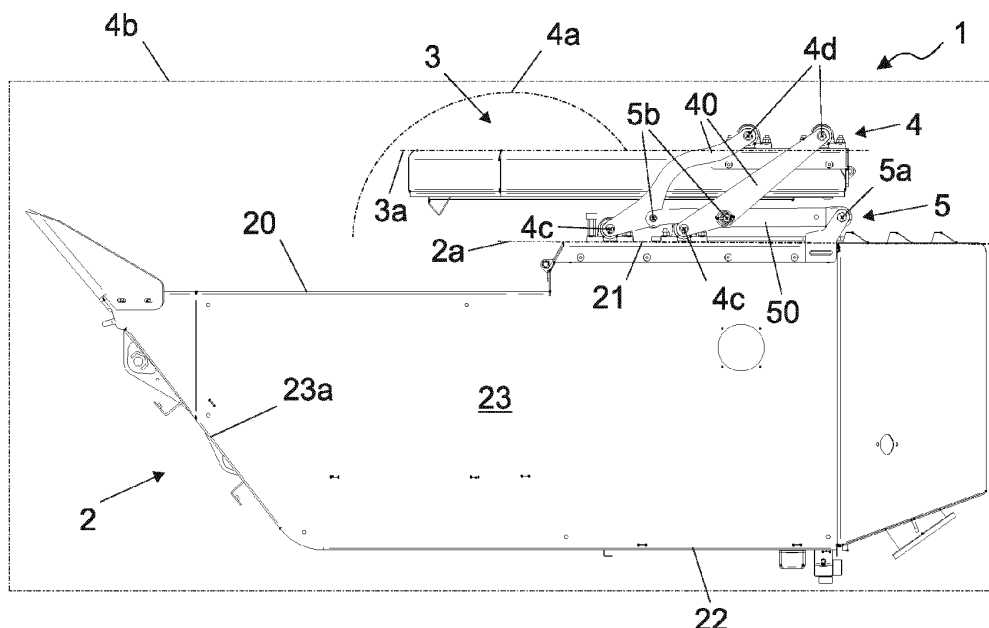


Fig. 1

Description

[0001] The present invention relates to a loading area for road sweeper of the type specified in the preamble of first claim.

[0002] In particular, the present invention relates to a loading area for road sweeper including a particular opening device related to the door of the loading area.

[0003] A road sweeper including a similar loading area is described in the patent application CN-A-112593515.

[0004] As it is known, a conventional road sweeper generally comprises a motorized vehicle, that is a vehicle equipped with motor organs suitable to make the vehicle itself movable autonomously, a plurality of brushes emerging from the vehicle and intended to the direct contact with the ground, a loading area, or container, for collecting waste and a conveyor capable of sending to the loading area the waste collected by the brushes.

[0005] Moreover, an auxiliary tank can be arranged to be placed next to the loading area and to the conveyor to contain water to be dispensed on the ground with the purpose of humidifying it before the waste removal.

[0006] Some sweeping machines can even proceed with cleaning the road surface or the civile area by sprinkling with abundant water of the same.

[0007] In these cases, vehicles are used suitably equipped and provided with a front bar on which washing nozzles are applied, with a wide tank for water, and a unit for pumping and sending water to the mentioned nozzles.

[0008] In each case, the loading area for waste collection generally consists of a casing defining an opening or access which, during the cleaning procedures, is closed by a lid. The latter generally is configured to be opened during the unloading steps of the loading area.

[0009] In detail, the lid is constrained to the loading area through a hinge so as to rotate or swivel, due to the effect of gravitational gradient, during overturning of the loading area and release the opening. Waste, then, can slide, through the opening, inside another collection device, for example a waste compactor.

[0010] The described known art comprises some important drawbacks.

[0011] In particular, the swivelling lid, in some cases, may not allow the correct unloading of waste. For example, if in the loading area agglomerates of consistent sizes are formed, the latter can get stuck between lid and loading area by locking the usual course of the unloading activity.

[0012] Moreover, the swivelling lid, due to the free rotation, can collide with the external devices such as the waste compactor.

[0013] Therefore, the loading areas of the known art are also unsafe and they can lead to failures of the systems interacting with the loading area.

[0014] In this situation, the technical task underlying the present invention is to devise a loading area for road sweeper capable of substantially obviating, at least par-

tially, the mentioned drawbacks.

[0015] Within said technical task an important object of the invention is to obtain a loading area for road sweeper the lid thereof allows to free effectively the opening of the loading area.

[0016] Another important object of the invention is to implement a loading area for road sweeper which is safe and avoids to generate collisions with external systems interacting with the loading area.

[0017] In conclusion, an additional object of the invention is to obtain a loading area for road sweeper allowing to carry out the unloading procedures in a safe and controlled manner.

[0018] The technical task and the specified objects are achieved by a loading area for road sweeper as claims in the enclosed claim 1.

[0019] Preferred technical solutions are highlighted in the depending claims.

[0020] The features and the advantages of the invention are explained hereinafter by the detailed description of preferred embodiments of the invention, with reference to the enclosed drawings, wherein:

Figure 1 shows a side view of a loading area for road sweeper according to the invention;

Figure 2 illustrates a top view of a loading area for road sweeper according to the invention;

Figure 3 is a detailed view of the lid and of the constraining means of a loading area for road sweeper according to the invention;

Figure 4 represents a perspective view of a loading area for road sweeper according to the invention; and

Figure 5 shows a side view of a sweeper comprising un loading area for road sweeper according to the invention during the procedures for unloading waste inside a compactor.

[0021] In the present document, the measurements, values, shapes and geometrical references (such as perpendicularity and parallelism), when associated to words such as "about" or other similar terms such as "approximately" or "substantially", are to be meant as excluding measurement errors or inaccuracies due to production and/or manufacturing errors and, above all, excluding a slight deviation from value, measurement, shape or geometrical reference thereto it is associated. For example, such terms, if associated to a value, preferably designate a deviation not higher than 10% of the value itself.

[0022] Moreover, when used, terms such as "first", "second", "higher", "lower", "main" and "secondary" do not identify necessarily an order, a relation priority or relative position, but they can be simply used to distinguish more clearly components different from each other.

[0023] Unless otherwise specified, as it results from the following discussions, it is considered that terms such as "treatment", "computer science", "determination", "calculation", or the like relate to the action and/or proc-

esses of a computer or similar electronic calculation device which manipulates and/or transforms data represented as physical data, such as electronic quantities of registers of a computer system and/or memories in other data similarly represented as physical quantities within computer systems, registers or other devices for storing, transmitting or displaying information.

[0024] The measurements and data reported in the present text are to be considered, unless otherwise indicated, as performed under International Standard Atmosphere ICAO (ISO 2533:1975).

[0025] With reference to Figures, the loading area for road sweeper according to the invention is designated as a whole with number **1**.

[0026] The loading area **1** is substantially a containment body suitable to allow loading, that is collecting, waste and subsequently unloading the same when desired. Therefore, the loading area **1** generally belongs to a machine suitable to collect waste or debris to remove them, for example, from the street or other pavement or ground.

[0027] An example of machine of this type is the sweeping machine **10**.

[0028] A sweeper **10** generally comprises a motorized vehicle, that is a vehicle equipped with motor organs suitable to make the vehicle itself movable autonomously, a plurality of cleaning organs, for example brushes emerging from the vehicle and intended to the direct contact with the ground, a loading area, or container, to collect waste and a conveyer capable of sending to the loading area the waste collected by the brushes.

[0029] In other words, preferably, the sweeper **10** is a sucking sweeper.

[0030] Therefore, the sweeper **10** preferably comprises the loading area **1**.

[0031] Moreover, the sweeper **10** comprises a frame **11**.

[0032] The frame **11** is substantially defined by the supporting structure of the vehicle. Then, the loading area **1**, if installed on the sweeper **10**, is preferably constrained in a compliant way al frame **11** so as to be able to rotate with respect to the frame **11** around a tilting axis **1a**.

[0033] The tilting axis **1a** is preferably parallel to the ground. Therefore, the loading area **1** can be overturned as it happens substantially in the common trucks with tipping trailers.

[0034] In particular, by rotating around the tilting axis **1a**, the loading area **1** can define at least a loading configuration and an unloading configuration.

[0035] In the loading configuration, the loading area **1** can load waste. Therefore, generally, the loading area **1** is not overturned and it is in connection with the conveyor to receive waste.

[0036] In the unloading configuration, the loading area **1** can unload waste. Therefore, in order to allow the sliding, suitably by gravity, of waste outwardly, the loading area **1** is generally wholly overturned, that is rotated around the tilting axis **1a**, when in the unloading configuration.

uration.

[0037] Naturally, a plurality of intermediate configurations during the transition from the loading configuration to the unloading configuration and vice versa can be defined. Moreover, still more in detail, the sweeper **10** can include tilting means configured to move, in a controlled manner, the loading area **1** around the tilting axis **1a** from the loading configuration to the unloading configuration and vice versa.

[0038] The just described set of frame **11** and loading area **1** inside a sweeper **10**, in any case, is already known to the current state of art.

[0039] However, the loading area **1** defines on itself particular features, described hereinafter.

[0040] In short, the loading area **1** comprises at least a tub **2** and a lid **3**.

[0041] The tub **2** is substantially a casing or tank inside of which waste can be deposited. Therefore, the tub **2** is suitable to contain waste. On this regard, preferably, the tub **2** is almost wholly closed. However, the tub **2** suitable defines at least an opening **20**.

[0042] The opening **20** is substantially a hole, in particular a through-hole. Therefore, the opening **20** is a window obtained on the tub **2** through which the waste can escape from the tub **2** and then from the loading area **1**, for example to be unloaded outside. The opening **20** can be arranged on the top of the loading area **1**, or the opening **20** can be arranged posterior to the loading area **1**.

[0043] Moreover, the tub **2** preferably also comprises a complementary surface **21**. The complementary surface **21** is preferably adjacent to the opening **20**. Moreover, the complementary surface **21** is preferably coplanar, in case parallel with respect to the opening **20**, and more generally placed next thereto.

[0044] In other words, the complementary surface **21** and the opening **20** are preferably arranged at the same side or face of the loading area **1**.

[0045] In detail, preferably, the complementary surface **21** develops predominantly along a main plane **2a**. The main plane **2a** is substantially a virtual plane at which the complementary surface **21** develops.

[0046] Naturally, the complementary surface **21** could even have different shape and in case it could comprise additional elements, for example sucking means or other, arranged herein. Even in this case, however, it is possible to detect a virtual plane, parallel to the opening **20**, along which the main plane **2a** develops.

[0047] Still more in detail, if the loading area **1** is installed on a sweeper **10** and it is in the loading configuration, the main plane **2a** is parallel to the ground; differently, if the loading area **1** is in the unloading configuration, the main plane **2a** is transverse to the ground.

[0048] Should the opening **20** be positioned in a rear area of the loading area **1** and should it develop transversely to the ground, even the main plane **2a** could be transverse to the ground.

[0049] Naturally, the tub **2** can include additional elements. For example, the tub **2** also comprises a bottom

22 and a side wall **23**.

[0050] The bottom **22** preferably develops on one side of the loading area **1** opposite to the opening **20** and to the complementary surface **21**. Then, the bottom **22** for example can develop parallelly to the main plane **2a**.

[0051] The side wall **23** preferably extends from the bottom **22** to the opening **20** and complementary surface **21**. Then, the side wall **23** substantially acts as a connection between the side of the loading area **1** defined by the bottom **22** and the side of the loading area **1** defined by the set of opening **20** and complementary surface **21**. Moreover, in particular, the side wall **23** preferably comprises a rear portion **23a**. The rear portion **23a** preferably is divergent, towards outside of the tub **2**, from the bottom **22** to the opening **20**. Then, the rear portion **23a** is configured in such a way that the opening **20** results to be widened with respect to the bottom **22**. In other words, the rear portion **23a** comprises at least a wall inclined preferably by a not right angle with respect to the main plane **2a**, for example inclined by 45° or even a different angle.

[0052] In any case, the rear portion **23a** is preferably the portion of tub **2** intended to be facing the ground during the overturning of the loading area **1** from the loading configuration to the unloading configuration.

[0053] Then, the rear portion **23a**, being divergent or inclined, is advantageously suitable to allow the sliding, suitably by gravity, of the waste from the tub **2** outwardly when the loading area **1** is overturned and the main plane **2a** is transverse to the ground. If the loading area **1** is installed on the sweeper **10**, preferably the loading area **1** is constrained to the frame **11** by a hinge, which defines the tilting axis **1a**, positioned at the rear portion **23a**.

[0054] In other words, during the overturning of the loading area **1**, the hinge of the rear portion **23a** performs the role of fulcrum of rotation of the loading area **1** around the tilting axis **1a** imparted by the tilting means.

[0055] The lid **3** is the portion of loading area **1** configured to occupy, on command, the opening **20**. Therefore, the lid **3** is suitable to allow or obstruct the passage of waste through the opening **20**.

[0056] Preferably, the lid **3** develops predominantly along a secondary plane **3a**.

[0057] The secondary plane **3a**, too, is a virtual plane along which the lid **3** extends. Therefore, when the lid **3** obstructs the opening **20**, preferably the secondary plane **3a** is at least parallel, for example aligned, to the main plane **2a**.

[0058] The lid **3**, in particular, is constrained in a compliant way to the tub **2**.

[0059] Still more in detail, in order to implement such constraint, the loading area **1** comprises a constraining mechanism **4**.

[0060] The constraining mechanism **4**, indeed, constrains in a compliant way the lid **3** and the tub **2**. Preferably, the constraining mechanism **4** allows to determine at least one closing configuration and one opening configuration.

[0061] In the closing configuration, the lid **3** occupies, preferably wholly, the opening **20**. Therefore, in the closing configuration, the lid **3** prevents the waste from being discharged from the tub **2**.

[0062] Then, preferably, if the loading area **1** is installed on a sweeper **10** and it is in the loading configuration, preferably the constraining mechanism **4** is in the closing configuration.

[0063] In the opening configuration, the lid **3** frees entirely the opening **20**.

[0064] Therefore, in the opening configuration, the lid **3** allows the waste to be discharged from the tub **2** through the opening **20**.

[0065] Then, preferably, if the loading area **1** is installed on a sweeper **10** and it is in the unloading configuration, preferably the constraining mechanism **4** is in the opening configuration.

[0066] Advantageously, the constraining mechanism **4** is connected to the tub **2** at the complementary surface **21**. Moreover, still more advantageously, the constraining mechanism **4** is configured so that, in the opening configuration, the lid **3** is at least partially superimposed on the complementary surface **21**.

[0067] Under the term superimposed it is meant that the lid **3** is substantially above the complementary surface **21** with respect to the ground. Then, the lid **3** can be arranged at least partially above the complementary surface **21** and spaced apart with respect thereto, then defining its own projection on the main plane **2a** which results to be defined on the complementary surface **21**. Or, the lid **3** can be in contact with the complementary surface **21** and rested upon it.

[0068] Moreover, more in detail, preferably the constraining mechanism **4** is configured to translate the lid **3** along a predetermined trajectory **4a** with respect to said tub **2**.

[0069] The predetermined trajectory **4a**, naturally, depends upon the adopted type of constraining mechanism **4**. The trajectory **4a**, in fact, can be rectilinear, in case rectilinear having different movement directions in the various tracts, or curvilinear. Preferably, the predetermined trajectory **4a** is curvilinear, in particular circular. The constraining mechanism **4** is further configured to translate the lid **3** with respect to the tub **2** along the predetermined trajectory **4a** in such a way that the secondary plane **3a** results to be parallel to the main plane **2a** at least in the opening and closing configurations.

[0070] Obviously, the constraining mechanism **4** implements a plurality of other intermediate configurations between the opening configuration and the closing one. Preferably, the constraining mechanism **4** is also configured to maintain the secondary plane **3a** parallel to the main plane **2a** even during the transition between the opening configuration and the closing configuration and vice versa.

[0071] Generally, since the sweeper **10** is of sucking type and works mainly under depression, the constraining mechanism **4** is configured so that, in the closing con-

figuration, the lid 3 seals hermetically the tub 2.

[0072] Moreover, the movement of the lid 3 along the predetermined trajectory 4a is carried out in such a way that, upon starting, the separation movement between lid 3 and tub 2 is implemented without rubbing.

[0073] In detail, in order to implement the constraining mechanism 4 it is possible to adopt different structural solutions.

[0074] In the preferred embodiment, the constraining mechanism 4 defines an articulated parallelogram structure. An articulated parallelogram is substantially a quadrilateral-like element in which the opposite sides, during movement, remain congruent and mutually parallel.

[0075] Still more in detail, in order to implement the articulated parallelogram, the constraining mechanism 4 comprises at least a pair of connectors 40.

[0076] Each connector 40 is substantially long-shaped, for example a rod or bar, extending between two opposite ends. Moreover, preferably, each connector 40 is constrained in a compliant way to the complementary surface 21 so as to be able to rotate with respect to the complementary surface 21 about its own first axis of rotation 4c. The first axis of rotation 4c is preferably normal to a movement plane 4b. The movement plane 4b is substantially a plane on which the predetermined trajectory 4a lies. Therefore, the movement plane 4b can be determined for example by the longitudinal plane of symmetry of the loading area 1.

[0077] Then, the first axis of rotation 4c is also preferably parallel to the tilting axis 1a when the loading area 1 is in use on a sweeper 10.

[0078] In addition to what described, each one of the connectors 40 is constrained in a compliant way to the lid 3 so as to be able to rotate with respect to the lid 3 around its own second axis of rotation 4d.

[0079] The second axis of rotation 4d, too, is normal to the movement plane 4b. Therefore, the second axis of rotation 4d is preferably parallel to the first axis of rotation 4c. Naturally, the constraints of the connector 40 to the lid 3, to the connector 40 and to the complementary surface 21 can be implemented by simple mechanical hinges arranged at fixed points of lid 3 and complementary surface 21, respectively.

[0080] In particular, the connectors 40 of the pair of connectors 40 are mutually spaced apart and, therefore, the connection points between connectors 40 and lid 3 and connectors 40 and complementary surface 21 define the ends of two opposite sides of the articulated parallelogram defined by the lid 3 and the resting surface 21. The connectors 40 define the other two opposite sides of the articulated parallelogram.

[0081] Naturally, the connectors 40 could be only two and arranged in central position, for example at the movement plane 4b.

[0082] Or, the loading area 1 could include, as shown in Figures 1 to 4, two pairs of connectors 40 arranged on opposite sides of the complementary surface 21 specularly with respect to the movement plane 4b.

[0083] Naturally, the articulated quadrilateral-like structure could be replaced by other structures.

[0084] For example, alternatively, the constraining mechanism 4 could include two guides extending along opposite sides of the opening 20 specularly to the movement plane 4b. Then, the guides could define themselves the predetermined trajectory 4a and the lid 3 could be constrained in a compliant way to the guides so as to be movable, on command, along the predetermined trajectory 4a, for example through trolleys or other elements movable inside or on guides.

[0085] The predetermined trajectory 4a for example could be L-like shaped and the constraining mechanism 4 could be configured to move the lid 3 at first by moving it away from the opening 20 along a direction normal to the bottom 22, so as to misalign the planes 2a, 3a, and then by sliding it on the complementary surface 21 along a direction parallel to the main plane 2a, by making the planes 2a, 3a to slide mutually.

[0086] In an additional alternative, the constraining mechanism 4 could include a Cartesian robot suitable to move the lid 3 with respect to the tub 2 along plane parallel to the movement plane 4b, for example along a predetermined L-like shaped trajectory 4a as described previously.

[0087] Generally, any embodiment is suitable, provided that in the opening configuration the lid 3 superimposes at least partially on the complementary surface 21 so as to avoid creating encumbrance in the area near to the rear portion 23 of the tub 2. Moreover, preferably the planes 2a and 3a are mutually misaligned and at least partially superimposed on one another in such a way that the lid 3 is parallel to the complementary surface 21 and reduces its own size.

[0088] Preferably, in order to be able to control the movement of the constraining mechanism 4, the loading area 1 further comprises operation means 5.

[0089] The operation means 5 is operatively connected to the constraining mechanism 4. Moreover, the operation means 5 is configured to bring the constraining mechanism 4 from the closing configuration to the opening configuration or vice versa.

[0090] In the preferred embodiment, the operation means 5 preferably comprises at least an actuator 50.

[0091] The actuator 50 is preferably of linear type. Moreover, the actuator 50 is operatively connected between the complementary surface 21 and at least a connector 40 of the pair of connectors 40.

[0092] If the constraining mechanism 4 comprises two pairs of connectors 40, preferably the operation means 5 comprises two actuators 50 each one thereof operatively connected to a connector 40 of a respective pair of connectors 40.

[0093] Naturally, the actuator 50 could also be connected to both connectors 40 of the pair of connectors 40.

[0094] In each case, generally, the actuator 50 is suitable to drag at least a connector 40 so as to make it to rotate around the first axis of rotation 4c so as to define

the different closing, opening or intermediate configurations.

[0095] Still more in detail, the actuator 50 is preferably expandable between its own first end **50a** and its own second end **50b**. The second end 50b naturally is opposite the first end 50a.

[0096] Moreover, the actuator 50 is preferably constrained in a compliant way at the first end 50a to the complementary surface 21 so as to be able to rotate around a third axis of rotation **5a**.

[0097] The third axis of rotation 5a is preferably parallel to the first axis of rotation 4c. Then, the actuator 50 is preferably constrained in a compliant way at the second end 50b to the connector 40 so as to be able to rotate around a fourth axis of rotation **5b**.

[0098] The fourth axis of rotation 5b is parallel to the third axis of rotation 5a.

[0099] Then, the fourth axis of rotation 5b, too, is parallel to the first axis of rotation 4c.

[0100] In conclusion, the operation means 5 could be different depending upon the configuration of the constraining mechanism 4.

[0101] For example, in case of Cartesian robot, the operation means 5 could coincide with the constraining mechanism 4.

[0102] Or, in case the constraining mechanism 4 comprises specular guides, the operation means 5 could include movable trolleys which can be operated, for example, by electro-mechanical motor.

[0103] The operation of the previously described loading area 1 for road sweeper in structural terms is the following.

[0104] Substantially, thanks to the constraining mechanism 4, when the operation means 5 moves the constraining mechanism 4, it is possible to move the lid 3 with respect to the tub 2 so as to free, in the opening configuration, or to obstruct, in the closing configuration, the opening 20.

[0105] The loading area 1 for road sweeper according to the invention achieves important advantages.

[0106] In fact, the constraining mechanism 4 allows to prevent the lid 3 from creating, especially in the opening configuration, useless encumbrance close to the opening 20 and especially to the rear portion 23a on which waste slides to be discharged from the loading area 1.

[0107] In particular, the fact of moving the lid 3 along a predetermined limited trajectory 4a, by keeping the planes 2a, 3a mutually parallel during movement, allows not only to free effectively the opening 20, but event to avoid generating collisions with external systems interacting with the loading area, for example with the inlet mouth of a compactor.

[0108] Therefore, and additional important advantage obtained by the loading area 1 is to make the waste unloading safe and controlled, by avoiding jams or collisions which could cause damages to the loading area 1 or the external instruments.

[0109] The invention can be subject to variations within

the scope of the inventive concept defined by the claims.

[0110] Within such scope all details can be replaced by equivalent elements and the materials, shapes and sizes can be any.

Claims

1. Loading area (1) for road sweeper (10) comprising:

- a tub (2) capable of containing waste and defining at least:

- an opening (20) through which said waste can escape from said tub (2), and
- a complementary surface (21) adjacent to said opening (20),

- a lid (3) configured to occupy, on command, said opening (20);

- a constraining mechanism (4) constraining in a compliant way said lid (3) to said tub (2) in such a manner as to determine at least:

- a closing configuration in which said lid (3) entirely occupies said opening (20), and
- an opening configuration in which said lid (3) entirely frees said opening (20);

characterised by comprising

- operation means (5) operatively connected to said constraining means (4) and configured to bring said constraining means (4) from said closing configuration to said opening configuration or vice versa;

and by

- said constraining mechanism (4) is connected to said tub (2) at said complementary surface (21) and is configured so that, in said opening configuration, said lid (3) is at least partially superimposed on said complementary surface (21).

2. Loading area (1) according to claim 1, wherein said complementary surface (21) predominantly develops along a main plane (2a), said lid (3) predominantly develops along a secondary plane (3a) and said constraining mechanism (4) is configured to translate said lid (3) along a predetermined trajectory (4a) with respect to said tub (2) in such a way that said secondary plane (3a) results to be parallel to said main plane (2a) at least in said opening configuration and said closing configuration.

3. Loading area (1) according to any preceding claim, wherein said predetermined trajectory (4a) is a circular trajectory and said constraining mechanism (4)

is configured to maintain said secondary plane (3a) parallel to said main plane (2a) also during the transition between said opening configuration and said closing configuration.

4. Loading area (1) according to any one of the preceding claims, wherein said constraining mechanism (4) defines an articulated parallelogram structure. 5
5. Loading area (1) according to any preceding claim, wherein said constraining mechanism (4) comprises at least one pair of connectors (40) each constrained in a compliant way to said complementary surface (21) so as to be able to rotate with respect to said complementary surface (21) about its own first axis of rotation (4c) normal to a movement plane (4b) on which said predetermined trajectory (4a) lies and each one is constrained in a compliant way to said lid (3) in such a way that it can rotate with respect to said cover (3) about its own second axis of rotation (4d) normal to said movement plane (4b). 10 15 20
6. Loading area (1) according to any one of the preceding claims, wherein said operation means (5) comprise at least one linear actuator (50) operably connected between said complementary surface (21) and at least one said connector (40). 25
7. Loading area (1) according to any of claims 5-6, wherein said actuator (50) is expandable between said first end (50a) and said second end (50b) opposite said first end (50a), constrained in a compliant way at said first end (50a) to said complementary surface (21) so as to be able to rotate about a third axis of rotation (5a) parallel to said first axis of rotation (4c) and constrained in a compliant way at said second end (50b) to said connector (40) so as to be able to rotate about a fourth axis of rotation (5b) parallel to said third axis of rotation (5a). 30 35 40
8. Loading area (1) according to any preceding claim, wherein said tub (2) further comprises a bottom (22) extending on one side of said loading area (1) opposite said opening (20) and said complementary surface (21), and a side wall (23) extending from said bottom (22) to said opening (20) and said complementary surface (21) and comprising a rear portion (23a) diverging outwardly from said bottom (22) to said opening (20) and suitable for allowing the sliding of said waste from said tank (2) outwardly when said loading area (1) is overturned and said main surface (2a) is transverse to a ground. 45 50
9. Road sweeper (10) comprising a frame (11) and a loading area (1) according to any one of the preceding claims, wherein said loading area (1) is constrained in a compliant way to said frame (11) so as to be able to rotate with respect to said frame (11) 55

around a tilting axis (1a) parallel to said ground to define at least:

- a loading configuration of said waste in which said constraining mechanism (4) is in a closed configuration and said main plane (2a) is parallel to a ground, and
 - an unloading configuration of said waste in which said constraining mechanism (4) is in an opening configuration and said main plane (2a) is transverse to said ground.
10. Road sweeper (10) according to any of claims 8-9, wherein said loading area (1) is constrained to said frame (11) by a hinge defining said tilting axis (1a) and positioned at said rear portion (23a), and said sweeper (10) further comprising tilting means configured to move, in a controlled manner, said loading area (1) around said tilting axis (1a) from said loading configuration to said unloading configuration and vice versa.

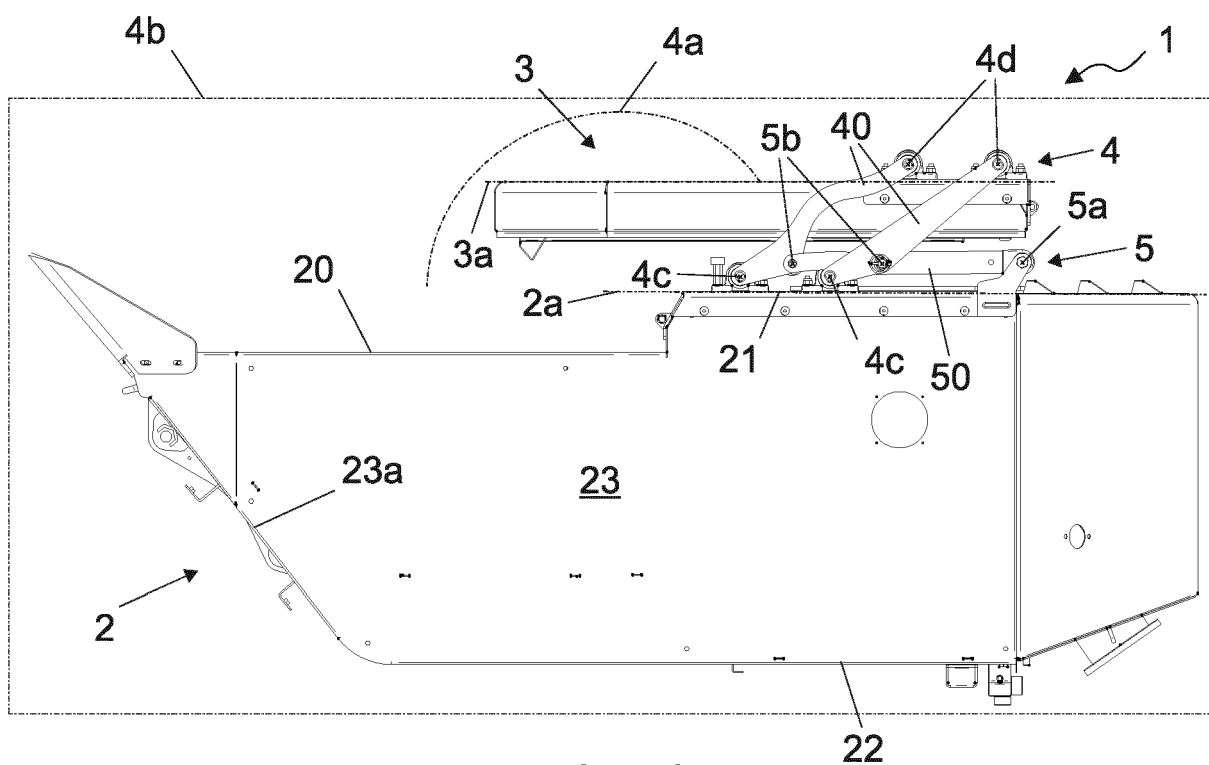


Fig. 1

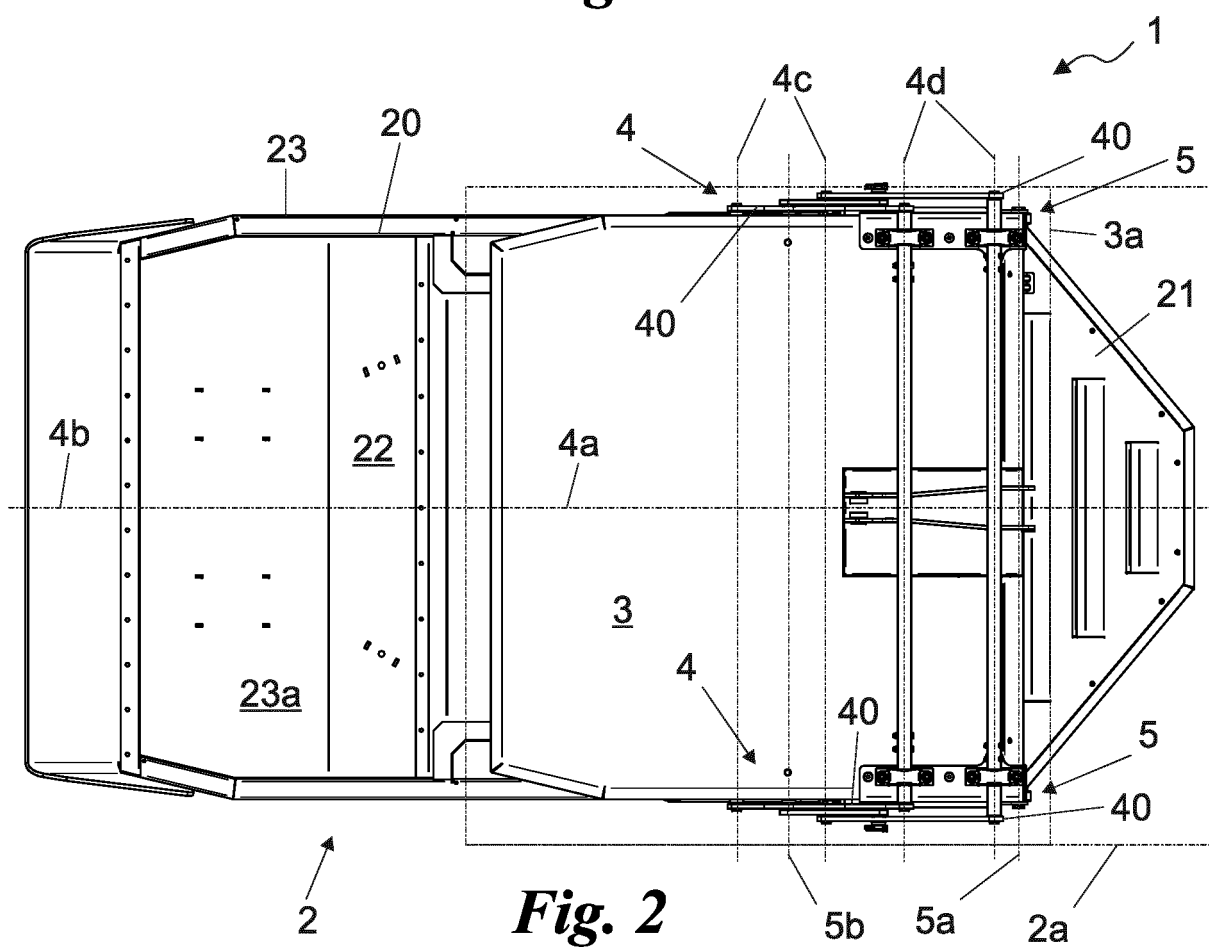
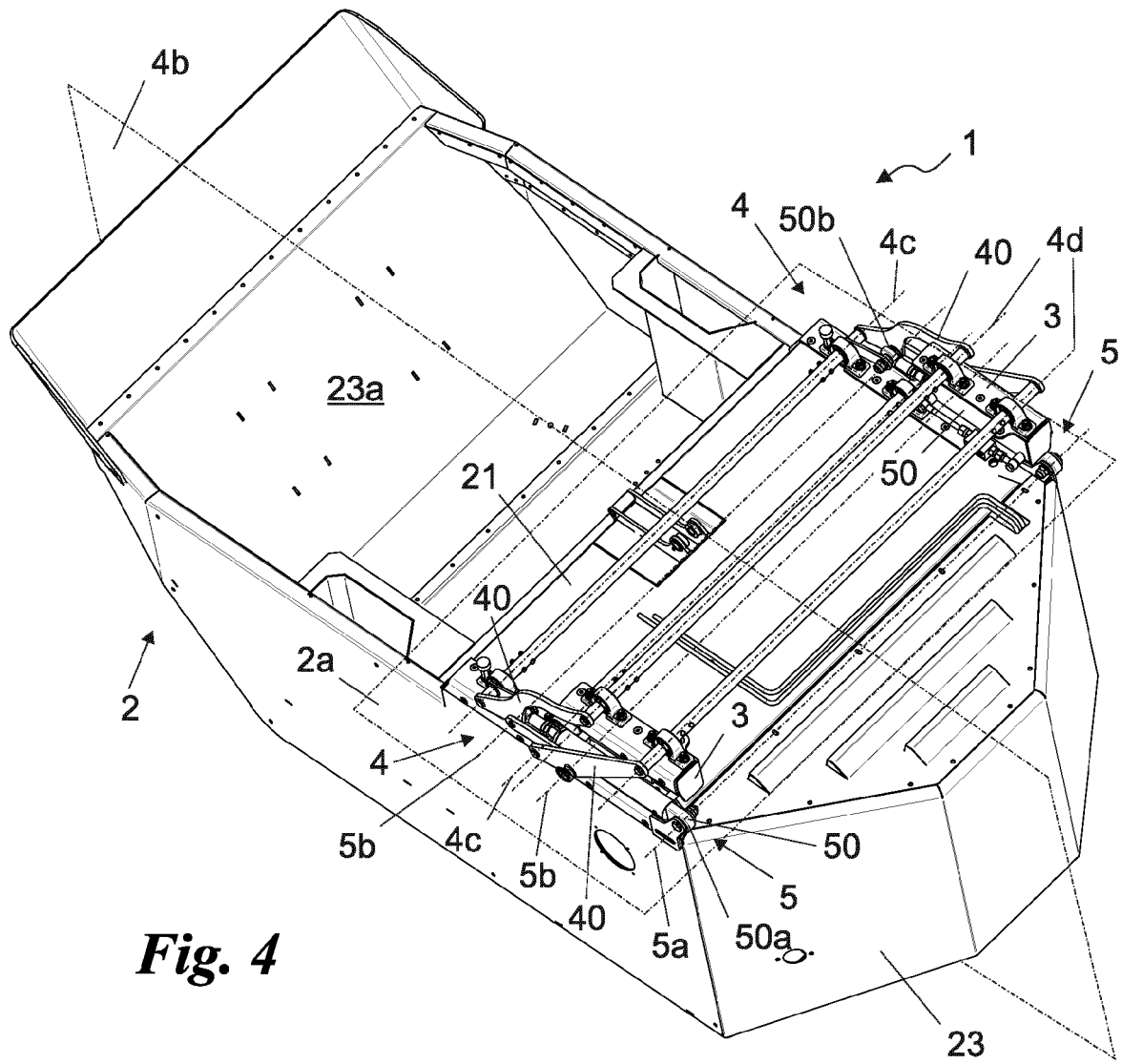
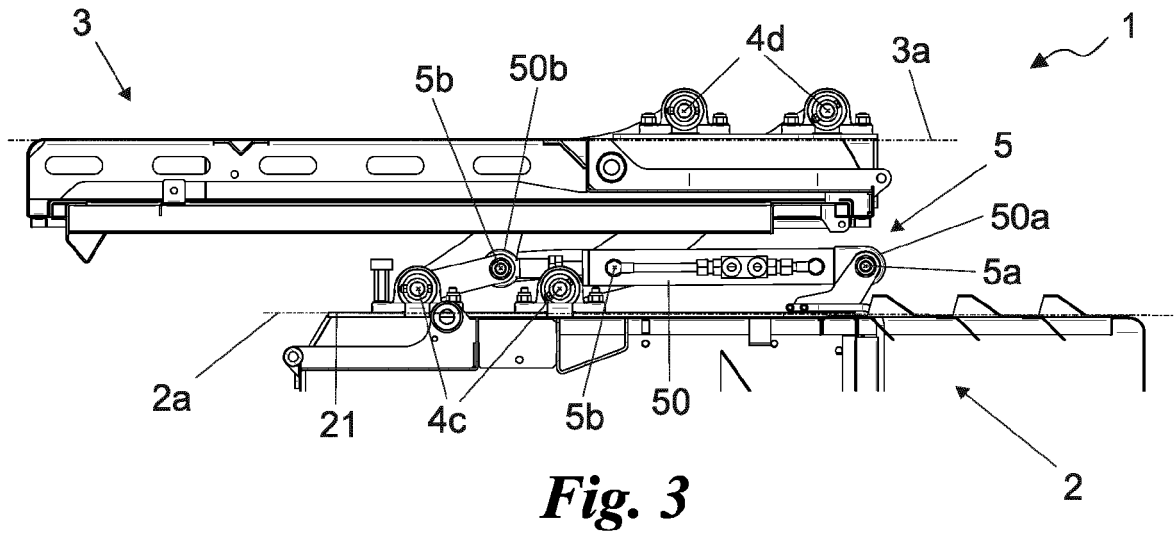


Fig. 2



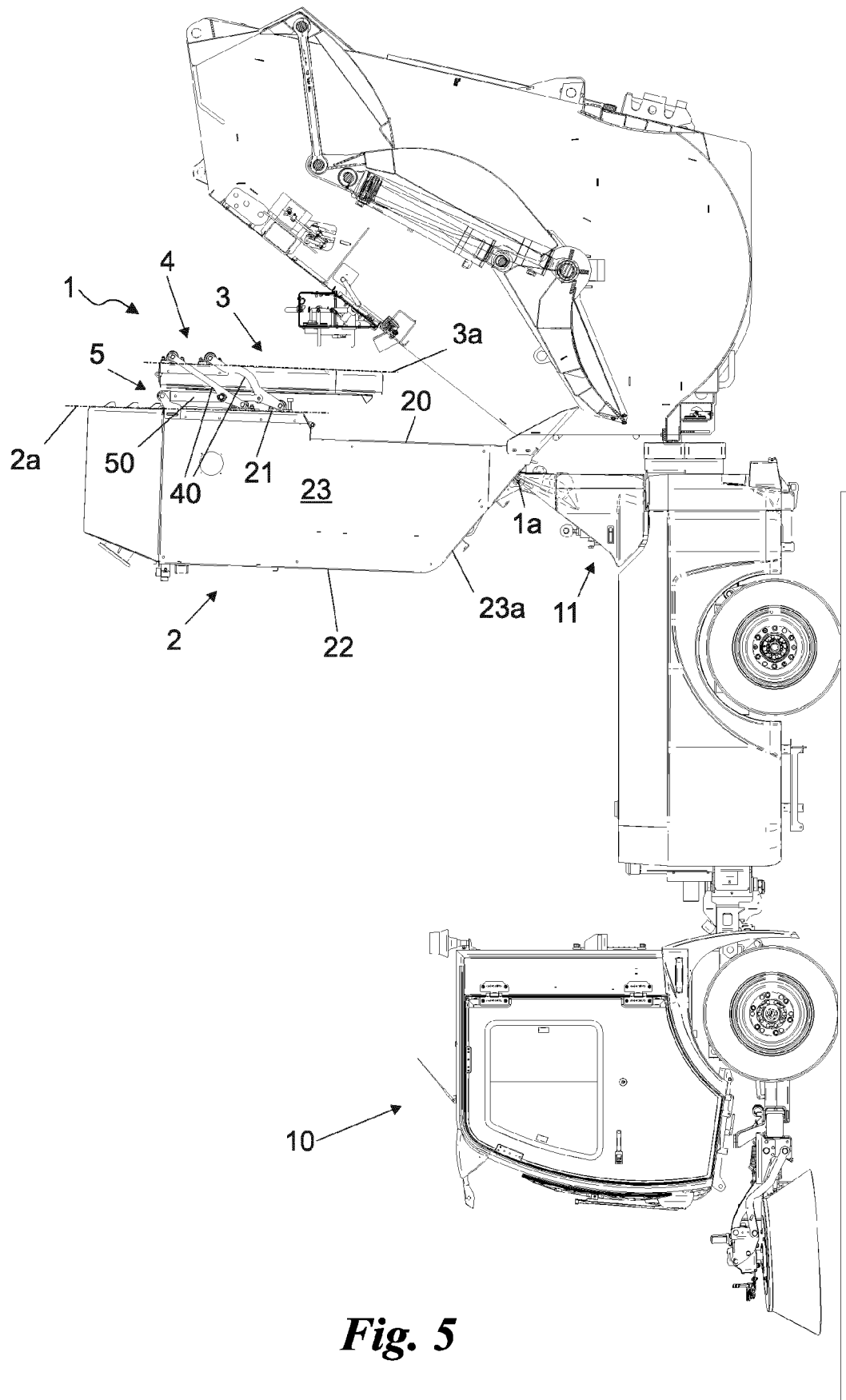


Fig. 5



EUROPEAN SEARCH REPORT

Application Number

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Place of search Munich		Date of completion of the search 27 February 2024	Examiner Kremsler, Stefan
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