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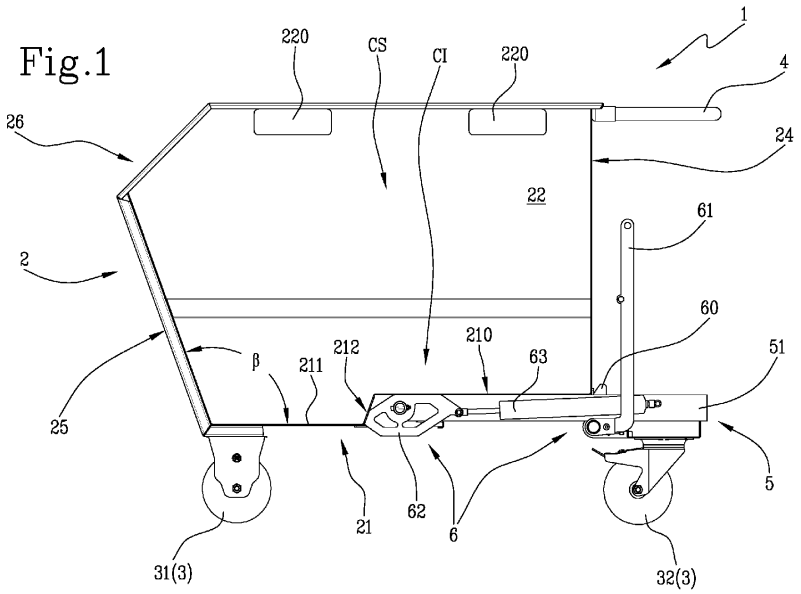
(54) CONTAINER AND METHOD FOR STACKING A PLURALITY OF CONTAINERS

(57) Container 1, for containing and transporting chips and other materials from mechanical and industrial processing waste, of the type comprising a box-shaped body 2, internally defining a collection compartment VR open at the top, comprising a bottom wall 21,
a first and a second side wall 22,23, a rear wall 24 and a front wall 25, connected together. The container further comprises a base 5, which can be forked by the forks of a lift truck, a plurality of swivelling wheels 3 connected to the base 5 and a handle 4 to allow an operator to grasp and manoeuvre the container. Base 5, plurality of wheels 3 and handle 4 form a set of accessories 10 of the container 1. The container 1 provides an assembled configuration, in which the set of accessories 10 is mounted on the box-shaped body 2, and a disassembled configuration, in which the set of accessories 10 is dismounted from the box-shaped body 2. A second container 1', identical to the previous one, being stackable inside the container 1.

Fig.1



EP 4 365 105 A1

Description

[0001] The present invention relates to a container. The present invention also relates to method for stacking a plurality of containers.

[0002] In the industrial field, processing waste and rejects are often generated and it is therefore necessary to have containers for the collection of these waste products.

[0003] Some examples of industrial waste products can be chips, lubricating oil, sawdust, plastic and others that must be collected for recovery activities and/or for proper disposal thereof.

[0004] Containers, generally metallic, for performing such a recovery of waste are known. These containers have a box-shaped body with a plurality of swivelling wheels at the bottom and a handle at the side to facilitate the displacements thereof within the workshop. Below, the box-shaped body has a base defined by a pair of rectangular section tubes that can be forked by the forks of a lift truck to allow the container to be lifted from the ground.

[0005] The container then provides an overturning system, of known type, activatable upon command of a lever to allow a rotation of the container from a horizontal arrangement to an overturned arrangement. In the horizontal arrangement, the container is withdrawn by the forks of a lift truck and transported near a waste discharge point, while in the overturned arrangement the container is rotated with respect to the base to allow emptying.

[0006] These systems have some disadvantages when the manufacturer has to ship them. Obviously to protect the components outside the container, such as wheels, handle and overturning system, thus avoiding parts protruding from the box-shaped body that might be hit or broken during shipping, the manufacturer packs the container in a dismounted configuration.

[0007] When it is necessary to send more than one container to a recipient, the manufacturer stacks the box-shaped bodies, trying to nest one on top of the other, and packs the accessories in a separate package. In other words, the packaging envisages a packaging item for the stacking of the box-shaped bodies and a packaging item that gathers the accessories of the various containers.

[0008] In this way, the shipment of several containers must obligatorily provide for the management of two packaging items or two shipping units.

[0009] This packaging condition makes it difficult and expensive to ship two or more containers.

[0010] In some cases an attempt has been made in order to contain all the accessories on the box-shaped body that overhangs the stack of stacked box-shaped bodies, but even this solution proved ineffective. The recipient who receives a single packaging and who is not accustomed to this type of equipment, having all the accessories packed in a single container, the one at the top of the stack, finds the accessories in a position of difficult access especially if the stack of containers is formed by three or more containers.

[0011] In addition, by withdrawing the container above the stack and starting mounting it, he is forced to move the other accessories contained in the container, with the risk of damaging or losing them, extending the time for mounting the container and having to manage the storage of the other accessories.

[0012] Still, due to the particular shape of the box-shaped bodies, designed to facilitate their overturning, concentrating all the weight on the box-shaped body that overhangs the stack, makes the packaging unstable and therefore potentially dangerous.

[0013] Moreover, a concentrated load, given by the weight of all the accessories on the bottom wall of the box-shaped body that overhangs the stack, can deform the same bottom wall of the box-shaped body.

[0014] The technical task of the present invention is therefore to make available a container that is able to overcome the drawbacks which have emerged from the prior art. A further technical task of the present invention is also to make available a method for stacking a plurality of containers.

[0015] An object of the present invention is therefore to make available a dismountable container for shipping and having a contained overall footprint to facilitate packaging and shipping operations.

[0016] Another object of the present invention is to make available a stackable container that can be stacked with other containers and shipped in a single packaging by gathering inside the same the box-shaped bodies and accessories of each container. Still, an object of the present invention is to make available a stackable container that can be stacked with other containers and packaged in a single packaging that is stable and well-balanced.

[0017] Furthermore, a further object of the present invention is to make available a method for stacking a plurality of containers capable of uniformly and orderly protecting and distributing the accessories within the packaging.

[0018] The specified technical task and the specified objects are substantially achieved by a container and relative method for stacking a plurality of containers comprising the technical features disclosed in one or more of the appended claims.

[0019] Further features and advantages of the present invention will become more apparent from the indicative, and thus non-limiting, description of an embodiment of a container and relative method for stacking a plurality of containers.

[0020] Such a description will be set out below with reference to the accompanying drawings, which are provided solely for illustrative and therefore non-limiting purposes, in which:

- figure 1 is a side view of a container for containing and transporting chips and other waste materials made in accordance with the present invention.

- Figures 2 and 3 illustrate the container of figure 1 respectively in a rear front view and in a front anterior view;
- figure 4 illustrates in plan view the container of figure 1 ;
- figure 5 illustrates a perspective view of the container of figure 1 ;
- figure 6 illustrates in perspective view the container of figure 1 in a disassembled configuration;
- figure 7 illustrates in front view a plurality of stacked containers 100 according to the method obtained in accordance with the present invention;
- figure 8 illustrates in a partially interrupted side view a plurality of stacked containers 100 according to the method obtained in accordance with the present invention;
- figure 9 illustrates in perspective view the withdrawal of a container from a plurality of stacked containers 100 implemented by a lift truck;
- figure 10 illustrates in perspective view a component of the container of figure 1;
- figures 11A and 11B illustrate the component of figure 10 respectively in front view and in enlarged front section.

[0021] With reference to the attached figures, a container for containing and transporting chips and other waste materials from mechanical processing and more extensively from industrial processing has been indicated as a whole with 1, while a plurality of stacked containers has been indicated as a whole with 100.

[0022] The container 1 provides a box-shaped body 2, internally defining a collection compartment VR, open at the top, adapted to receive and contain waste materials. The box-shaped body 2 comprises a plurality of walls and provides a bottom wall 21, a first side wall 22 and a second side wall 23, a rear wall 24 and a front wall 25. The mentioned walls 21,22,23,24,25 are made of metal, preferably steel, and are welded together at the junction ends of the walls.

[0023] The bottom wall 21 provides for a substantially horizontal lying, for receiving the waste material, and in plan a substantially rectangular contour.

[0024] As visible from figure 1, the bottom wall 21 provides an upper plane 210 and a lower plane 211 that are staggered and connected by a joining wall 212.

[0025] From the bottom wall 21 the other walls extend in elevation to define the box-shaped body 2 and internally the collection compartment VR.

[0026] Taking figure 1 as a reference, the bottom wall 21 is connected, at a rear side, to a rear wall 24 that extends from the bottom wall 21 with a substantially vertical trend. Then at an anterior side, the bottom wall 21 is connected to a front wall 25 extending away from the bottom wall 21 with oblique trend. More precisely, the front wall 25 defines with respect to the bottom wall 21 an angle β comprised between 100° and 140°, preferably at 110°. The front wall 25 is lower than the rear wall 24 so as to define an opening 26 of access to the collection compartment VR to facilitate the emptying of the container 1 from the waste material.

[0027] The box-shaped body 2 is laterally closed through a first and second side wall 22,23. The first side wall 22 is, at opposite ends, connected to front wall 25 and rear wall 24, and at the bottom, connected to bottom wall 21. In the same way, the second side wall 23 is, at opposite ends, connected to the front wall 25 and rear wall 24, and at the bottom, connected to the bottom wall 21.

[0028] The extension from the bottom wall 21 of the first and second side walls 22,23 takes place with a progressively divergent trend from the bottom wall 21 moving away therefrom.

[0029] As visible from figure 2, each side wall 22,23 has an inclination with respect to a vertical plane by an angle α comprised between 7° and 1°, preferably 2°.

[0030] The divergent trend of the side walls 22,23 allows a stacking of several containers by inserting one inside the other as better described below.

[0031] At an upper region of the first side wall 22 there is a first pair of windows 220 and similarly at an upper region of the second side wall 23 there is a second pair of windows 230. The first and second pairs of windows 220,230 are facing and coaxial to each other so that they can be forked by the forks of a lift truck for lifting the container as shown in figure 9 where the lift truck withdraws the container on top of a stack of stacked containers.

[0032] At a median region of the first side wall 22 there is a first projection 221, located inside the collection compartment VR and extending away from the first side wall 22 towards the second side wall 23.

[0033] In an axially symmetric manner, along a median axis of the bottom wall 21 connecting the rear wall 24 to the front wall 25, also the second side wall 23 has, in a median region, a second projection 231, located inside the collection compartment VR and extending away from the second side wall 23 towards the first side wall 22.

[0034] The first and second projections 221,231, divide the collection compartment VR into an upper chamber CS and a lower chamber CI. The upper chamber CS is designed to house a lower portion of a second container 1', in a disassembled configuration better detailed below. The lower chamber CI is instead configured to internally house at least one set of accessories 10 illustrated in the following of the present description.

[0035] The first and second projections 221,231 are made, given the metallic conformation of the corresponding first and second side walls 22,23, by a folding process so as to obtain the profile of the projection without affecting the surface integrity of the inner wall. In this way, by not affecting the protective coatings applied on the walls at the respective internal sides of the collection compartment VR, any waste materials, in particular liquids, fail to attack and corrode the external surface of the side walls.

[0036] Taking the first projection 221 as a reference, this has a first section 221A, extending from the first side wall 21 towards the inside of the collection compartment VR and terminating with an end 221B, and a second section 221C, extending from the corresponding end 221B and terminating in connection with the first side wall 21.

[0037] With a specular and opposite shape, the second projection 231, not illustrated in the attached figures, has a first section 231A, extending from the second side wall 23 towards the inside of the collection compartment VR and terminating with an end 231B, and a second section 231C, extending from the corresponding end 231B and terminating in connection with the second side wall 23.

[0038] As visible from figure 11B, in which the first projection 221 is shown specularly identical to the second projection 231, the first section 221A has a horizontal extension while the second section 221C has an oblique extension which, from the corresponding first section 221A, is joined to the respective first side wall 21.

[0039] The distance D subtended between the ends 221B and 231B is less than a transverse length L of the bottom portion 24 of the box-shaped body measured as the distance between the side walls 22,23. Thanks to the distance subtended between the ends of the two recesses 221,231 and thanks to the divergent conformation of the side walls 22,23 it is possible to achieve a stacking among containers 1 as will be better described below.

[0040] At the base of the bottom wall 21, on the side opposite to the side facing the collection volume VR, there is a base 5. Said base 5 provides a pair of tubular sections 51 connected to the bottom wall 21. As visible from figure 1, the tubular sections 51, thus the base 5, are connected to the upper plane 210 and have a section, opposite to the one facing the connecting wall 212, placed cantilevered. The tubular sections 51 have a rectangular section to be forked by the forks of a lift truck for possible lifting operations of the container 1.

[0041] In other words, the container 1 can be lifted through the forks of a lift truck which are insertable into the pair of tubular sections 51 or which is insertable into the first and second pairs of windows 220, 230.

[0042] At the base of the bottom wall 21, always on the side opposite to the side of the bottom wall 21 facing the inside of the collection volume VR, there is a plurality of swivelling wheels 3 adapted to allow displacements of the container 1 on a support surface P.

[0043] More in particular the plurality of swivelling wheels 3 is divided into a first pair of anterior wheels 31, connected to the bottom wall 21 at the lower plane 211, and a pair of rear wheels 32 connected to the base 5 with arrangement of each rear wheel 32 on a respective tubular section 51.

[0044] The box-shaped body 2 is preferably connected to the base 5 with a hinged connection.

[0045] At an upper region of the rear wall 24, always on the opposite side with respect to the collection volume VR, there is a handle 4 to favour a tilting point of the container 1 during the operations of displacing the same along the support surface P.

[0046] The plurality of swivelling wheels 3, handle 4 and base 5 define a set of accessories 10 of the container 1 that can be reversibly mounted to and dismounted from the container itself.

[0047] The container 1 also has an overturning system 6, of a substantially known type, activatable by an operator when the container is lifted by the forks of the lift truck at a height higher than the support surface P to carry out an overturning and emptying manoeuvre of the same. The overturning system 6 can also be included in the mentioned set of accessories 10.

[0048] The overturning system 6 consists of a locking hook 60 to be engaged on the rear wall 24 and a corresponding lever 61 hinged to the base 5. Upon rotation of the lever 61, a disengagement of the locking hook 60 is carried out and the box-shaped body 2, unbalanced due to an accumulation of weight of waste material weighing down on the lower plane 212 and on the oblique front wall 25, induces a rotation of the box-shaped body 2 with respect to the coupling hinge between the box-shaped body 2 and the base 5. This operation, if carried out when the container 1 is forked by the forks of the lift truck, allows a rotation of the box-shaped body 2 with respect to the base 5, the latter being retained by the forks, implementing an emptying of the container 1.

[0049] A cam 62, hinged to the base 5 on the opposite side to where the lever 61 is located, and a shock absorbing piston 63, with stem connected to the cam 62, allow a delayed rotation of the container 1 from the overturned position to the horizontal position actuatable when it is wished to place the container 1 from the overturned position to the horizontal position.

[0050] The container 1 provides for an assembled configuration in which a base 5, handle 4 and a plurality of swivelling wheels 3 are mounted to the box-shaped body 2. In other words, in the assembled configuration the box-shaped body is equipped with the set of accessories 10. In a complete assembled configuration, the overturning system 6 also integrating the set of accessories can also be mounted on the box-shaped body 2.

[0051] In the assembled configuration, the container 1 can be placed on the support surface P to receive the waste materials or be moved on the support surface P to displace from one retracted position to another. Figures 1-5 illustrate the container 1 in the assembled configuration.

[0052] The container 1 also provides for a disassembled configuration in which the set of accessories 10, therefore plurality of wheels 3, handle 4, base 5 and overturning system 6 (if present), is dismounted from the box-shaped body 2. In this configuration the container 1 can be prepared for packaging.

[0053] Figure 6 illustrates, in exploded view, the container 1 in the disassembled configuration.

[0054] By effect of the first and second projections 221 , 231 it is possible to achieve a stacking of a plurality of containers 100.

[0055] By withdrawing a second container 1' in the disassembled configuration, identical to another container 1, it is possible to stack the same inside the container 1, also preferably in the disassembled configuration.

[0056] In particular, it is possible to insert the second container 1' inside the first container 1, more precisely inside the upper chamber CS, by resting the bottom wall 21' of the second container 1' on first and second projections 221, 231 of the first container 1.

[0057] At the moment when the bottom wall 21' of the second container 1' comes to rest with the first and second projections 221, 231 the lower chamber CI becomes a closed chamber. Said lower chamber CI is subtended laterally by the portions of the side walls 22, 23, below the respective first and second projections 221, 231 belonging to the first container 1, and at the bottom by the bottom wall 21 of the first container 1. Said lower chamber CI becomes closed by effect of the bottom wall 21' of the second container 1' placed resting on the first and second projections 221,231.

[0058] Inside the lower chamber CI it is possible to stow at least the plurality of wheels 3, the handle 4 and the base 5, belonging to the first container 1 below, in the stack of containers, to the second container 1'. Inside said lower chamber CI it is therefore possible to stow a first set of accessories 10 belonging to the container 1. Inside said lower chamber CI it is also possible to stow the overturning system 6. The overturning system 6 rounds up the set of accessories 10. The same components, belonging to the second container 1' can be inserted inside the lower chamber CI of the first container 1 or inside the collection compartment VR' of the second container 1'.

[0059] In this way, the lower chamber CI defines a containment volume that, in addition to protecting the components of the container 1 other than the box-shaped body 2, allows the realization of a single packaging for shipment.

[0060] The present invention also relates to a method for stacking a plurality of containers 100.

[0061] The method provides for a stacking of at least a first container 1 and a second container 1'.

[0062] The first container 1 provides a box-shaped body 2, defined by a bottom wall 21 to which a rear wall 24, a front wall 25 and a first and a second side wall 22,23 are connected, inside which a collection compartment VR is subtended. The first and second side walls 22, 23 being divergent from each other starting from the bottom wall 21. At the first side wall 22 there is a first projection 221 and at the second side wall 23 there is a second projection 231. The first and second projections 221, 231 being opposed to each other and projecting, from the respective side walls, towards the inside of the collection compartment VR. The first container 1 further provides at least one base, connected to the bottom part 21, a plurality of wheels 3, connected to the base 5, and a handle 4, connected to the rear wall 24.

[0063] Base, plurality of wheels 3 and handle 4 define a first set of accessories 10.

[0064] An overturning system 6 can also be included in said first set of accessories 10.

[0065] The second container 1' provides a corresponding box-shaped body 2', identical to the box-shaped body 2 of the first container 1, to which a corresponding set of accessories 10' is connectable comprising at least a plurality of wheels 3', a base 5' and a handle 4'.

[0066] This method provides for the following steps:

- arranging the first container 1 in a dismounted configuration, i.e. with the box-shaped body 2 disconnected from the corresponding set of accessories 10 comprising at least the plurality of wheels 3, the base 5 and the handle 4;
- arranging a second container 1', identical to the previous one, in a dismounted configuration, i.e. with the respective box-shaped body 2' disconnected from the corresponding set of accessories 10' comprising at least the plurality of wheels 3', the base 5' and the handle 4';
- placing the first set of accessories 10 of the first container 1 on the bottom wall 21 of the first container 1 and the set of accessories 10' of the second container 1' on the bottom wall 21' of the second container 1' or placing the first and second set of accessories 10,10' of the first and second container 1,1' on the bottom wall 21 of the first container 1;
- inserting the second container 1' inside the first container 1 until the bottom wall 21' of the second container 1 is placed in abutting contact with the first and second projection 221, 231 of the first container 1;
- wrapping the stack of containers 1, 1' with a protective covering material;

[0067] Said method may provide for the stacking of a number of containers greater than two according to the scheme and order described above.

[0068] Advantageously, the present invention is capable of overcoming the drawbacks which have emerged from the prior art.

[0069] Firstly, the packaging of a stack of containers takes place with a saving of space due to the placement of the set of accessories between one container and the other stacked together. In this way, the manufacturer can create a single packaging. The placement of the set of accessories 10 inside the respective lower chambers CI protects the integrity of the set of accessories themselves. In addition, the distribution of the set of accessories within respective closed volumes makes the stack of containers much more stable.

Claims

1. A container (1) for containing and transporting chips and other materials from mechanical and industrial processing waste, of the type comprising:

- a box-shaped body (2), internally defining a collection compartment (VR) open at the top, comprising:

  - a bottom wall (21), on which chips and other waste materials accumulate;
  - a first and a second side wall (22,23), extending upwards from the bottom wall (21) with a mutual progressively diverging trend towards the outside of the bottom wall (21);
  - a rear wall (24), connected at the side to a first and second side wall (22,23) and at the bottom to the bottom wall (21);
  - a front wall (25), connected to the bottom wall (24) and extending upwards therefrom obliquely away from the rear wall (24);

- a base (5) defined by a pair of tubular sections (51) connected to the bottom wall (21), on the opposite side to the collection compartment (VR), which can be forked by the forks of a lift truck to promote the lifting of the container by means of the lift truck;
- a plurality of swivelling wheels (3), connected to the base (5), to enable movements of the container (1) on a support surface (P);
- a handle (4) connected to the rear wall (24) to enable a gripping and manoeuvring point for an operator;

said base (5), said plurality of wheels (3) and said handle (4) forming a set of accessories (10) of the container (1);
said container (1) providing an assembled configuration, in which the set of accessories (10) is mounted on the box-shaped body (2), and a disassembled configuration, in which the group of accessories (10) is dismounted from the box-shaped body (2);
wherein said first side wall (22) provides a first projection (221), located inside the collection compartment (VR), extending from the first side wall (22) towards the second side wall (23) and wherein said second side wall (23) provides a second projection (231), located inside the collection compartment (VR), extending from the second side wall (23) towards the first side wall (22);
wherein a first and second projection (221,231) divide the collection compartment (VR) into an upper chamber (CS) and a lower chamber (CI), the upper chamber (CS) being configured to internally house a second container (1') identical to the previous one, in the disassembled configuration, and the lower chamber (CI) being configured to internally house a set of accessories (10) belonging to the container (1) or sets of accessories (10,10') belonging to the respective containers (1,1').

2. The container (1) according to claim 1, wherein the first or second projection (221,231) comprises:

- a first section (221A,231A) extending from the respective side wall (22,23) towards the inside of the collection compartment (VR) and terminating with a corresponding end (221B,231B);
- a second section (221C,231C) extending from the respective end (221B,231B) and terminating in connection to the corresponding side wall (22,23).

3. The container (1) according to claim 2 wherein each first section (221A,223A) has a substantially horizontal trend.

4. The container (1) according to claim 2, wherein the distance (D) subtended between the ends (221B,231B) is less than a transverse length (L) of the bottom wall (24) of the container (1) measured as the distance between the first and second side wall (22,23).

5. The container (1) according to claim 1, wherein said walls (21,22,23,24,25) are made of metal and said box-shaped body (2) is obtained by welding the ends of the walls (21,22,23,24,25).

6. The container (1) according to claim 5, wherein said first and second projection (221,223) are obtained by a process of folding the respective first and second wall (22,23).

7. The container (1) according to claim 1, wherein said plurality of wheels (3) is divided into a first pair of front wheels (31), connected on the bottom wall (24), and a pair of rear wheels (32) connected to the pair of tubular sections (5) each rear wheel (32) being connected to a respective tubular section (5).

8. The container (1) according to claim 1 further comprising an overturning system (6) of the type comprising:

- a locking hook (60) to be engaged on the rear wall (24) of the box-shaped body (2);
- a lever (61), hinged to the base (5), active on the locking hook (6) to promote, when activated, the disengagement of the locking hook (60) from the rear wall (24);
- a cam (62), hinged to the base (5) and rotationally abutting on the bottom wall (21), on the opposite side to the collection compartment (VR), movable from an inactive position, in which the cam (62) is resting below the bottom wall (21), to an activated position, in which the cam (62) is in contact with the bottom wall (21); said cam (62) being movable from the inactive position to the activated position during the rotation

of the container (1) from a horizontal position to an overturned position and vice versa;
- a shock absorbing piston (63) activatable by the cam (62), during the rotation of the latter from the active position to the inactive position, for delaying the rotation of the container (1) from the overturned position to the horizontal position; said overturning system (6) being part of the set of accessories (10).

9. A method for stacking a plurality of containers (100) comprising at least a first container (1) having a box-shaped body (2), defined by a bottom wall (21) to which a rear wall (24), a front wall (25) and a first and second side wall (22,23) are connected, inside which a collection compartment (VR) is subtended; first and second side wall (22,23) being mutually divergent starting from the bottom wall (21) and having, the first side wall (22) a first projection (221) and the second side wall (23) a second projection (231); the first and second projection (221,231) being mutually opposing and projecting, from the respective side walls (22,23), towards the inside of the collection compartment (VR); said container (1) providing at least one base (5), connected to the bottom wall (21), a plurality of wheels (3), connected to the base (5), and a handle (4), connected to the rear wall (24); the base (5), plurality of wheels (3) and handle (4) defining a first set of accessories (10); said plurality of containers (100) further comprising a second container (1') identical to the first container (1);
the method comprising the following steps:

- arranging the first container (1) in a dismounted configuration, in which the set of accessories (10) is dismounted from the box-shaped body (2);
- arranging the second container (1') in a dismounted configuration in which the corresponding set of accessories (10') is dismounted from the corresponding box-shaped body (2');
- placing the first set of accessories (10) of the first container (1) on the bottom wall (21) of the first container (1) and the set of accessories (10') of the second container (1') on the bottom wall (21') of the second container (1') or placing the first and second set of accessories (10,10') of the first and second container (1,1') on the bottom wall (21) of the first container (1);
- inserting the second container (1') inside the first container (1) until the bottom wall (21') of the second container (1 ') is placed in abutting contact with the first and second projection (221,231) of the first container (1);
- wrapping the containers (1,1') in a protective covering material.

10. The method for stacking a plurality of containers (100) according to claim 9 wherein the plurality of containers (100) envisages two or more containers.

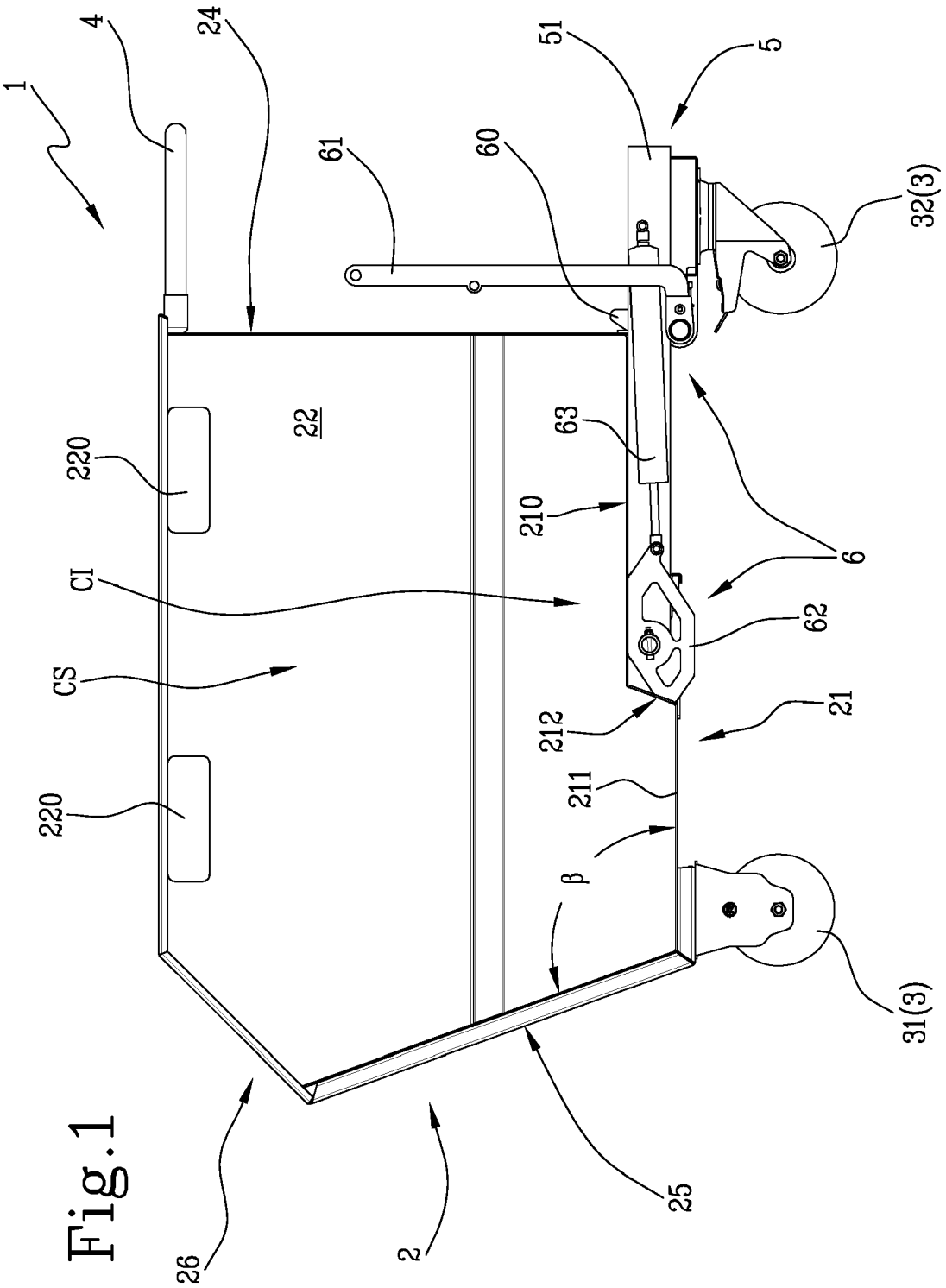
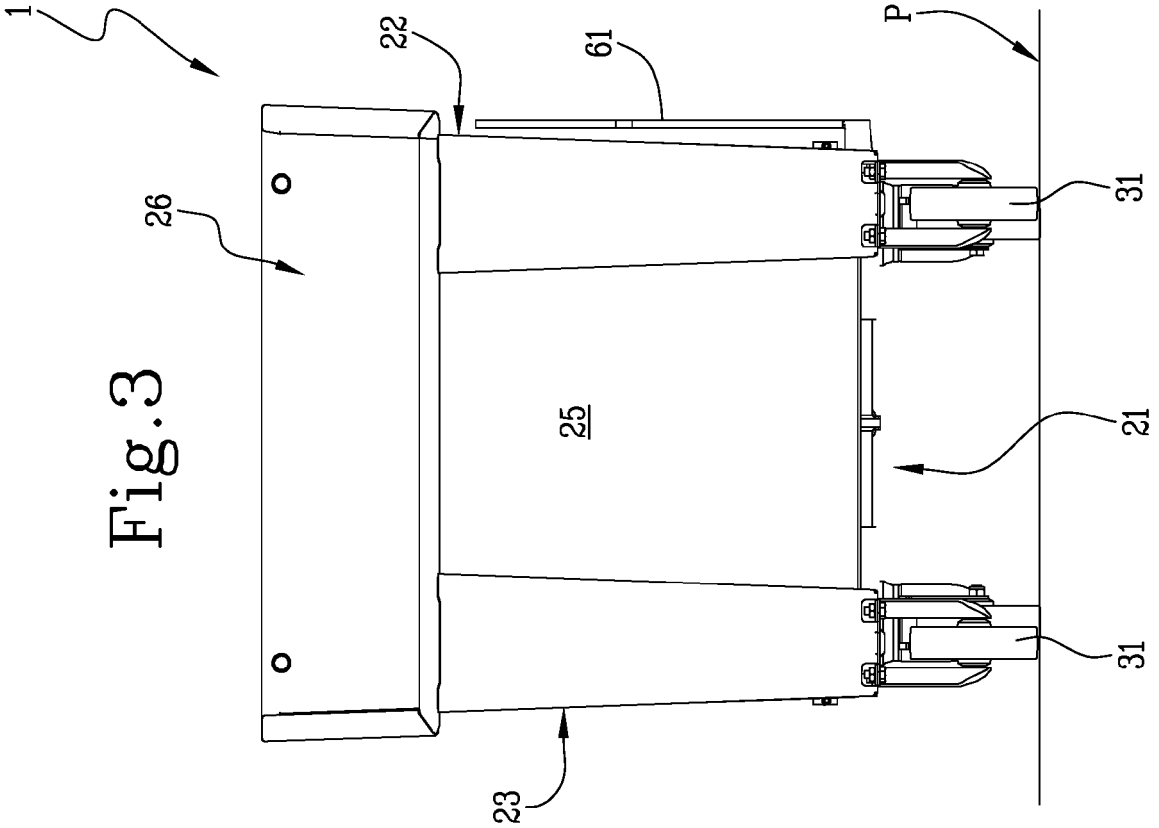

1
4
24
51
5
61
60
32(3)
22
63
220
210
6
CI
62
CS
212
21
220
211
β
31(3)
25
26
2

Fig.1

Fig.3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22
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P
26
31
25
21
31
23

Fig.2

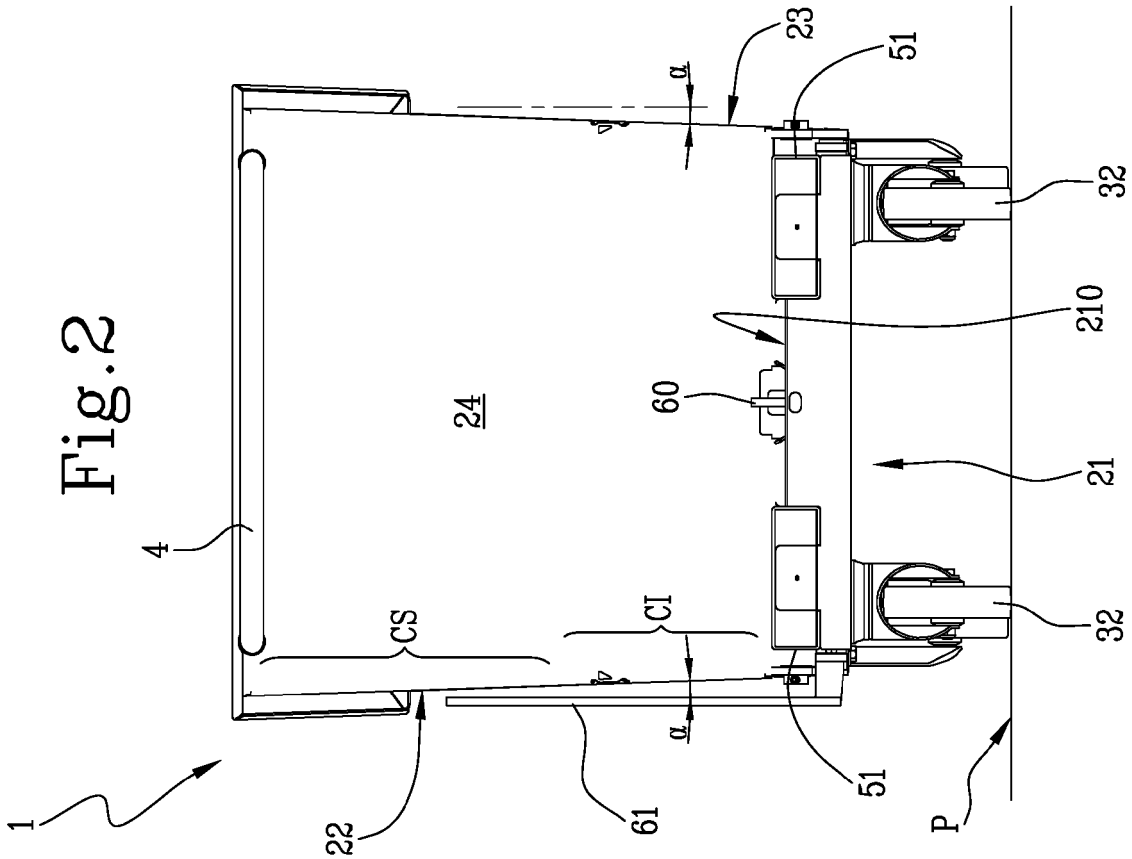
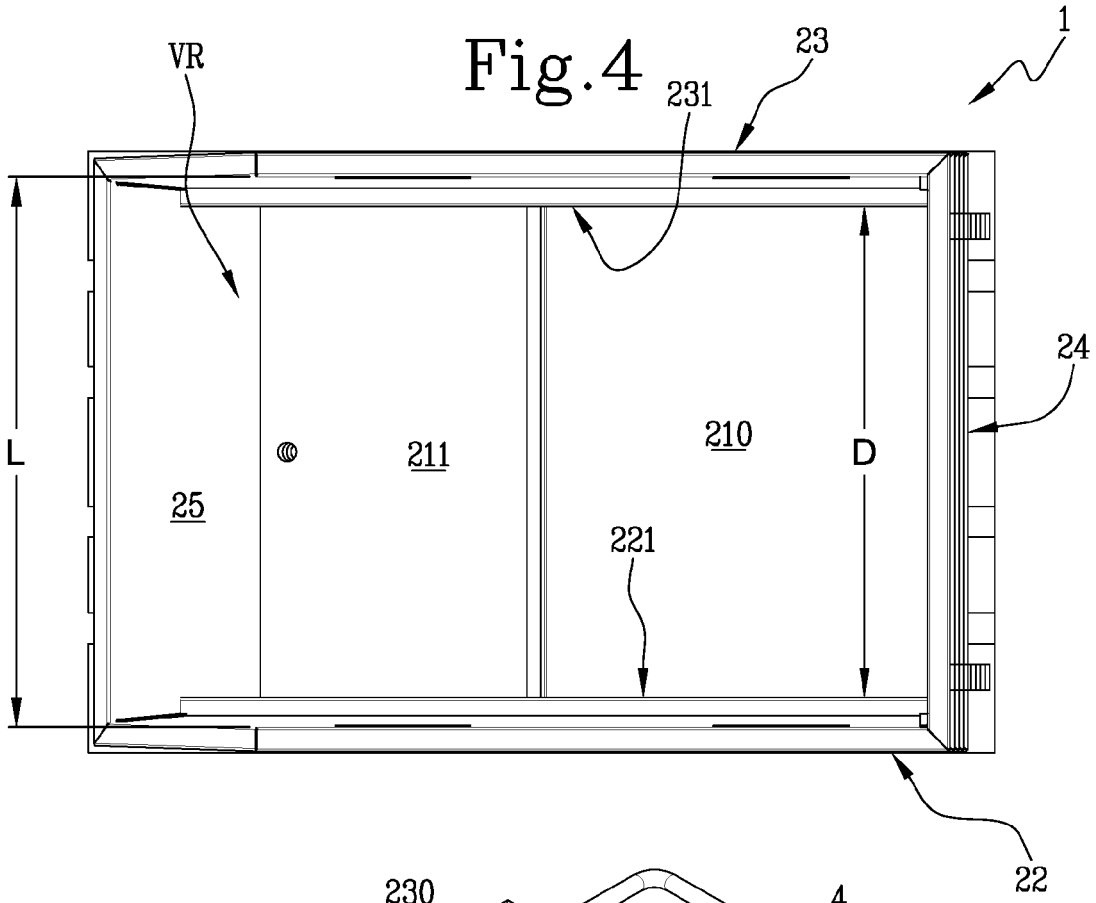

23
51
α
32
210
60
24
21
4
CS
CI
32
α
1
22
61
51
P

Fig.4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L
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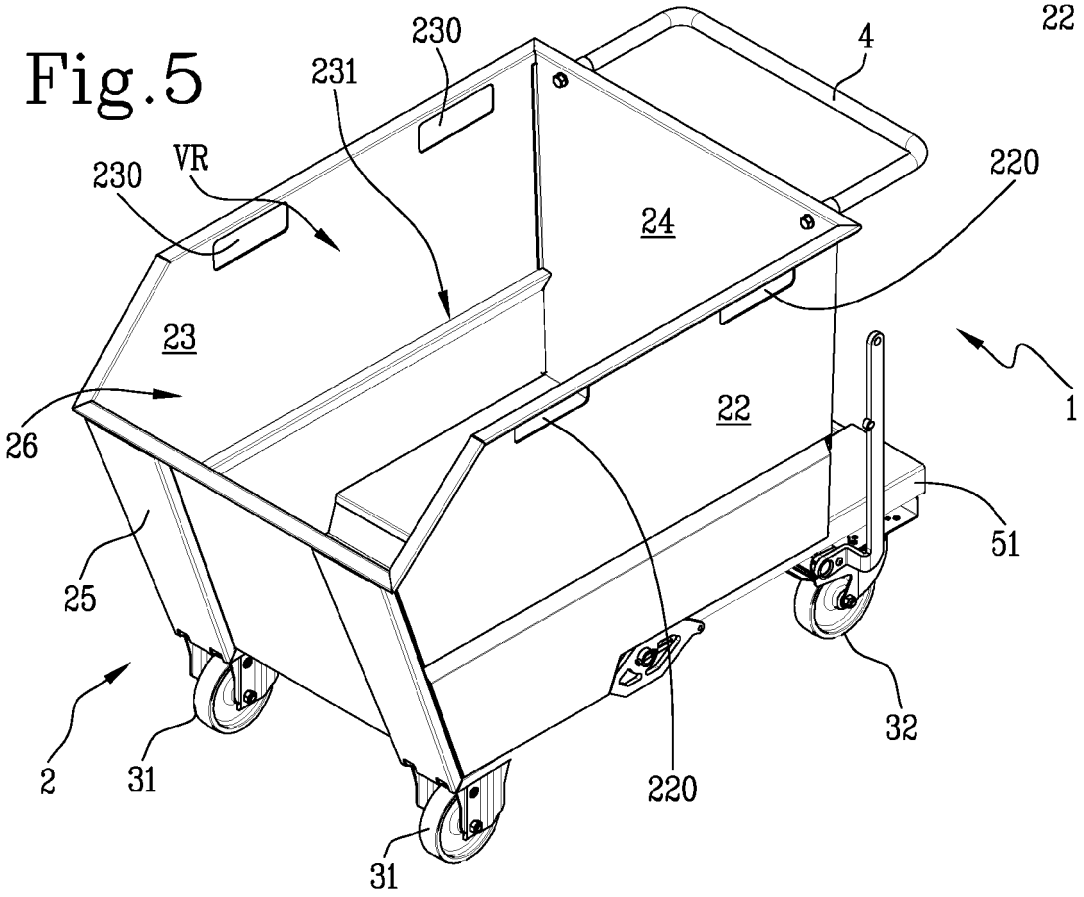
22

Fig.5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32
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31

Fig.6

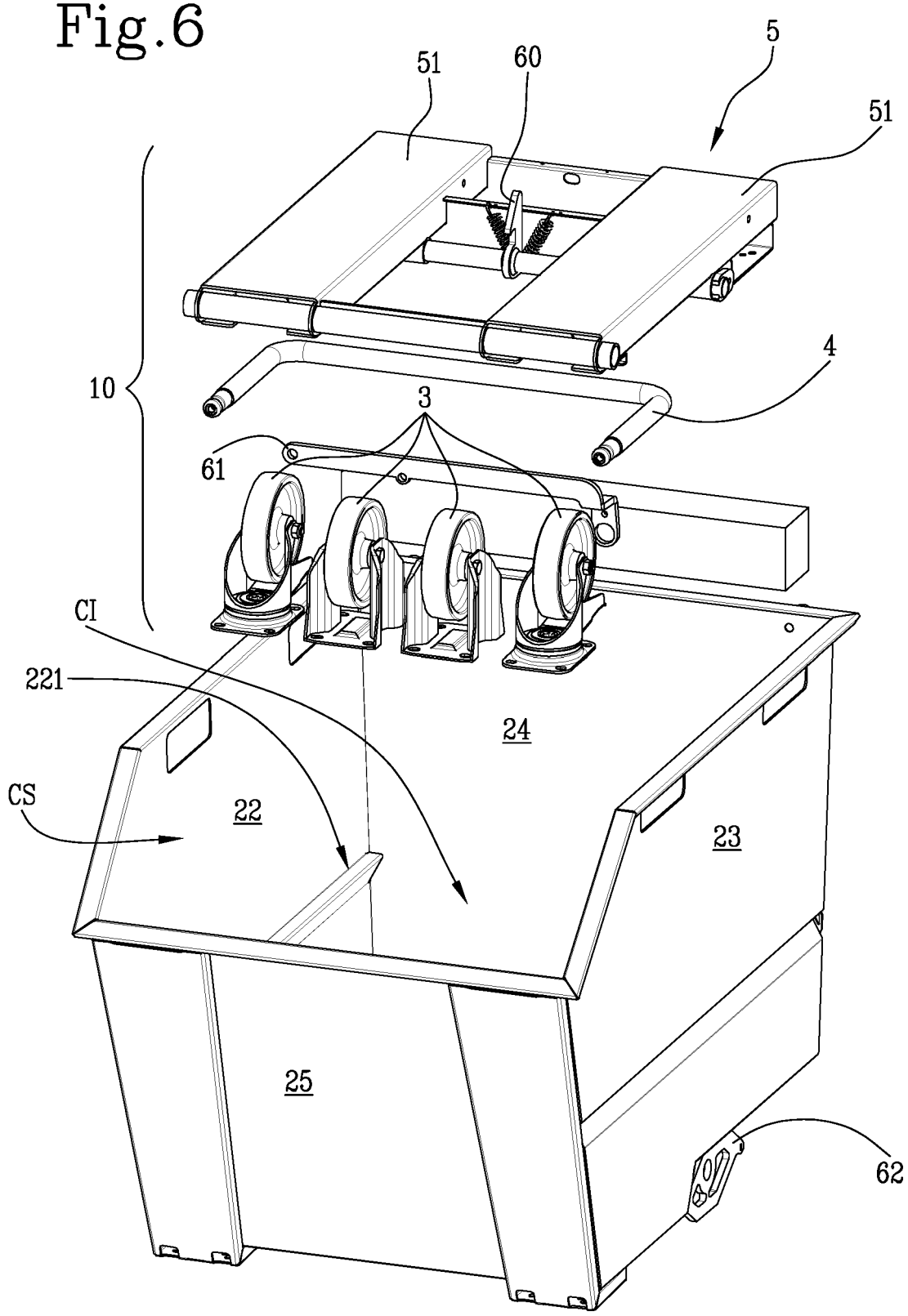


Fig.8

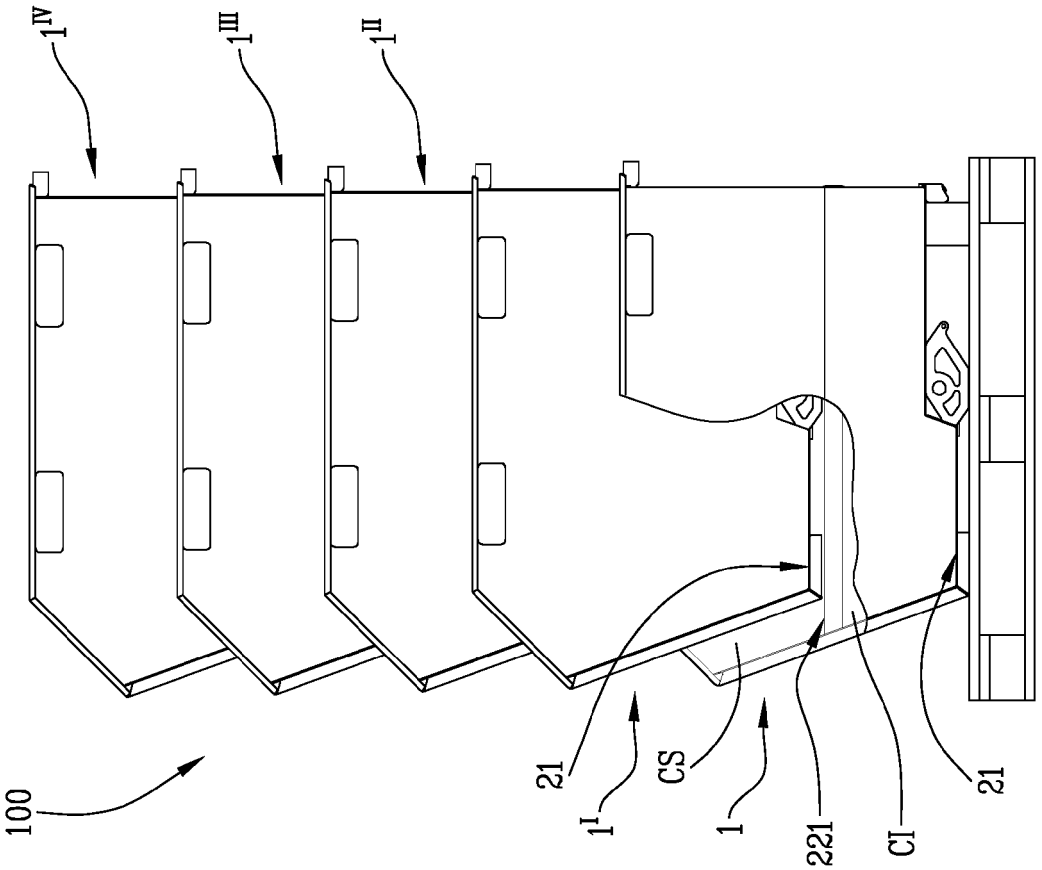


Fig.7

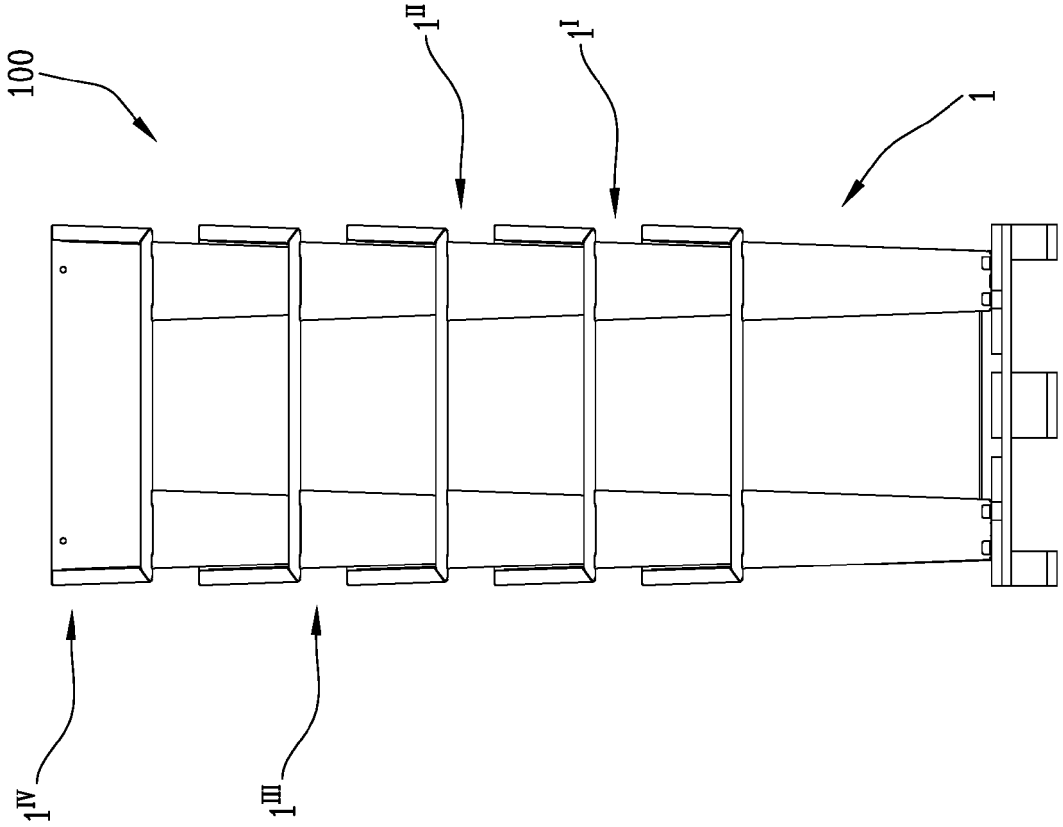
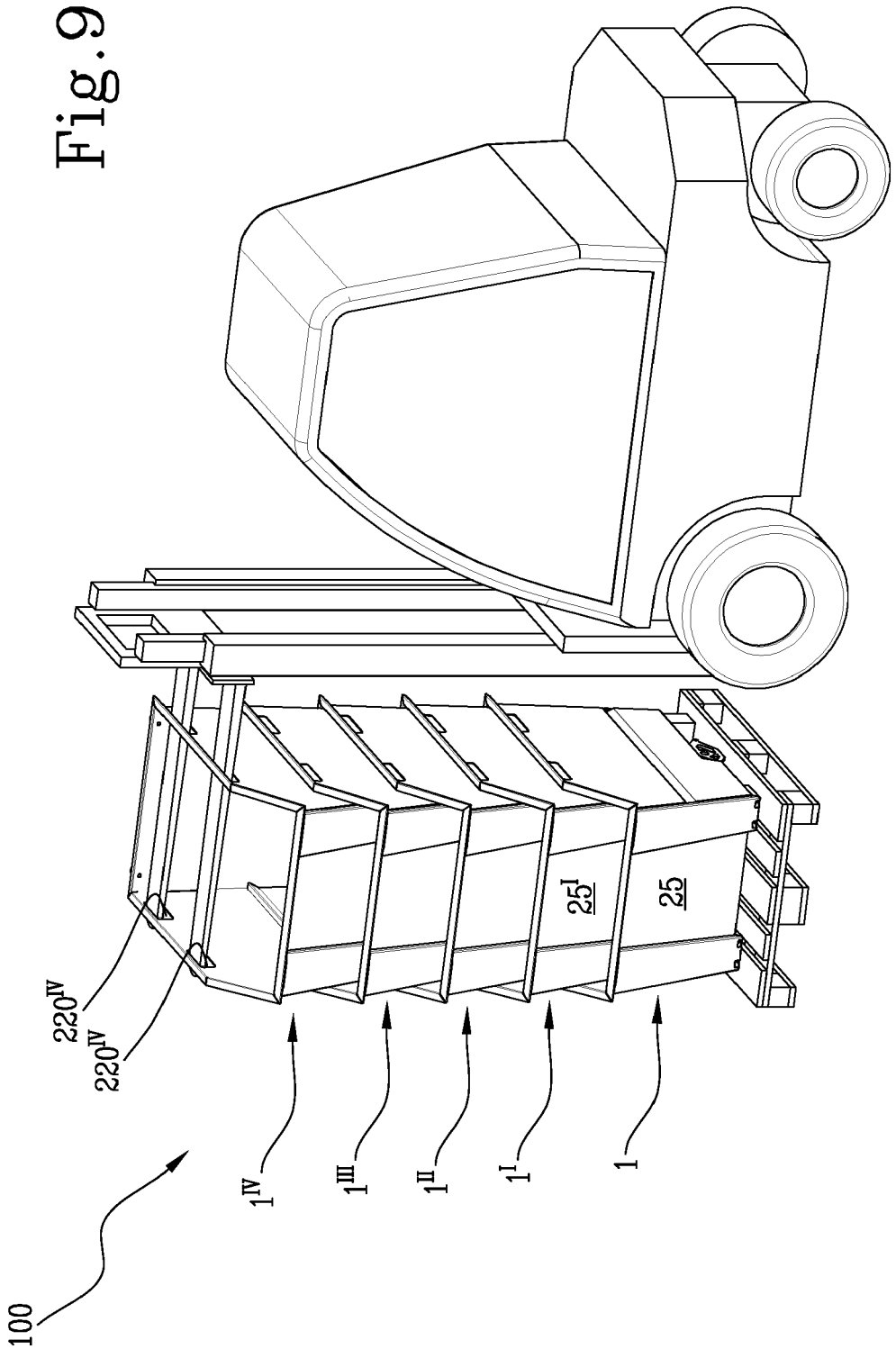


Fig.9



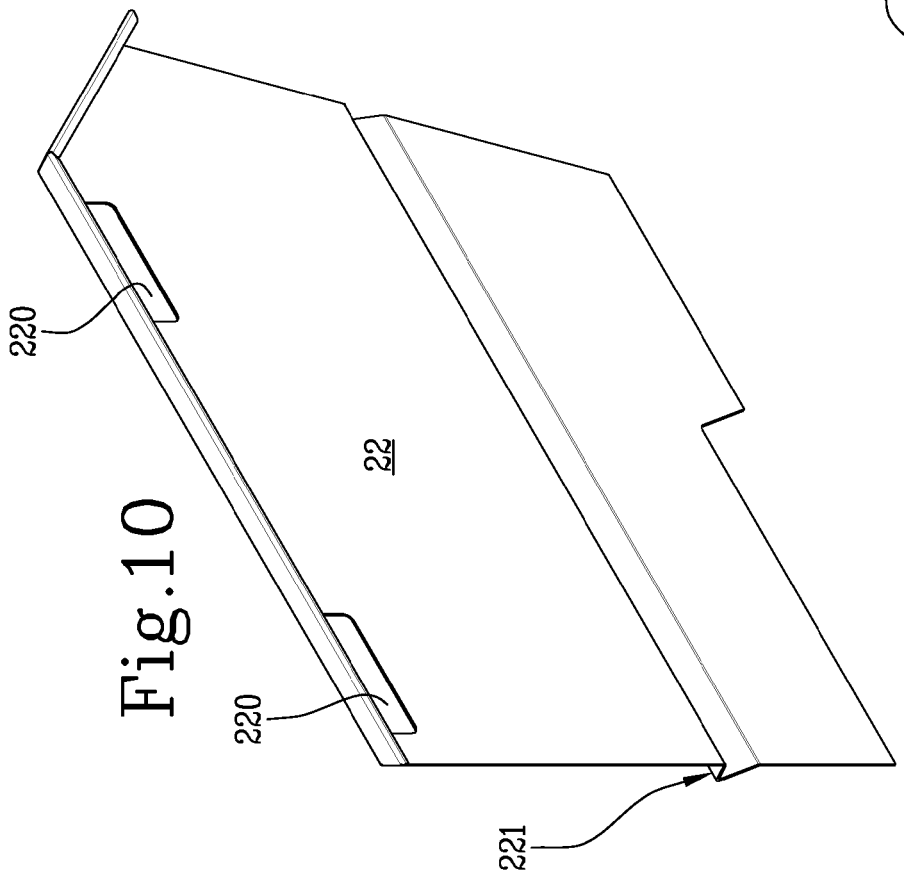


Fig.10

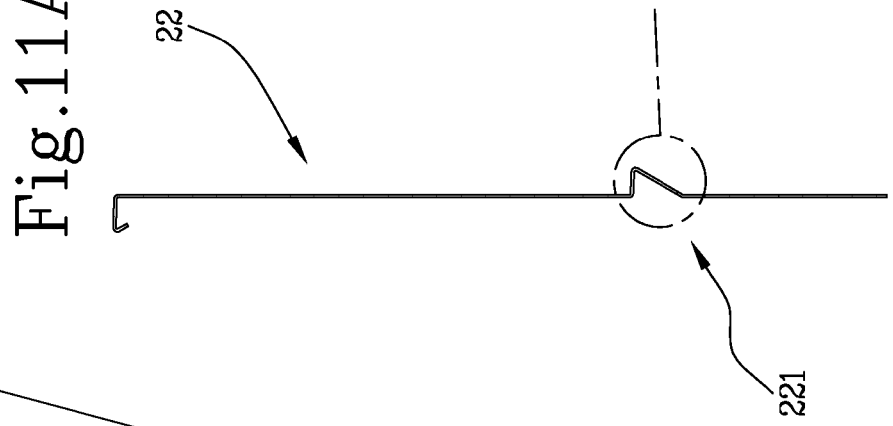


Fig.11A

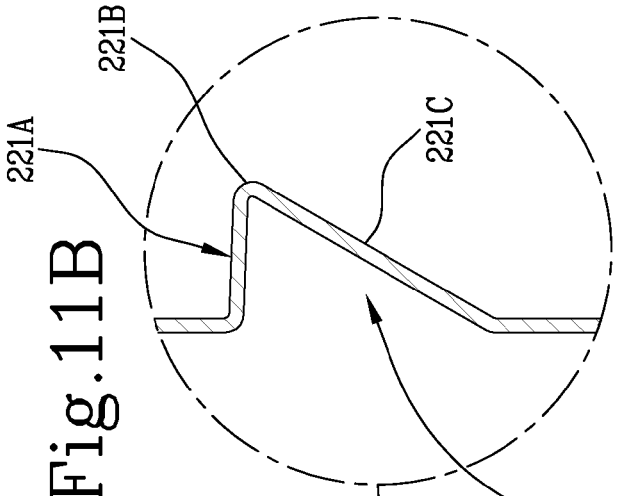


Fig.11B

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EUROPEAN SEARCH REPORT

Application Number
EP 23 18 7795

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	WO 2021/240351 A1 (SOLAZZI ENRICO E SOLAZZI GIANNI S N C [IT]) 2 December 2021 (2021-12-02) * figures 1-17 *	1-10	INV. B65F1/02 B65F1/14 B65D88/02 B65D88/12
A	US 2006/232029 A1 (PARKER BRIAN G [US] ET AL) 19 October 2006 (2006-10-19) * figure 7 *	1,9	B65D90/00 B65D90/18

TECHNICAL FIELDS SEARCHED (IPC)

B65F
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	20 December 2023	de Miscault, Xavier

CATEGORY OF CITED DOCUMENTS

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20-12-2023

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