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(54) **DEVICE FOR COMPARTMENTALISING A REFUSE BIN**

(57) There is disclosed a receptacle. In particular, there is disclosed a receptacle for household waste, for example a refuse bin such as a wheelie bin. The receptacle includes a body, the body being closed at a first end and open at an opposing second end, a wedge-shaped cross bar having an apex and a base, the wedge-shaped cross bar spanning the open end thereby defining a first and second opening; a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged to substantially close the first opening when the first lid is contiguous with a portion of the open end; and a second lid hingedly connected to the open end of the receptacle, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the body.

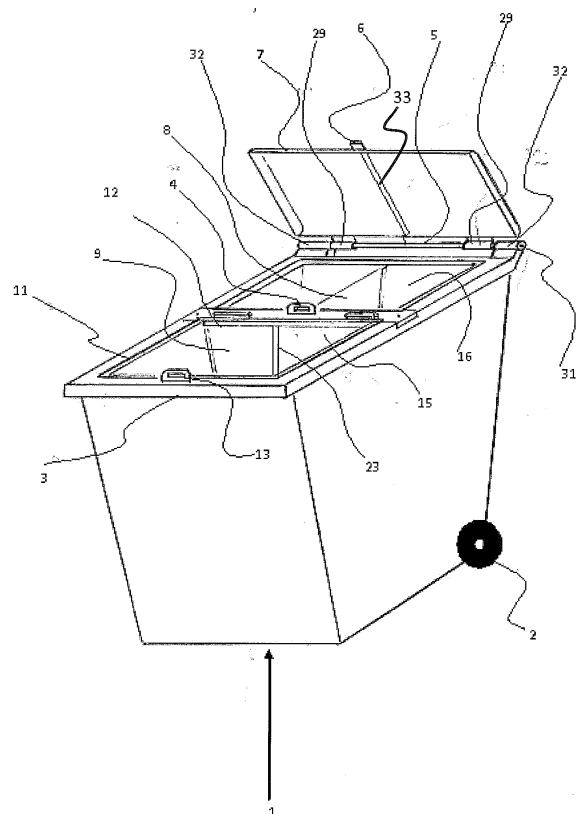


FIGURE 1

Description

[0001] There is disclosed a receptacle. In particular, there is disclosed a receptacle for household waste, for example a refuse bin such as a wheelie bin.

BACKGROUND

[0002] Refuse collection containers or 'wheelie bins' are in common use to hold and transport waste materials from the household to the kerbside for collection. These wheelie bins are typically emptied by a truck with either an arm-like mechanism with jaws, or a comb-like apparatus with a clamp. The established waste management practice is to put mixed waste into one bin and then empty that unsegregated waste into one waste collection lorry.

[0003] In more recent times new environmental legislation has given rise to the requirement that all householders must segregate their waste into such categories as non-recyclable waste, organic waste and recyclable waste, recyclable waste generally comprising paper, cardboard, glass, metal and plastic. As such the established practice of not segregating waste cannot continue.

[0004] This new reality has given rise to new methods for dealing with segregated household waste as follows:

- Use several wheelie bins, each being collected on the same day
- Use a mix of bin(s) and bag(s)
- Use bin and Crates and/or boxes
- Use several bins, each collected on a different week

[0005] This variety of options is of some value in that it allows for the segregation of different waste materials. However, the resultant multiplicity of bags, boxes, crates and bins tends to clutter pavements and narrow streets, encumbering pedestrians, motorists and even the bin collection lorries. This clutter can be hazardous and a nuisance. A further hazard occurs when the refuse collectors have to manually lift the bags, crates and boxes of recyclables and/or general waste. These containers may be very light or very heavy - they are unspecified weights, and as such contravene current EU health and safety legislation regarding manual lifting of unspecified weights.

[0006] AU 678 918 B2 discloses a compartmentalised wheelie bin for collection and storage of household waste. However, the compartmentalised wheelie bin does not appear to be suitable for use with existing refuse vehicles.

[0007] EP 0 634 344 A1 discloses a compartmentalised wheeled bin with a plurality of lids, said lids pivot toward the front of the wheeled bin, and wherein either lid may be locked by a locking member.

[0008] GB 2 474 874 A discloses a dividing insert with

attached lids which pivot toward the sides of the wheeled bin rather than toward the front of the bin.

[0009] DE 41 23 458 A1 discloses a wheeled bin with a plurality of compartments under a plurality of lids. The compartments may be comprised of a plurality of small bins which are placed inside the wheeled bin. This wheelie bin cannot be emptied using conventional waste management collection vehicles.

[0010] IE 86119 B1 discloses a wheeled bin having two lids for separate compartments.

BRIEF SUMMARY OF THE DISCLOSURE

[0011] In accordance with a first aspect there is disclosed a receptacle for recyclable waste, the receptacle comprising:

a body, the body being closed at a first end and open at an opposing second end;

a wedge-shaped cross bar having an apex and a base, the wedge-shaped cross bar spanning the open end thereby defining a first and a second opening;

a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged to substantially close the first opening when the first lid is contiguous with a portion of the open end; and

a second lid hingedly connected to the open end of the receptacle, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the body.

[0012] An advantage of the receptacle is that the wedge-shaped cross bar acts to prevent waste from getting stuck in the cross bar in use. The wedge-shaped cross bar forms a funnelling surface to deflect waste away from the cross bar as it is emptied from the receptacle.

[0013] Optionally, the cross bar is provided with a ridge for receiving and supporting the second lid when the second opening is closed by the second lid.

[0014] Optionally, the receptacle is provided with a ridge for receiving and supporting the first lid when the first opening is closed by the first lid.

[0015] An advantage of the receptacle is that the first and second lids are able to close flush with the open end, to thereby close the receptacle. This reduces the release of odours into the environment from inside the receptacle.

[0016] The ridges provide seals for the lids which reduce the release of odours into the environment, limit ingress of rain water into the receptacle and limit cross-contamination of waste.

[0017] Optionally, the cross bar is provided with a di-

dividing wall extending from the apex towards a base of the body so that the first and second openings define first and second compartments in the receptacle. The dividing wall may be inserted into the receptacle and may be held at the apex of the cross bar using a fastening element.

[0018] The body may be provided with a number of elongate channels or slots configured to accept and support a portion of a perimeter of the dividing wall.

[0019] Optionally, the first and second compartments may be sub-divided using additional dividing walls or sub-dividing walls. In one example, the sub-dividing walls extend beyond the external walls of the body to form a seal with an underside of the first or the second lid.

[0020] In one example, the first and/or the second lid are replaced by first and second sub-lids configured to seal the sub-compartments. Multiple lids may be used to close multiple compartments. In another arrangement, the sub-lids are provided with complementary closures configured to couple with a portion of the sub-dividing wall so as to form a sealed sub-compartment that prevents cross-contamination of waste.

[0021] Optionally, an attachment element is provided at the open end, the attachment element being configured for compatibility with a refuse vehicle lifting mechanism. The attachment element may be a slot for receiving a hook of the refuse vehicle lifting mechanism.

[0022] Optionally, the receptacle is further provided with wheels attached to an axle.

[0023] Optionally, the receptacle is further provided with a locking member. The locking member may be arranged to lock either the first lid, the second lid, or both the first and second lids simultaneously. The locking member may be arranged to lock each lid in a closed position or an open position. Alternatively, the locking member may be arranged to lock both lids in a closed position or an open position.

[0024] A benefit of the locking member is that different compartments may be emptied independently of each other reducing the risk of cross-contamination of waste types.

[0025] The locking member may be a retractable elongate bar configured to slot into tracks provided in the cross bar and/or in the body.

[0026] In accordance with a second aspect there is disclosed a retro-fit compartmentalising device suitable for a standard wheelie bin, wherein the retro-fit compartmentalising device comprises:

a frame configured for attachment to a rim of the standard wheelie bin;

a wedge-shaped cross bar having an apex and a base, the wedge-shaped cross bar spanning the open end thereby defining a first and a second opening;

a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged

to substantially close the first opening when the first lid is contiguous with a portion of the open end; and

a second lid hingedly connected to the open end of the receptacle, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the body.

[0027] An advantage of the retro-fit compartmentalising device is that the device provides a compartmentalising device able to compartmentalise a standard receptacle such as a wheelie bin. The first and second lids are able to close flush with the open end of the wheelie bin to thereby close the bin. This reduces the release of odours into the environment from inside the bin and allows a cost effective and easy means of compartmentalising an existing bin. Furthermore, the cross bar supports the hinged mechanism of the first lid and forms a funnel surface for egress of rubbish during emptying.

[0028] Optionally, the compartmentalising device may be provided with an insert for inserting into the standard wheelie bin, wherein the insert includes channels for receiving a dividing wall.

BRIEF DESCRIPTION OF THE DRAWINGS

[0029] Embodiments are further described hereinafter with reference to the accompanying drawings, in which:

Figure 1 shows a three dimensional view of an example of a receptacle;

Figure 2 shows a side view of an example of a receptacle;

Figure 3 shows a view of an example of a cross bar;

Figure 4 shows a side view of an example of a receptacle having first and second lids in the open position;

Figure 5 shows a side view of an example of a receptacle having first and second lids in the closed position;

Figure 6 shows a three dimensional view of an example of a receptacle having first and second lids in the open position;

Figure 7 shows of an example a lid and a locking member;

Figure 8 shows of an example of a cross bar and a dividing wall;

Figure 9 shows an expanded view of an example of a cross bar, dividing wall and a receptacle;

Figure 10 shows a side view of an example of a receptacle.

DETAILED DESCRIPTION

[0030] The receptacle is suitable for waste, for example a refuse bin such as a wheeled bin or a wheelie bin. Figure 1 and Figure 2 show an example of the receptacle 1. The receptacle includes wheels 2 and is tapered, being widest at its top and narrowing to its lower end, its lower end being that part of the receptacle which touches the ground when the receptacle is in an upright position.

[0031] Specifically, the receptacle 1 includes at least two compartments 15, 16, each compartment having its own independently operated lid 7, 10 (lid 10 is shown in Figure 2). The compartments may be further divided into sub-compartments and an example of how this is achieved is shown in Figure 1. The rearmost compartment 16 is provided with a divider 18, which is configured to slot into a channel in a side wall of the receptacle 1.

[0032] The compartments are configured for storing household waste and the compartments allow the user to sort the waste as the user is depositing the waste in the receptacle 1.

[0033] The hollow interior region of the receptacle 1 is divided into two main compartments, (one compartment 15 to the fore of the receptacle 1, one compartment 16 to the rear of the receptacle) by a dividing wall 9. The dividing wall 9 is tapered to complement the internal shape of the receptacle 1. Furthermore, slots 23 are located on the inside of the receptacle into which the dividing wall 9 fits. These slots 23 receive the dividing wall 9 and secure the dividing wall 9 in place.

[0034] The dividing wall 9 is further secured in place by a dividing insert cross bar.

[0035] Once the dividing wall 9 has been inserted into the receptacle recesses, the cross bar 12 is then placed atop the dividing wall 9 and the cross bar 12 is then attached in place using the cross bar bolts 20 as shown in Figure 2.

[0036] Figure 3 shows the cross bar 12 in more detail. The cross bar 12 includes at its front face, a series of protruding members 25, each of which protruding members 25 has a bolt hole 26, these members are designed to intermesh with a counterpart series of similar members on the proximal end of the foremost lid 10 to form a hinge 24, 25 about which the foremost lid pivots. The cross bar 12 is substantially wedge-shaped having an apex 12' and a base or face 12". The wedge-shaped cross bar 12 provides a funnelled surface to facilitate waste egress from the compartments when the receptacle is emptied (by turning the receptacle upside down). The wedge is intended to prevent waste from getting stuck underneath the cross bar.

[0037] The rear face of the cross bar comprises a lock-

ing member 4 which is intended to receive a counterpart locking member 6 on the distal end of the rear lid 7.

[0038] The two main compartments 15, 16 are provided with independently operated closing members, or lids 7, 10 as show in Figure 2. The foremost lid pivots about a hinge, the rear lid pivots about a hinge member which is intended to act as a handle for the receptacle.

[0039] Furthermore, the lids are outwardly convex such that when the lids are in a closed position, relative to their respective compartments, and the receptacle is in an upright position, the lids allow for water runoff thus, keeping the inside of the receptacle (and any materials therein) dry.

[0040] This water-resistant affect is further achieved through the presence of a protruding ridge 11 around the mouth of each main compartment, each of which protruding ridges fits inside its respective compartment lid 7, 10. The inside of the lids 7, 10 are inwardly concave and the leading edge of the inwardly concave lids encircles the protruding ridge 11 of their respective compartment 15, 16 when the lids are in a closed position relative to their respective compartments 15, 16.

[0041] The lid of either compartment includes a locking mechanism.

[0042] Figure 4 shows the locking members. The locking member 14 on the distal end of on the foremost lid 10 is received by a counterpart locking member 13 on the front face of the receptacle 1. These locking members 13, 14 lock the foremost lid 10 in a closed position relative to the front compartment 9.

[0043] The locking member 6 on the rear lid 7 is received by a counterpart locking member 4 on the rear of the cross bar 12. These locking members 4, 6 lock the rear lid 7 in a closed position relative to the rear compartment 16.

[0044] The locking member 27 on the rear lid 7 is received by a counterpart locking member 28 on the back face of the receptacle 1, positioned between the steering handle 5 and the wheels 2. These locking members 27, 28 lock the rear lid 7 in an open position relative to the rear compartment 16, during the emptying of the rear compartment 16.

[0045] Figure 5 shows a rear view highlighting the rear lid lock-O 27 and the rear lid lock-O receiving member 28, protruding elements on the rear lid 29, rear lid hinging bar 30, receptacle wheels 2, and the axle 22 for receptacle wheels.

[0046] Figure 6 shows the hinge mechanism for the lids 7, 10. The cross bar 12 resides across the receptacle 1, and provides structural support and attachment for the lid 10 in the closed position. The protruding elements 32 provide an attachment point for the lid 7, and the cross bar further includes bolt holes 26 for securing the cross bar 12 to the receptacle. The cross bar also includes a rear lid lock receiving member 4. The rear compartment lid lock locks the rear lid in a closed position relative to the rear main compartment when the rear lid lock receiving member 4 engages with the locking member 6.

[0047] The receptacle includes a locking member 13 for the first lid 10. The foremost compartment lid lock 13, 14, which locking member 14 is intended to lock the foremost lid 10 in a closed position relative to the foremost main compartment 15.

[0048] A sub-compartmentalising slot 23 is shown which is designed to receive a sub-dividing wall. The first lid is provided with an inner lid ridge 33 adapted to cooperate with the sub-dividing wall 8. The inner lid ridge 33 and the sub-dividing wall 8 cooperate when the lid is in the closed position to seal each of the sub-compartments.

[0049] It should be understood that the number of compartments or sub-compartments is dependent upon local refuse disposal regulations, and any number of compartments may be incorporated into the receptacle. For example, multiple cross bars may be used to form multiple compartments. Each cross bar is provided with a wedge shaped surface to funnel waste from lodging under the cross bar. Each compartment may be sub-divided any number of times. Each lid may be adapted so that it is independent operable.

[0050] A steering handle 5 is provided and is positioned to the rear of the receptacle; the steering handle 5 allows the receptacle to be steered by the user and the waste material collection service worker. The steering handle 5 is positioned at the top rear of the receptacle 1.

[0051] Figure 6 shows the cross bar 12 which has two main compartmentalising insert cross bar bolts 20. These cross bar bolts 20 hold the cross bar 12 in place.

[0052] The dividing wall 8 provides complete separation between the first and second compartments 15, 16. Figure 7 shows an example of a lid having an inner lid ridge 33. The inner lid ridge aligns with the top of a sub-dividing wall 8 and thereby creates a complete separation between sub-compartments which reside under the same lid 7, 10. The lid ridge 33 is intended to limit cross contamination of waste types between such sub-compartments under a locked lid when the bin is inverted for emptying of the compartments under another lid. In an alternative arrangement, the sub-dividing wall 8 extends beyond the external walls of the receptacle so as to provide a flush closure with the lid 7, 10 when the lid is in a closed position. In one example, the sub-dividing wall 8 and the inner lid ridge 33 may slide together to form a seal, and thereby overlap when the lid 7, 10 is in a closed position.

[0053] Figures 8 and 9 show the dividing wall inserts in more detail. The main compartmentalising insert 9 or dividing wall acts to separate the forward and rear compartments 15, 16. In some examples a further sub-dividing wall 8 is provided. The inserts 8, 9 are shaped so as to complement the shape of the receptacle. In one example, the inserts are tapered to complement a tapered receptacle. Multiple dividing walls may be incorporated into the receptacle by using multiple cross bars or similarly by using multiple sub-dividing walls 8 within each compartment 15, 16 depending upon user requirements.

[0054] The main compartmentalising insert 9 is flared at its upper edge, the upper edge being that part which, when the compartmentalising insert is in place, aligns to the upward facing open mouth of the receptacle 1. The lower end of the main compartmentalising insert 9 narrows to match the tapered shape of the receptacle 1.

[0055] Further, the sub-dividing wall 8 is tapered on one side, the taper being on that face of the sub-dividing wall 8 which faces toward the inner wall of the receptacle 1.

[0056] Furthermore, the dividing walls 8, 9 will extend from the open mouth of the receptacle 1 to the base of the receptacle such that the division of the receptacle 1 or the sub-division of its compartments 15, 16 provides complete separation and not a partial separation.

[0057] Wheels 2 are provided to allow the receptacle 1 to be moved without recourse to lifting, said wheels 2 being fitted to an axle 22. The wheels 2 are secured to the bin with an axle 22 which is threaded through the lower rear of the receptacle 1 and runs the width of the receptacle 1.

[0058] A lifting lip 3 which allows the receptacle 1 to be picked up by the lifting mechanism of a waste collection lorry

[0059] Figure 10 shows a side view of the receptacle 1 with the lids open. The rear lid 7 is provided with locking members 27, 28 which lock the lid 7 in the open position.

[0060] A benefit of the receptacle is that it allows for ease of segregation and storage of household waste and recyclables by the householder

[0061] A further benefit of the receptacle is that it allows for ease of collection of household waste and recyclables by the waste collection service without recourse to building a special waste collection vehicle.

[0062] A further benefit of the receptacle is that it resolves the issues of how to secure the hinging of the foremost lid, and the locking of the rear lid.

[0063] A benefit of the receptacle is that it works by providing a purpose-built, wheelie bin which is comprised of two separate main compartments; each compartment is covered with its own hinged lid; such lids may be held open or closed through the use of a locking mechanism; and each of the two main compartments may be divided into sub-compartments.

[0064] The receptacle facilitates waste collection service workers to easily move the recyclables from the kerb-side to the waste collection lorry without any manual lifting of unspecified weights which potentially represents an lifting-injury hazard. The receptacle is lifted by a conventional waste collection lorry using conventional lifting mechanisms, again allowing the user to forego potentially injurious lifting, otherwise endured when lifting or emptying the waste bags, boxes, crates or bins into the waste collection lorry. The receptacle is intended to have multiple lids and any of the lids can be held open or closed during the lifting sequence through the use of a lid locks. It is intended that only one lid be open at a time during the lifting sequence.

[0065] During the emptying sequence, only one compartment or sub-compartment is emptied at a time. The other main compartment and any sub-compartments keep the waste in place under the locked lid.

[0066] Sub-dividing walls and inner lid ridges are intended to act together to prevent the cross-contamination of waste between the sub-compartments of a main compartment under a locked lid when the receptacle is upturned during the emptying sequence. The waste remains in the sub-compartments while another compartment or sub-compartment of are being emptied, thereby limiting any cross-contamination of waste during the emptying sequence.

[0067] In one example, a receptacle for waste is provided which has an upward facing open mouth and around the perimeter of this open mouth is a surrounding ridge, which ridge is broken by two recesses.

[0068] The receptacle is capable of being divided into two main compartments (a rear compartment and a foremost compartment) through the use of a dividing wall 9, which is tapered inwardly at its lower end and is flared at its top end (the top end of the dividing wall 9 aligning to the open mouth of the receptacle 1 when inserted into the receptacle 1), and either of which main compartments may be sub-divided into sub-compartments through the use of sub-dividing walls 8.

[0069] The receptacle 1 features slots intended to receive dividing walls 8, 9. The dividing wall 9 is further provided with additional slots to receive sub-dividing walls 8.

[0070] The two main compartments and any sub-compartments are intended to allow for the efficient and simple sorting of household waste, household recyclables and other waste in one wheelie bin. This one unit approach allows for the simplification of sorting of household wastes by the householder, ease of storage of household wastes, ease of movement of waste and recyclables from household to kerbside and the accessible collection of said wastes by waste collection service providers, while keeping the different types of waste segregated. Furthermore, the receptacle is a wheel-mounted bin with a steering handle, both the wheels and the steering handle allow for physical ease of movement of the bin. This allows the householder to wheel the wheelie bin to the kerbside, without any potentially injurious lifting, and it allows the waste collection operative to empty the wheelie bin without any potentially injurious lifting.

[0071] In one example, a pair of cross bar bolts are provided for holding the compartmentalising insert cross bar in place by securing it to the receptacle at a point directly above the dividing wall 9. The dividing wall is connected to the apex of the cross bar 12.

[0072] In another example, the dividing wall 9 assembly includes a cross bar 12 and two dividing wall grommets. The cross bar 12 fits into recesses in the receptacle 1, and the cross bar 12 is further provided with two closing ridges 21; one front facing toward the front main compartment 15, and one rear facing toward the rear main

compartment 16. Each closing ridge 21 closes off the breaks in the surrounding ridge 11 of the receptacle 1. The front facing closing ridge 21 closes off the break in the surrounding ridge and thereby forms a complete ridge around the foremost compartment 15. The rear facing closing ridge 21 closes off the break in the surrounding ridge 11 forming a complete ridge around the rear compartment 16. The cross bar 12 includes two bolt holes 26 which receive two bolts to secure the cross bar 12 in place. The forward or leading edge of this cross bar 12 is further provided with a series of protruding elements 25 each of which has a throughgoing aperture, such apertures configured to receive the compartmentalising insert bar 17.

[0073] In one example, two lids are provided. The foremost lid 10 has a series of protruding elements 24 at its proximal end, each of which protruding elements has an aperture, and each of which protruding elements are intended to intermesh with the protruding elements 25 on the front face of the cross bar 12.

[0074] These two sets of protruding members 24, 25 intermesh and the aligned throughgoing apertures receive the compartmentalising insert bar 17 which acts as a pivot point around which the foremost compartment lid 10 pivots.

[0075] The compartmentalising insert bar 17 is hollow, and is fixed in place with two compartmentalising insert grommets 18; one at either end of the bar.

[0076] The upper rear of the receptacle also has a series of protruding elements 32 as described above. When intermeshed, the protruding members 29 of the rear of the receptacle and the proximal end of the rear lid receive an insert bar 17 which secures the members to each other and forms a pivot point about which the rear compartment lid 7 rotates and simultaneously the insert bar 17 acts as a steering handle. Each lid of the receptacle is configured to cover one main compartment and any sub-compartments therein.

[0077] In one example, the compartment 16 is sub-divided using rear compartment sub-dividing wall 8, thus creating two sub-compartments, which are provided for different types of recyclable waste or non-recyclable waste.

[0078] In another example, the compartment 16 is sub-divided using two rear compartment sub-dividing wall 8. These two rear compartment sub-dividers are intended to run parallel to each other thus creating three sub-compartments provided for different types of recyclable waste or non-recyclable waste.

[0079] In another example, the compartment 16 is sub-divided using two rear compartment sub-dividing walls 8. These two rear compartment sub-dividers are intended to run at right angles to each other thus creating four sub-compartments which are provided for different types of recyclable waste or non-recyclable waste.

[0080] In another example, the compartment 16 is sub-divided using three rear compartment sub-dividing walls 8. Two rear compartment sub-dividers running parallel

to each other with a further sub-divider set at right angles to the first two, thus creating six sub-compartments provided for different types of recyclable waste or non-recyclable waste.

[0081] The compartment 15 may be sub-divided in the same manner as compartment 16.

[0082] In another example, the cross bar and dividing wall 9 are one single element rather than two elements to be attached together.

[0083] In another example, the cross bar is held in place with glue.

[0084] In another example, the cross bar is held in place with rivets.

[0085] In another example, the cross bar is held in place with an electronic weld.

[0086] In another example, the cross bar is held in place with snap joint.

[0087] In another example, the dividing insert bar and the rear lid bar are not hollow but have apertures at their ends to receive grommets which will secure the bars in place.

[0088] In another example, grommets are used in place of insert bars.

[0089] In another example, the compartments 15 and 16 and any sub-compartments may be differentiated by colour coding, brail and/or appropriate graphic images or symbols indicating different types of recyclable wastes or non-recyclable waste.

[0090] In another example, the receptacle 1 includes a housing to accommodate a computer chip for the purposes of tracking and weighing of the contents of the receptacle.

[0091] It will be clear to a person skilled in the art that features described in relation to any of the embodiments described above can be applicable interchangeably between the different embodiments. The embodiments described above are examples to illustrate various features of the receptacle.

[0092] Throughout the description and claims of this specification, the words "comprise" and "contain" and variations of them mean "including but not limited to", and they are not intended to (and do not) exclude other moieties, additives, components, integers or steps. Throughout the description and claims of this specification, the singular encompasses the plural unless the context otherwise requires. In particular, where the indefinite article is used, the specification is to be understood as contemplating plurality as well as singularity, unless the context requires otherwise.

[0093] Features, integers, characteristics, compounds, chemical moieties or groups described in conjunction with a particular aspect, embodiment or example of the invention are to be understood to be applicable to any other aspect, embodiment or example described herein unless incompatible therewith. All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be

combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive. The invention is not restricted to the details of any foregoing embodiments. The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

[0094] The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

[0095] The invention will now be described with reference to the following numbered statements of invention.

1. A receptacle for recyclable waste, the receptacle comprising: a body, the body being closed at a first end and open at an opposing second end; a wedge-shaped cross bar having an apex and a base, the wedge-shaped bar spanning the open end thereby defining a first and a second opening; a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged to substantially close the first opening when the first lid is contiguous with a portion of the open end; and a second lid hingedly connected to the open end of the receptacle, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the body.

2. A receptacle of statement 1, wherein the cross bar is provided with a ridge for receiving and supporting the second lid when the second opening is closed by the second lid.

3. A receptacle of statement 1 or 2, wherein the receptacle is provided with a ridge for receiving and supporting the first lid when the first opening is closed by the first lid.

4. A receptacle of any preceding statement, wherein the cross bar is provided with a dividing wall extending from the apex towards a base of the body so that the first and second openings define first and second compartments in the receptacle.

5. A receptacle of statement 4, wherein the dividing wall is inserted into the receptacle and is held at the apex of the cross bar using a fastening element.

6. A receptacle of statement 4 or 5, wherein the body is provided with a number of elongate channels or

slots configured to accept and support a portion of a perimeter of the dividing wall.

7. A receptacle of statement 4 to 6, wherein the first and second compartments are provided with subdividing walls to provide sub-compartments.

8. A receptacle of statement 7, wherein the subdividing walls extend beyond the external walls of the body to form a seal with an underside of the first or the second lid when the first of the second lid are in a closed position.

9. A receptacle of any preceding statement, wherein an attachment element is provided at the open end, the attachment element being configured for compatibility with a refuse vehicle lifting mechanism.

10. A receptacle of any preceding statement, wherein the receptacle is further provided with wheels attached to an axle.

11. A receptacle of any preceding statement, wherein the receptacle is further provided with a locking member.

12. A receptacle of statement 11, wherein the locking member is a retractable elongate bar configured to slot into tracks provided in the cross bar and/or in the body.

13. A retro-fit compartmentalising device suitable for a standard wheelie bin, wherein the retro-fit compartmentalising device comprises: a frame configured for attachment to a rim of the standard wheelie bin; a wedge-shaped cross bar having an apex and a base, the wedge-shaped cross bar spanning the open end thereby defining a first and a second opening; a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged to substantially close the first opening when the first lid is contiguous with a portion of the open end; and a second lid hingedly connected to the open end of the receptacle, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the body.

14. A retro-fit compartmentalising device of statement 13, further provided with an insert for inserting into the standard wheelie bin, wherein the insert includes channels for receiving a dividing wall.

15. A receptacle substantially as herein described, with reference to the accompanying drawings.

16. A retro-fit compartmentalising device substantially as herein described, with reference to the accompanying drawings.

Claims

1. A retro-fit compartmentalising device suitable for a standard wheelie bin, wherein the retro-fit compartmentalising device comprises:

a frame configured for attachment to a rim of the standard wheelie bin;
a wedge-shaped cross bar having an apex and a base, the wedge-shaped cross bar configured to span an open end of the wheelie bin thereby defining a first and a second opening;
a first lid hingedly connected to the base of the wedge-shaped cross bar, the first lid being arranged to substantially close the first opening when the first lid is contiguous with a portion of the open end; and
a second lid configured to be hingedly connected to the open end of the wheelie bin, the second lid being arranged to substantially close the second opening when the second lid is contiguous with a portion of the base of the wedge-shaped cross bar, and wherein the wedge-shaped cross bar is arranged such that the apex of the wedge-shaped cross bar is located in the wheelie bin when in use.

2. The retro-fit compartmentalising device according to claim 1, further provided with an insert for inserting into the standard wheelie bin, wherein the insert includes channels for receiving a dividing wall.

3. The retro-fit compartmentalising device according to claim 2, further comprising a dividing wall for insertion into the channels of the insert.

4. The retro-fit compartmentalising device according to any one of the preceding claims, wherein the cross bar provides a funnelled surface to facilitate waste egress.

5. The retro-fit compartmentalising device of any one of the preceding claims, wherein the cross bar comprises a locking member.

6. The retro-fit compartmentalising device of any one of the preceding claims, further comprising a subdividing wall configured to provide sub-compartments in the standard wheelie bin.

7. The retro-fit compartmentalising device of Claim 6, wherein the first lid and/or second lid comprises an inner lid ridge configured to align with the subdividing

wall.

8. The retro-fit compartmentalising device of Claim 6, wherein the sub-dividing wall is configured to extend beyond the rim of the standard wheelie bin to form a seal with an underside of the first and/or second lid.

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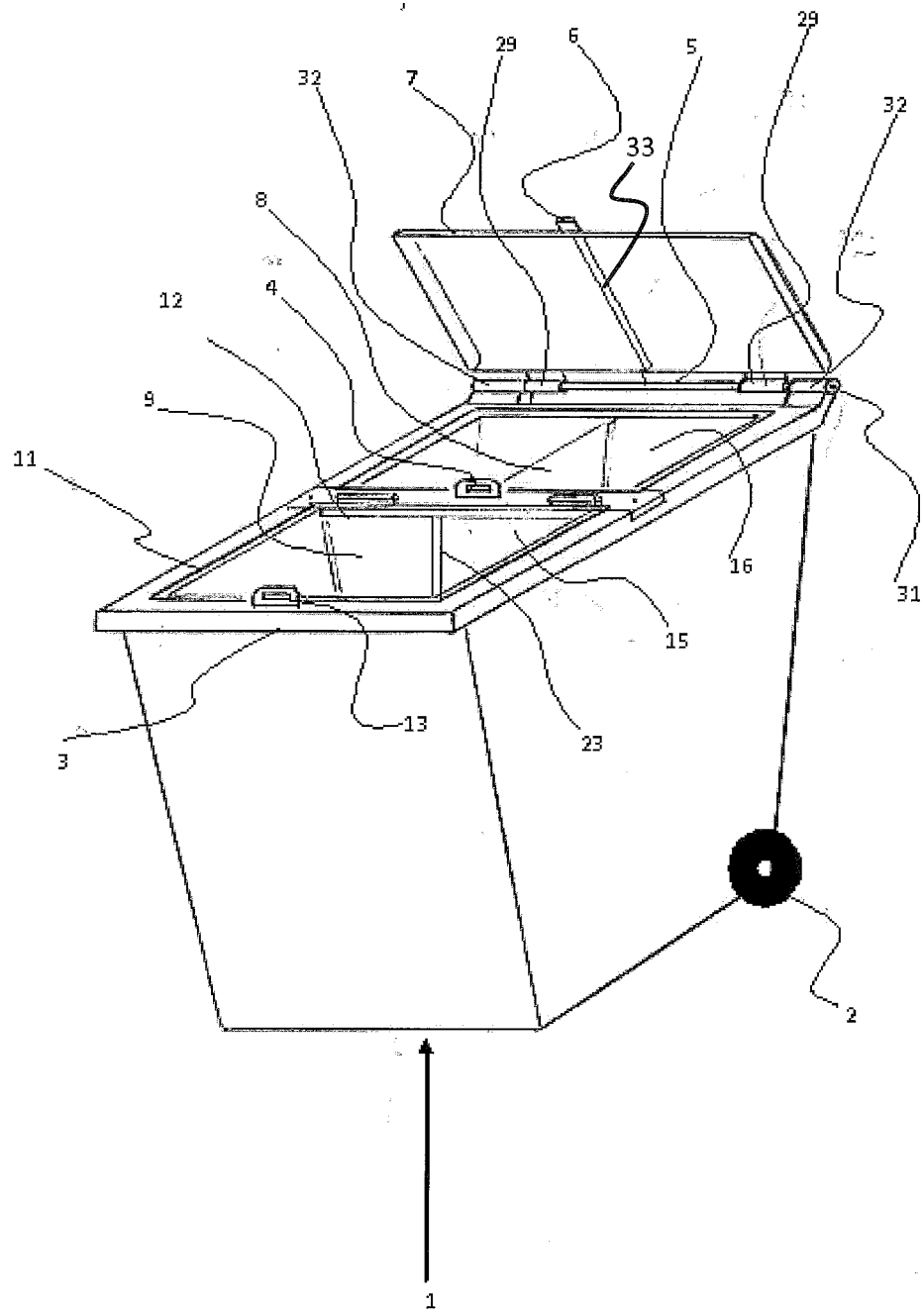


FIGURE 1

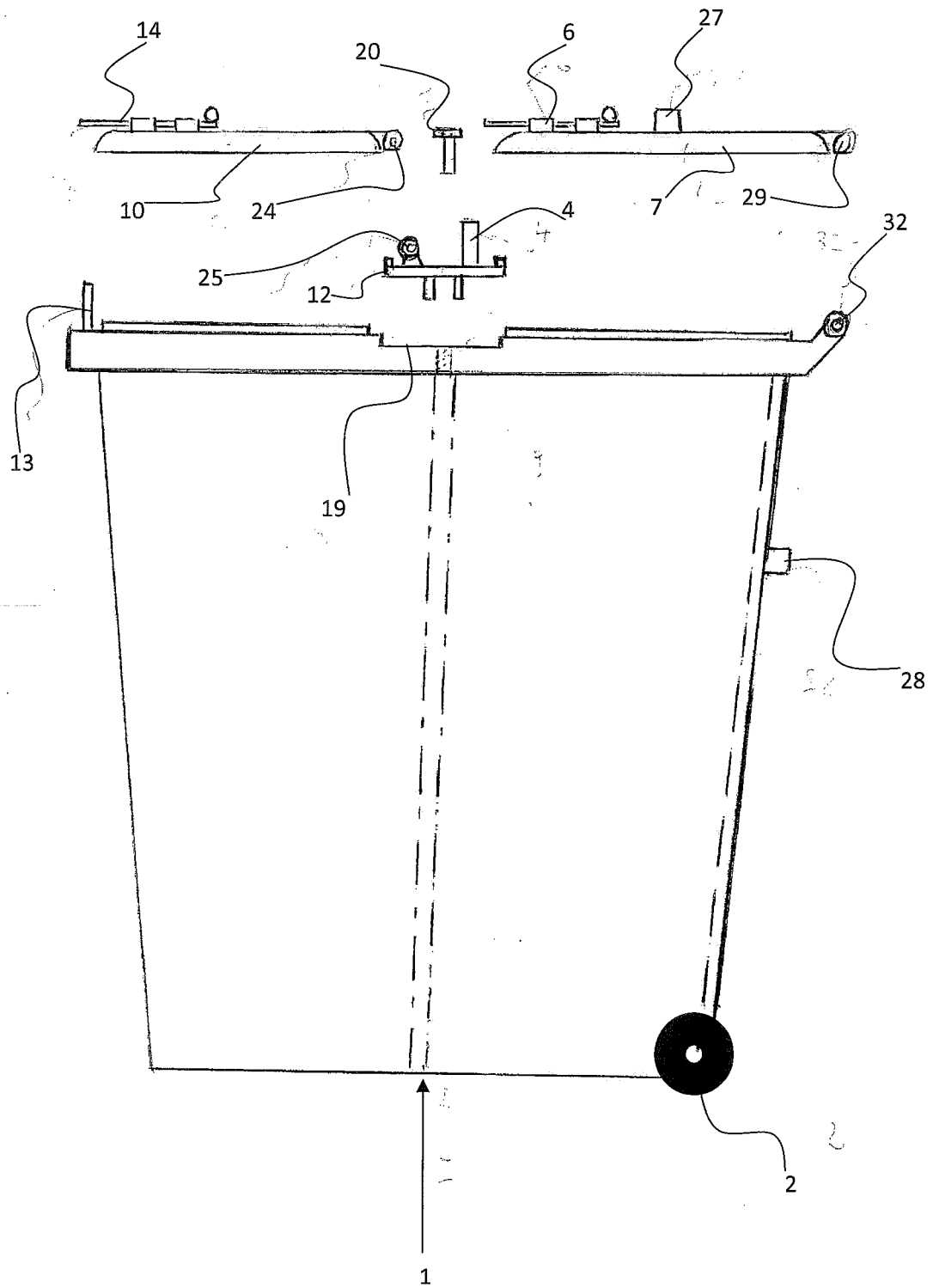


FIGURE 2

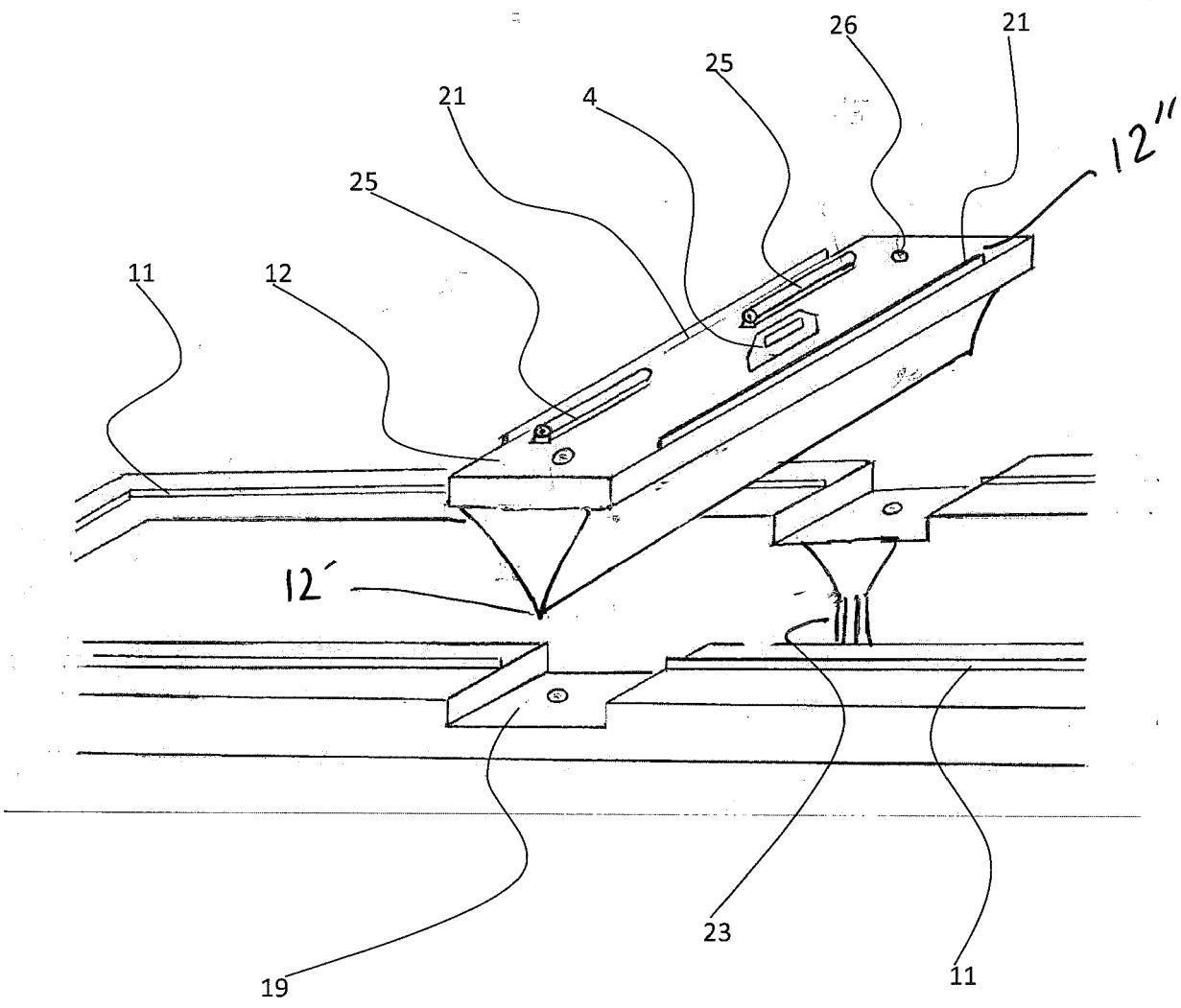


FIGURE 3

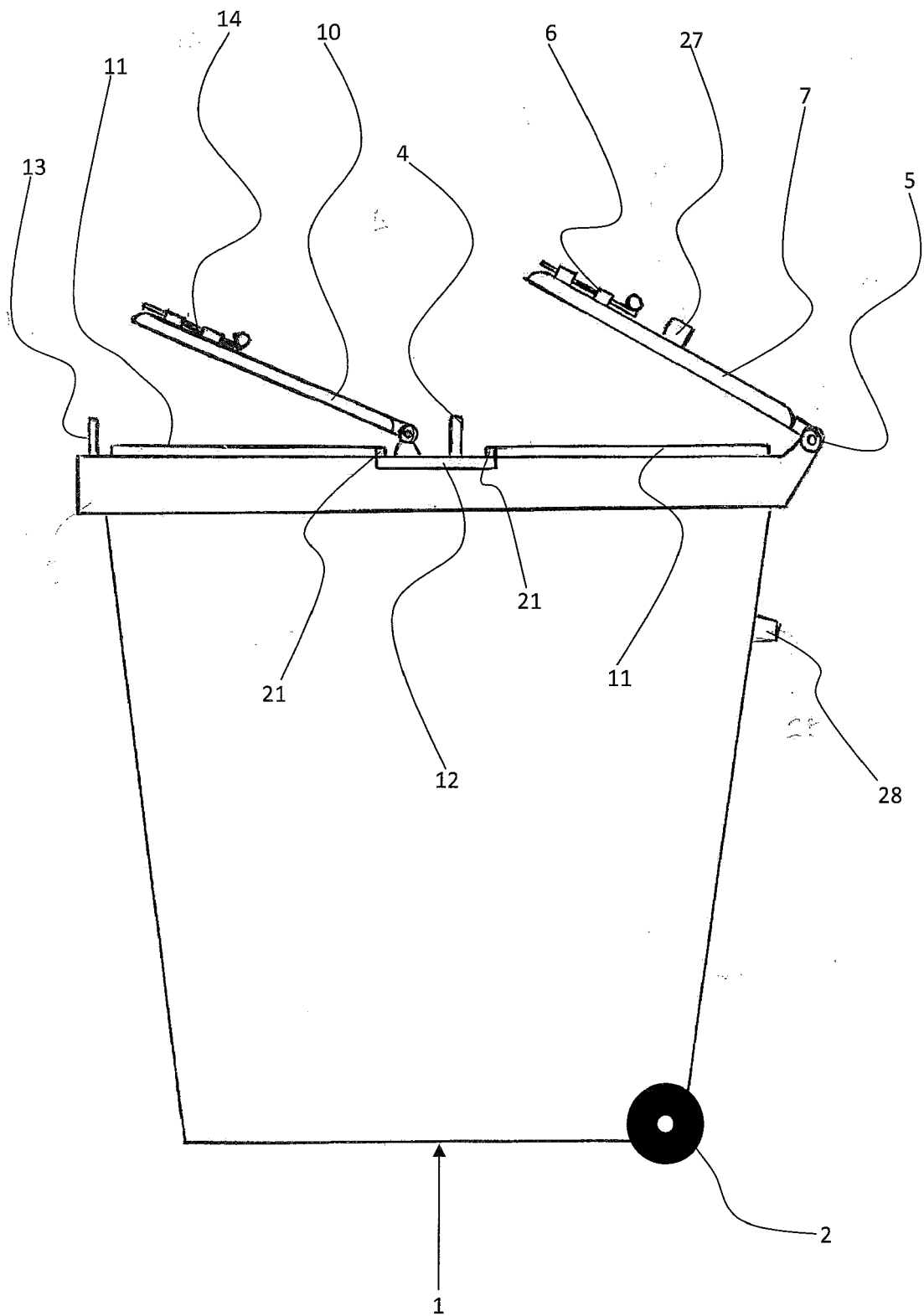


FIGURE 4

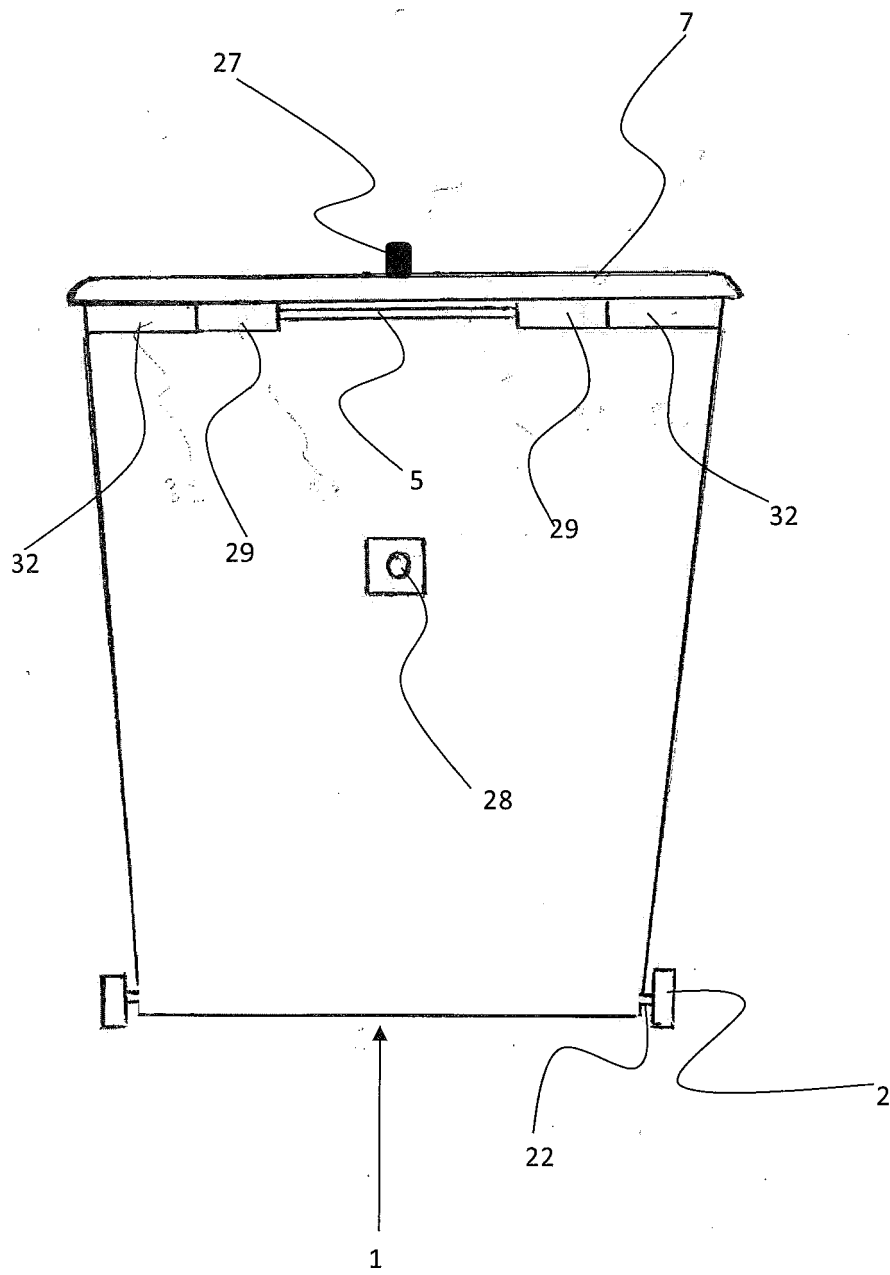
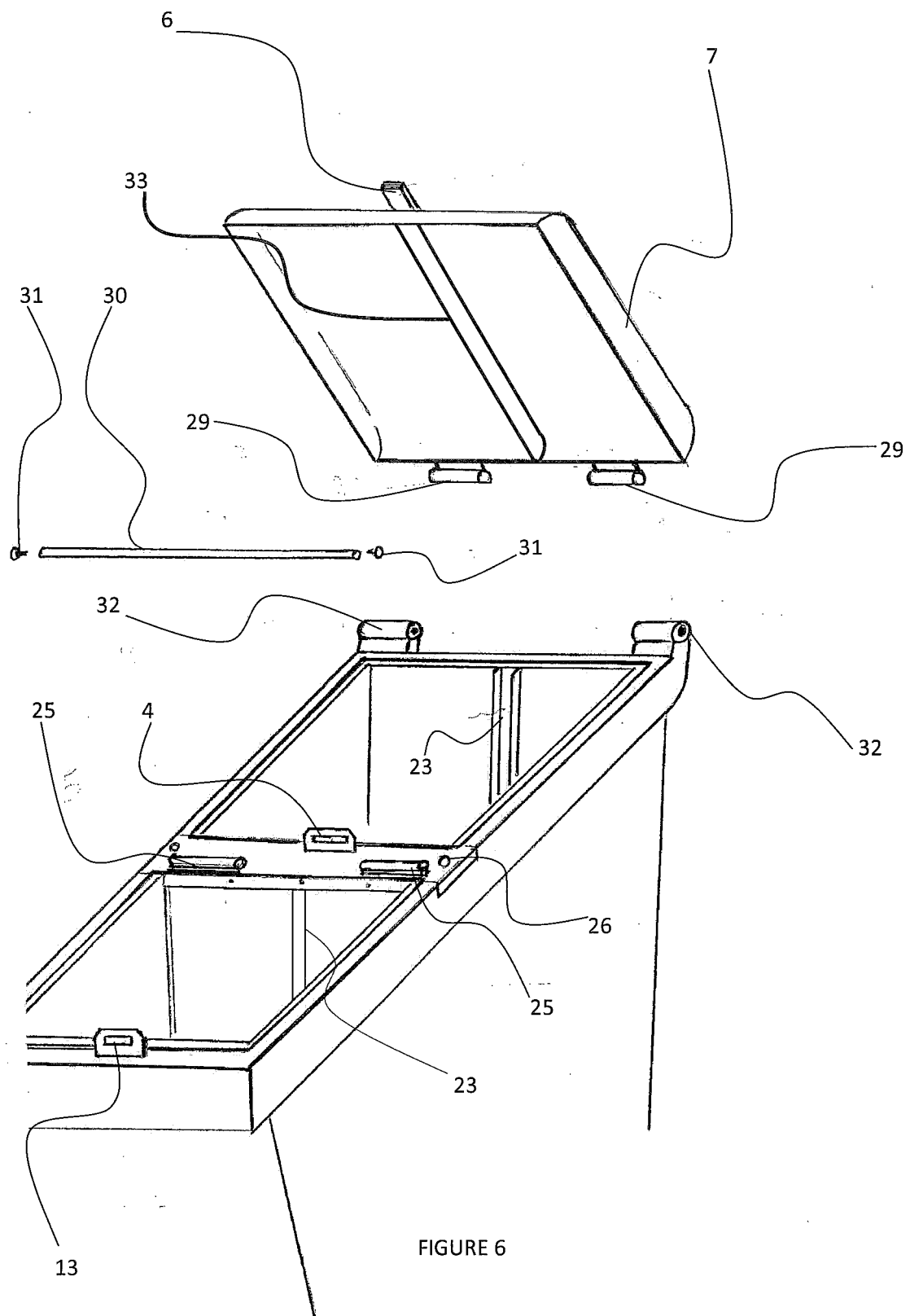


FIGURE 5



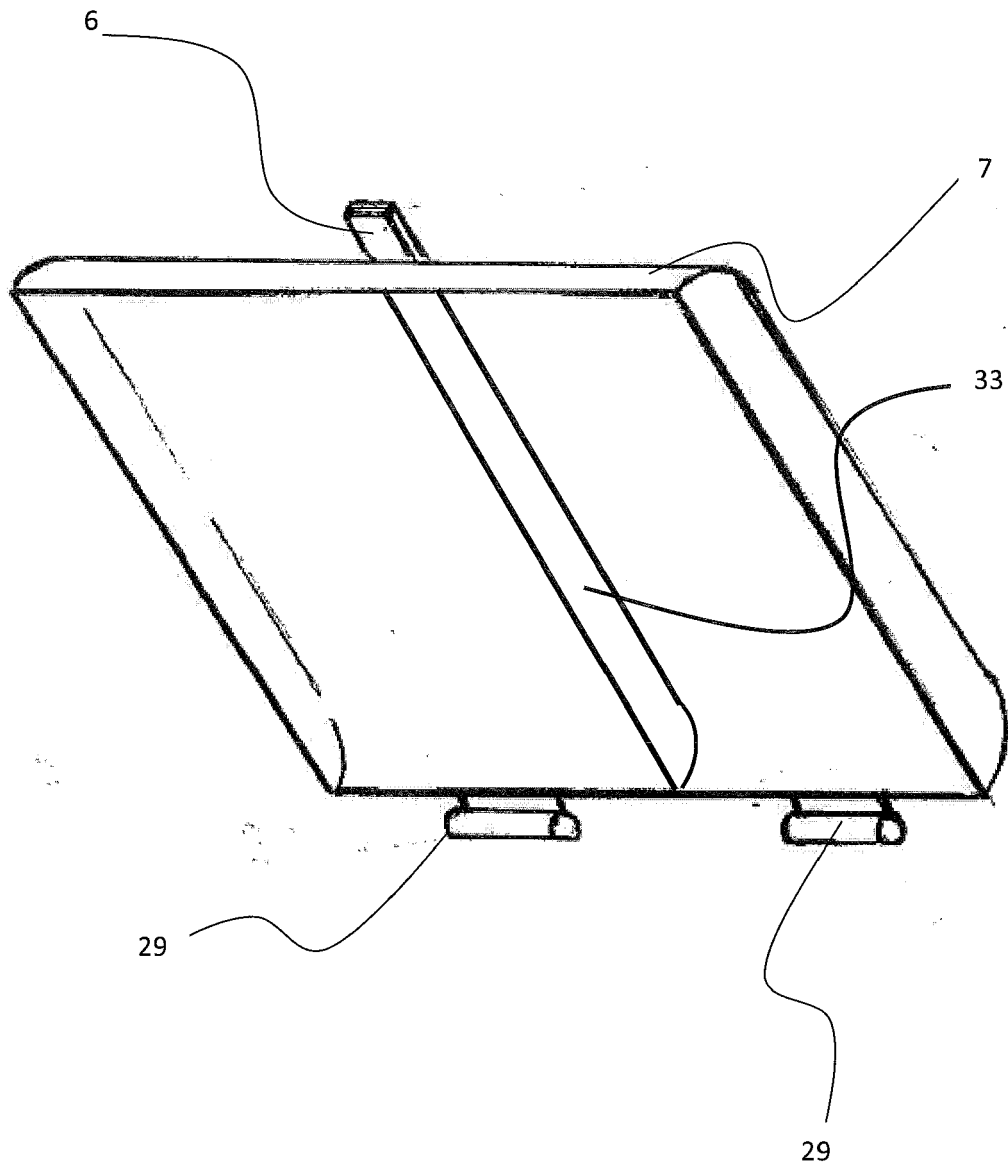


FIGURE 7

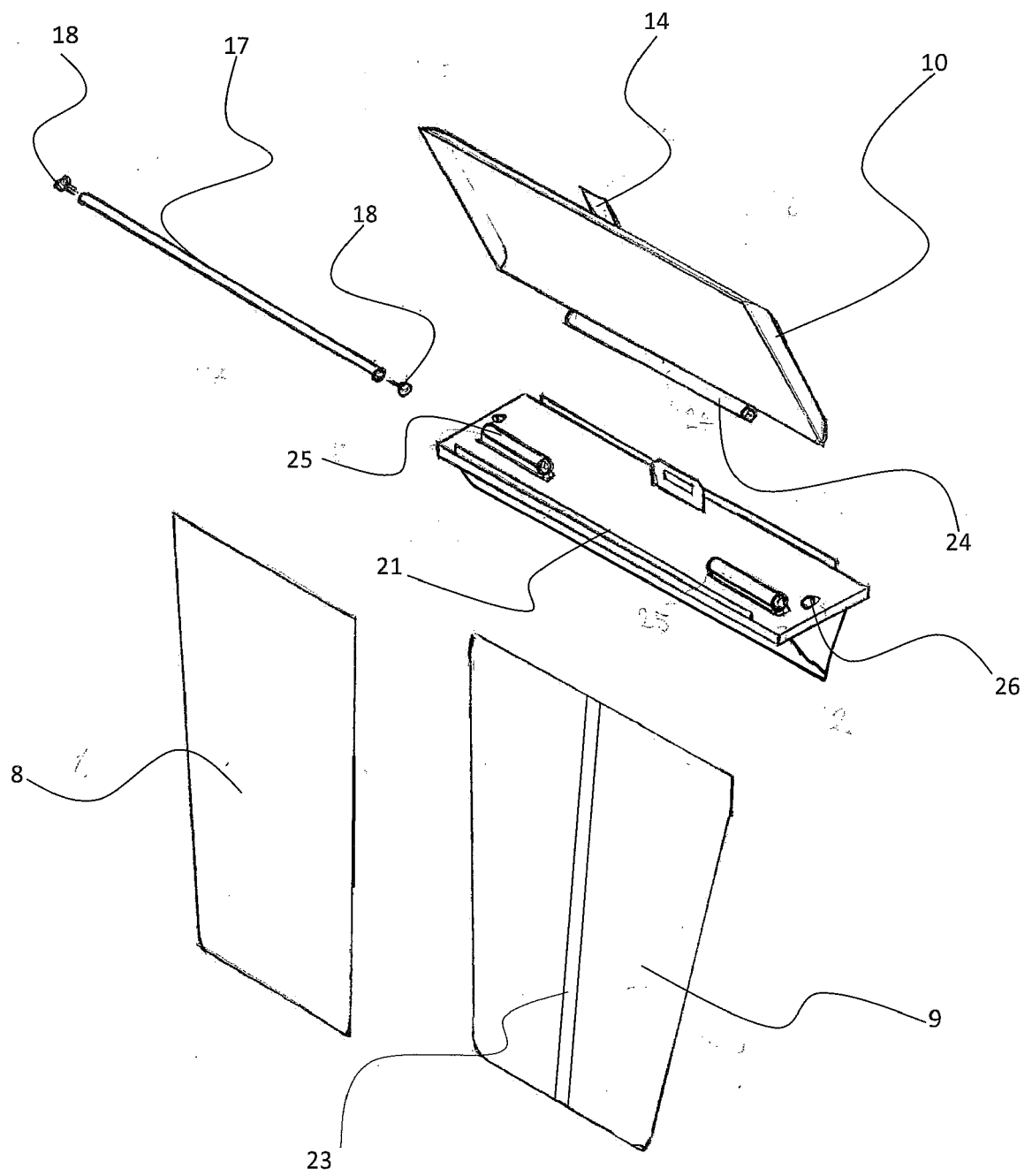


FIGURE 8

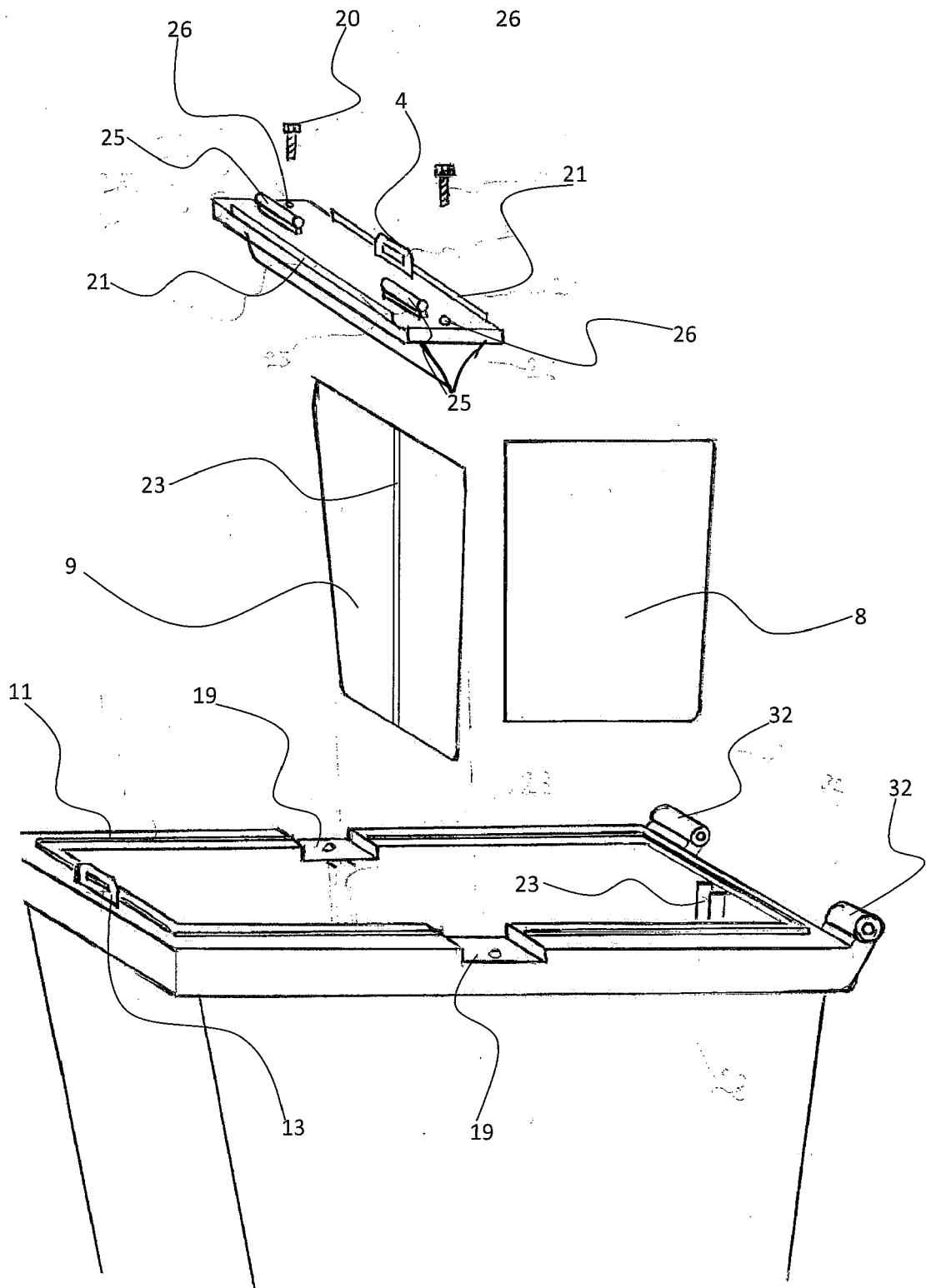


FIGURE 9

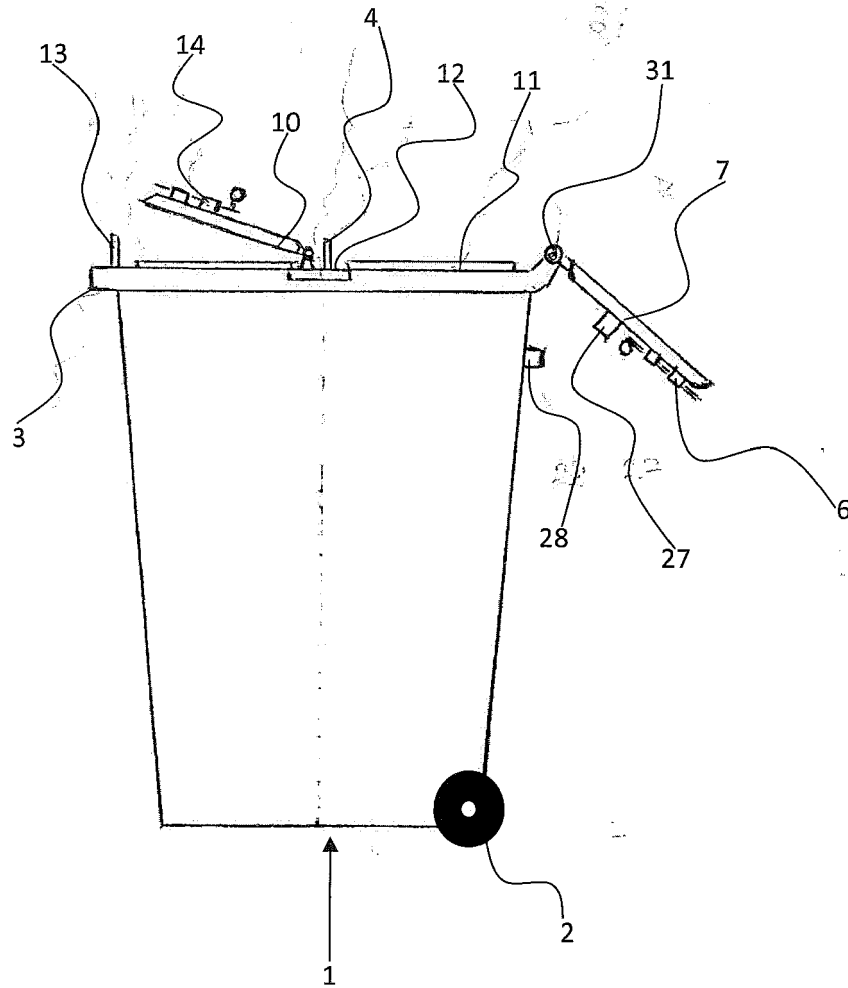


FIGURE 10



EUROPEAN SEARCH REPORT

Application Number

EP 22 17 2187

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EPO FORM 1503 03.82 (P04C01)

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X,D	AU 678 918 B2 (FIREBELT PTY LTD) 12 June 1997 (1997-06-12) * page 9, line 11 - page 11, line 23 * * figures 12-19 * -----	1-8	INV. B65F1/00 B65F1/16
A,D	WO 2013/076664 A1 (M. OSHAUGHNESSY) 30 May 2013 (2013-05-30) * page 6, line 1 - page 8, line 31 * * figures 1-8 * -----	1-8	
A,D	DE 41 23 458 A1 (M. POETEL-BOJARZYN) 21 January 1993 (1993-01-21) * column 5, line 17 - column 8, line 57 * * figures 1-5 * -----	1-8	
			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		29 August 2022	Pardo Torre, Ignacio
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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ON EUROPEAN PATENT APPLICATION NO.**

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The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-08-2022

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			WO 2013076664 A1	30-05-2013

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

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