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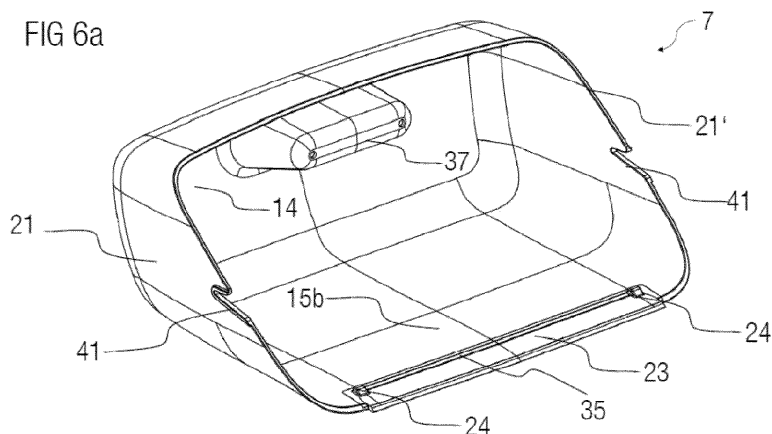
(54) **RECEPTACLE, IN PARTICULAR STORAGE BOX**

(57) The invention relates to a receptacle (1), in particular a storage box, which comprises a base body (5) and a removable cover element (7). The cover element (7) is adapted to cover an open top side of the base body (5). The base body (5) comprises a bottom wall, a front wall (25), a rear wall (11) and two side walls (27, 27') arranged oppositely to each other. The cover element (7) comprises at least a first wall (14) serving as a top wall of the receptacle (1) when the cover element (7) covers the base body (5) and a second wall (15) arranged orthogonally to the first wall (14). The second wall (15) overlaps at least partially one of the front wall (25), the

rear wall (11) and the side walls (27, 27') when the cover element (7) covers the base body (5), so that a first edge of the second wall (15) arranged distantly from the first wall (14) faces the outer surface (25a) of the respective wall (25) of the base body.

According to the present invention, the second wall (15) of the cover element (7) comprises a zone at least in the area of the first edge which is composed of a flexible material, the zone in particular being a soft lip (23) which is fixed to a portion of the second wall (15) composed of a rigid material.

FIG 6a



Description

[0001] The invention relates to the field of a receptacle, in particular of a storage box.

[0002] Typically, when sweeping up debris, dust, garden waste or the like there is a need for a dustpan and the person doing the cleaning sweeps the sweepings onto the collecting surface of the dustpan for a removal, particularly dumping it into a trash can. In many cases, however, in particular when performing domestic home cleaning activities, the person doing the cleaning is not able to quickly find or grasp the dustpan, even more when the cleaning worker is not well-organized and, therefore, does not have a special place where such items as dustpan, brush or trash receptacle are stored.

[0003] In order to support persons doing the cleaning, especially those ones who are not well-organized in storing all necessary cleaning items at one and the same place, storage receptacles, in particular trash containers, had been proposed which provide attachment means for dustpans, and, moreover, in that making the dustpan as a functional part of the storage receptacle, e. g. allotting the dustpan the function of a lid or cover element on the storage receptacle.

[0004] The US patent application 2001/0045371 A1 discloses a portable waste receptacle having a container with bottom, front, rear and side walls, thus being designed as an approximately parallelepiped-shaped box with an opening on the top. The opening may be covered by a lid which is hingedly connected to the container in removable manner at the upper edge of the rear wall. When removed from the container, the lid serves as a dustpan after it has been turned upside down.

[0005] Another waste receptacle with a removable lid, which may serve as a dustpan, is shown in the Korean patent KR1387964B1. In its arrangement when acting as a dustpan, the lid comprises a first wall forming a receiving surface for waste or the like which first wall is positioned in parallel with the front wall of the receptacle when it is covered by the lid. The lid further comprises a second wall arranged in parallel with the first wall which is positioned in parallel with the rear wall of the receptacle when the lid covers the receptacle. An L-shaped handle is attached to the second wall oriented in opposite direction with the first and second walls.

[0006] All known combinations of receptacles with removable lids which may also serve as a dustpan when removed from the receptacle disclose components of the combination manufactured with rigid material preventing the lid from supporting the person doing the cleaning to perform a complete collection of the sweepings, including small particles, from uneven grounds.

[0007] It is, therefore, an object of the present invention to develop further the lid or dustpan, respectively, in order to enable a collection of the complete sweepings, also from not fully even grounds.

[0008] A receptacle according to the invention comprises a base body and a removable cover element, e.

g. a lid, which cover element is adapted to cover, in upright position of the receptacle, an open top side of the base body. The base body is provided with a bottom wall, a front wall, a rear wall and two side walls arranged oppositely, preferably in a substantial parallel alignment, to each other, wherein its corner sections could be curved. The cover element comprises at least a first wall serving as a top wall of the receptacle when the cover element covers the base body and a second wall which is arranged orthogonally to the first wall. The second wall partially overlaps one of the front, rear or side walls of the base body in its arrangement covering the base body. In this arrangement, a first edge of the second wall of the cover element, which first edge is arranged distantly from the first wall, faces or may touch the outer surface of the respective wall of the base body. According to one aspect of the invention the second wall of the cover element comprises a zone at least in the area of the first edge which is composed of a flexible material. As a result of that a zone at the first edge with a flexible characteristic, the first edge is in a position of being adaptable to be pressed against uneven grounds, following its shape and thus providing a smooth passage for waste particles from the ground to the dustpan surface, i.e. the second wall of the cover element. It is obvious that the zone does not have to comprise all of the area of the first edge, but as well could just comprise a part of it. The zone at the first edge may be a soft lip which is fixed or connected to a portion of the second wall that is composed of a rigid material. The rigid material may be any kind of metal or plastic material, in particular it is a type of reinforced plastic material or any injection moldable material. As flexible material, e. g. for the soft lip, the use of silicone, rubber or another type of an elastomer may be considered; in particular TPE (thermo plastics elastomere) material. The soft lip may be attached to the portion of the second wall which is composed of rigid material by means of fixing means, the fixing means may be designed to allow a removal or replacement of the soft lip. Preferably, the soft lip and the portion of the second wall is injection molded, in that providing a captive combination of flexible and rigid material. In particular a 2-component injection molding process (2K process) may be used when manufacturing the cover element and thus to join the soft lip with the rigid material of the cover.

[0009] In order to further improve the sweeping and collection of the waste particles, the first edge of the second wall of the cover element preferably passes into a conic slope of the zone and the tapered end edge of the zone may serve as a drip edge for rain or other kind of overhead irrigation when the cover element is positioned on top of the base body in its lid function. Specifically, the conic slope passes into the inner surface of the second wall which also serves as a dustpan surface, thereby at least part of it crosses a protrusion or a superelevation which is preferably arranged in parallel with an end edge of the zone. The angle of inclination of the conic slope may be smaller than that one of the decline at the rear

side of the protrusion or superelevation, thus allowing an easy passage of the waste particles in sweeping direction but furnishing a sort of barrier for already collected waste making it difficult for these particles to pass over in opposite direction. The superelevation may be designed by a conic slope having its highest point at a level above the surface of the second wall. In that, the cross section of the zone at the first edge of the second wall may be designed as a saw tooth with a smooth front face and a steep rear face. In a possible embodiment the superelevation might not be uniform in structure but have at least two different shapes that might also serve different purposes. That is, one part might show a more shallow superelevation serving a sealing function when placed at the base body and an improved sweeping function when removed. The other shape might consist of a superelevation that protrudes much higher and that coincides with the shape of the base body at that position (for example a significantly rectangular shape) and thus serves a sealing function as well as a fastening function fastening the cover with the base body.

[0010] A preferred embodiment of the receptacle may be a storage box, in particular a balcony box, for storing tools, e. g. gardening tools such like secateurs, garden shovels, etc.. The storage box may also comprise a compartment receiving collected garden or balcony waste. Such storage boxes are best designed when they are watertight in order to protect the stored tools from environmental stress. In particular, for such types of storage boxes it is favourable when a sealing element is arranged in the overlapping area of the second wall of the cover element and the respective wall of the base body. Said sealing element tightens the space between the second wall of the cover element and the allocated wall of the base body, so that water splashes are prevented from entering the inside of the storage box. The sealing element may have a sufficient flexibility which compensates any warpage both at the second wall of the cover element and at the respective wall of the base body.

[0011] The sealing element and the zone composed of a flexible material are preferably designed integrally. The sealing element may be a protrusion or superelevation of a conic slope of the zone and, when the cover element closes the receptacle, the protrusion or superelevation touches the outer surface of the respective wall of the base body.

[0012] A further specific embodiment of the present invention is characterized by a cover element having in addition to the first and second walls a third wall which is arranged particularly orthogonally to the first wall and in parallel with the second wall and, furthermore, two particularly parallel fourth walls arranged orthogonally to both the first wall and the second wall and the third wall. In one embodiment each of the second, third and fourth walls overlaps a respective one of the front, rear and side walls of the base body when the cover element takes its covering function on top of the base body. With such circumferential overlapping, the storage box already pro-

vides an adequate protection against entrance of rain drops.

[0013] However, a further improvement of protection against humidity is indicated by a sealing element that is circumferentially arranged in the space, i. e. the overlapping zone, between the second, third and fourth walls of the cover element and the front, rear and side walls of the base body. Such an all-around sealing provides notably good conditions for stored tool protected against environmental impact.

[0014] The fact of providing an all-around overlapping of the walls of the cover element and the walls of the base body might cause a cumbersome handling when the cover element is put on the base body. Therefore, each of the second, third and fourth walls of the cover element and/or the front, rear and side walls of the base body are preferably designed with a conic slope at their free end edges. Such conic slopes act as inclined insertion surface and enable a relieved fitting.

[0015] For a better control of the collected sweepings, the dustpan may be constructed as to offer the person doing the cleaning an improved insight from above. This target may be met by a height of the third wall of the cover element which is smaller than the height of the second wall. Such a construction does not only provide an improved insight, but it also facilitates the movement of the brush when sweeping the waste particles onto the dustpan surface. Preferably, the fourth walls that are connecting the second and third walls at their lateral edges are compensating the height difference by having a sloping upper edge.

[0016] The handling of the dustpan, in particular during the sweeping activity, may be further enhanced by a handle element which is arranged at the third wall, thus providing a grip for moving the dustpan to the desired position. In one embodiment the handle element is preferably an elongated bar which is arranged in parallel with the second wall. Such elongated bar can be easily encompassed by the cleaning person and both collecting the sweepings and emptying the dustpan is enabled in an ergonomic way. The handle element may be fixed to a free end edge of the third wall, extending from there in straight prosecution.

[0017] The cover element with a handle element may be characterized by a groove or a tunnel arranged at the rear wall of the base body, which groove or tunnel is designed to receive and/or guide the handle element when the cover element is put on or removed from the base body. Such an arrangement further improves the cover element handling when serving as a lid for the base body, notably in the situation of the cover element to position at and slide onto the base body.

[0018] In a preferred embodiment the cover element provides a different solution to the elongated handle element. According to this alternative solution a handle element is arranged at the first wall of the cover element, which handle element may be a recess in the first wall. Such recessed grip may work as a pocket for introducing

the fingers of a hand, while the thumb touches the second or third wall of the cover element, in a manner of a pinch. It is of advantage if the handle element is arranged in a central area of the first wall.

[0019] Another alternative embodiment proposes an arrangement of the cover element at the base body by way of a pivoting connection. For that reason, the cover element and/or the base body comprise(s) hinge parts for establishing such a pivoting connection. In the closed position of the receptacle the sealing element is pushed against the respective wall of the base body, thereby compensating any warpages and establishing a water-tight arrangement.

[0020] In one embodiment the placement of the cover onto the base body can be eased by indentions that are formed in at least in one wall of the forth walls of the cover and with mate with corresponding embossments placed on the base body. If is understood that the one or more indentations also could be formed on the base body then mating with respective embossments on the cover.

[0021] The invention will be described more fully in detail hereinafter with reference to the accompanying drawings, in which

- Fig. 1 is a perspective view of a balcony box in closed condition showing in particular a front side thereof;
- Fig. 2 is a perspective view of the balcony box of Fig. 1 in particular a rear side thereof;
- Figs. 3a, b are perspective views of a box lid and of a box base of the balcony box of Fig. 1, both components separated from each other;
- Fig. 4 is a perspective view of the balcony box components of Figs. 3a, b, but in a condition when the box lid is lifted from the box base for opening or approaching the box base for closure;
- Fig. 5 is a cross sectional view of the detail of Fig. 3a along the line V - V; and
- Fig. 6a, b are the cover and the base body of an alternative embodiment of the balcony box.
- Fig. 7a, b, c are detailed cuts of the balcony box of figures 6.

[0022] Referring to the drawings where is shown a specific embodiment of a box with a functioning cover element which is a balcony box 1 for storing items, in particular gardening tools 3, e. g. secateurs or the like. As can be seen in Fig. 1, the balcony box 1 is a box-shaped container and may have a height of 260 mm, a length of

200 mm and a depth of 100 mm and it is manufactured using an injection moldable plastic material

[0023] The balcony box 1 comprises two components which are a box base 5 and a box lid 7. Both components 5, 7 are separate elements of the balcony box 1, they are not fixedly interconnected but may be put together to add up to the closed box as shown in Figures 1 and 2. In order to provide a stable positioning of the balcony box 1, it may be hang-up at a wall, e. g. a house wall. To this end, two suspension eyes 9 are provided at a rear wall 11 of the box base 5.

[0024] When separated from the box base 5 in a vertical movement, as shown in Fig. 4, the box lid 7 uncovers the interior of the box base 5. As can be seen in Fig. 3b, the interior is separated into several compartments 13 of different width for separating the stored items from each other, thereby allowing the owner of the balcony box 1 to remain well organized.

[0025] The box lid 7, when removed from the box base as shown in Fig. 3a, enables the owner to make use of its second function. With the outer surface 15a of its front wall 15 directed towards the floor or ground, the box lid 7 can be used as a dustpan for collecting and removing swept waste particles. In this second function, the inner surface 15b of the front wall 15 works as collecting surface for the waste. For an ergonomic handling of the dustpan 7 a handle 17 is provided, which handle 17 is shaped as an elongated bar of rectangular cross section. The handle 17 is arranged in parallel with the inner surface 15b of the front wall 15 of the box lid 7 and constitutes a continuation of a box lid rear wall 19. In order to provide a better insight onto the collecting surface of the dustpan 7 for a person doing the cleaning and also to enable an unhindered sweeping movement, the rear wall 19 of the box lid 7 is of distinct small height compared to the height of its front wall 15, rather, according to Fig. 3a, the rear wall 19 is merely a small strip.

[0026] Beside the front wall 15 and the rear wall 19, the box lid 7 further comprises two side walls 21, 21' completing its box-like structure. Each of the side walls 21, 21' connects a lateral edge of the front wall 15 with a lateral edge of the rear wall 19. Due to the different heights of front 15 and rear 19 walls, there is no parallel alignment of the upper edges of the side walls 21, 21' with their lower edges, instead, the heights of the side walls 21, 21' are continuously decreasing from the front wall 15 to the rear wall 19. In the embodiment of Fig. 3a the upper edges of the side walls 21, 21' picture a concave curve, however, other embodiments may provide straight-lined or convex upper edges instead.

[0027] To enable a notable sweeping by moving all waste particles across the front edge of the collecting surface of the dustpan 7, this front edge is provided with a soft lip 23 made of silicone performing high flexibility, thus allowing adjustment to uneven grounds. With such adjustment the number of waste particles not transferred to the collection surface but pushed into a gap between dustpan front edge and the ground is limited to a high

degree.

[0028] Following the specific shape of the box lid 7 with different heights of front 15 and rear 19 walls, the box base is designed in a reversed way, i. e. the front wall 25 of the box base 5 is of smaller height than its rear wall 11 and its side walls 27, 27' are adapted to the upper edge of the lid side walls 21, 21', in that providing an upper edge with a convex contour. In order to improve the stability of the closed balcony box 1, a rim 29 is arranged close to the upper edge of the side walls 27, 27' and the rear wall 11, with the upper side of the rim 29 being in parallel alignment with the upper edge of the upper edge of the side walls 27, 27' and the rear wall 11. With such a rim 29, a shoulder is provided for supporting the upper edges of the side walls 21, 21' and the rear wall 19 of the box lid 7. With such arrangement of a partial overlapping of the side walls 21, 21' of the box lid 7 and the side walls 27, 27' of the box base 5 as well as of the rear wall 19 of the box lid 7 and the rear wall 11 of the box base 5, a kind of labyrinth seal is provided which brings out a sufficient sealing against humidity. Of course, the sealing effect could be further increased with an implementation of a specific sealing element.

[0029] Fig. 4 also provides an explanation of the handling when the balcony box 1 shall be closed, e. g. after a sweeping operation with the aid of the box lid 7 as dustpan has been completed. During this closure procedure, the box lid 7 approaches the box base 5 from above downwardly in a vertical movement. In order to facilitate the closure movement, in particular with providing a centered approach, the handle 17 of the box lid 7 works as a centering means in cooperation with a respective groove 31 arranged at the rear wall 11 of the box base 5. The cross-sectional area of the groove 31 shows slightly larger dimensions than the cross-sectional area of the handle 17 which allows a slipping of the handle 17 within the groove 31 nearly free of clearance.

[0030] With the cross-sectional view of Fig. 5 the silicone soft lip 23 shall be further explained. In order to further improve the sweeping effect, the soft lip 23 is tapered towards its front-line or end edge 33, therewith making an access ramp 23a for the waste particles available supplying a particularly small step for the sweepings. Such a tapering also increases the flexibility of the soft lip 23 at its end edge 33. As can be also seen in Fig. 5, there is no flush crossover from the access ramp 23a to the inner surface 15b of the front wall 15, rather, a superelevation 35 of the access ramp 23a is provided which is of higher level than the inner surface 15b. Said superelevation 35 performs a slight barrier for waste particles to return when they are already collected on the inner surface 15b or dustpan collection surface, respectively.

[0031] The superelevation 35, however, offers a second function: when the balcony box 1 is in its closed condition, the superelevation 35 is pressed against the box base front wall 25, thus serving as a sealing element. Thanks to the higher flexibility of the silicone material compared to the rigid box base 5 and box lid 7 material

the superelevation 35 is enabled to compensate any warpage that might have arisen at the box base front wall 25 and/or at the box lid front wall 15.

[0032] In an embodiment (not shown) which is equipped with increased sealing the soft lip 23 with the superelevation 35 is not only provided at the front wall 15 of the box lid but such sealing being a circumferential arrangement.

[0033] Fig. 6a and 6b show the cover and the base body of an alternative embodiment of the balcony box. While all other components thereof and also its twofold functionality is realized in the box lid of Fig. 6a and 6b in a similar manner, the handle 17 is different to the handle 17 of the embodiment of Figs. 1 to 5. First of all, the handle 17 is arranged at the bottom wall 14 of the box lid 7. Beyond that, the handle 17 is realized as a recess 37 in a central area of the top wall 14, i. e. it is adapted to serve as a recessed grip.

[0034] The cover (7) situates the soft lip (23, 24). The zone the soft lip (23) covers does not comprise all of the area of the first edge, but just comprise a part of it. With this embodiment the superelevation (35) of the soft lip (23) exhibits only the space between the soft lip's protrusions (24). The soft lip (23) next to its protrusions (24) towards the inner surface (15b) of the cover (7) does not exhibit any superelevation (35).

[0035] In the cover (7) indentions (41) are formed on its side walls that mate with corresponding embossments (42) placed on the base body (5). This particularly helps with placing the cover (7) on top of the base body (7).

[0036] The two different parts which form the inner section of the soft lip (23) can best be seen from Fig. 7a, b and c. The first part is in general similar to the soft lip shown with the embodiment of Fig. 1 to 5, exhibiting a superelevation (35) that results in a sealing function (when fixed to the base body (5)) and a collection function (when offset from the base body (5)). The second part of the soft lip (23) shows two protrusions (24), that together with the indent section (28) of the base body (5) serve a locking function when fixed to it.

List of reference numerals

[0037]

1	balcony box
3	gardening tool
5	box base
7	box lid / dustpan
9	suspension eyes
11	base rear wall
13	compartments
14	lid top wall
15	lid front wall
15a	outer surface
15b	inner surface
17	handle
18	box handle

19	lid rear wall
21, 21'	lid side walls
23	soft lip
23a	access ramp
24	protrusion
25	base front wall
25a	outer surface
27, 27'	base side walls
28	indent section
29	rim
31	groove
33	end edge
35	superelevation
37	recess
41	indentation
42	embossment

Claims

1. A receptacle (1), in particular a storage box, having a base body (5) and a removable cover element (7), the cover element (7) adapted to cover an open top side of the base body (5),

- the base body (5) comprising a bottom wall, a front wall (25), a rear wall (11) and two side walls (27, 27') arranged oppositely to each other,
 - the cover element (7) comprising at least a first wall (14) serving as a top wall of the receptacle (1) when the cover element (7) covers the base body (5) and a second wall (15) arranged orthogonally to the first wall (14), the second wall (15) at least partially overlapping one of the front wall (25), the rear wall (11) or the side walls (27, 27') when the cover element (7) covers the base body (5), so that a first edge of the second wall (15) arranged distantly from the first wall (14) faces the outer surface of the respective wall of the base body (5),

characterized in that

the second wall (15) of the cover element (7) comprises a zone at least in the area of the first edge which is composed of a flexible material, the zone in particular being a soft lip (23) which is fixed to a portion of the second wall (15) composed of a rigid material,
 and wherein the soft lip (23, 24) is formed different at different areas.

2. The receptacle (1) of claim 1, wherein the soft lip (23, 24) comprises an area with a superelevation (35) and an area with a protrusions (24), in particular the soft lip (23) does exhibit a superelevation (35) inside the areas of its protrusions (24) and does not exhibit any protrusion (35) from its protrusions (24) towards the inner surface (15b) of the cover (7).

3. The receptacle (1) of any of the claims 1 or 2, wherein at least one protrusion (24) fixes the cover (7) to the base body (5) together with a indent section (28) formed at the base body (5).

4. The receptacle (1) of any of the preceding claims, wherein the first edge passes into a conic slope of the zone, the tapered end edge (33) thereof in particular serving as a drip edge for overhead irrigation.

5. The receptacle of claim 4, wherein the conic slope passes into the inner surface (15b) of the second wall (15), thereby at least part of it crossing a protrusion or superelevation (35) which is preferably arranged in parallel with an end edge (33) of the zone.

6. The receptacle (1) of any of the preceding claims, wherein a sealing element is arranged in the overlapping area of the second wall (15) of the cover element (7) and the respective wall of the base body (5).

7. The receptacle (1) of any of the preceding claims, wherein a handle element is arranged at the first wall (14) of the cover element (7), the handle element in particular being a recess (37) adapted to serve as a recessed grip.

8. The receptacle (1) of claim 7, wherein the recess is formed in a central area of the first wall (14).

9. The receptacle (1) of any of the preceding claims, wherein the cover element (7) and/or the base body (5) comprise(s) hinge parts for a pivoting connection of the cover element (7) .

10. The receptacle (1) of any of the preceding claims, wherein the soft lip (23) is attached to the portion of the second wall (15) composed of a rigid material by means of injection molding, in particular e-component injection molding.

11. The receptacle (1) of any of the preceding claims, wherein indentions (41) are formed in at least in one wall of the forth walls (20, 21) of the cover (7) and with mate with corresponding embossments (42) placed on the base body (5).

FIG 1

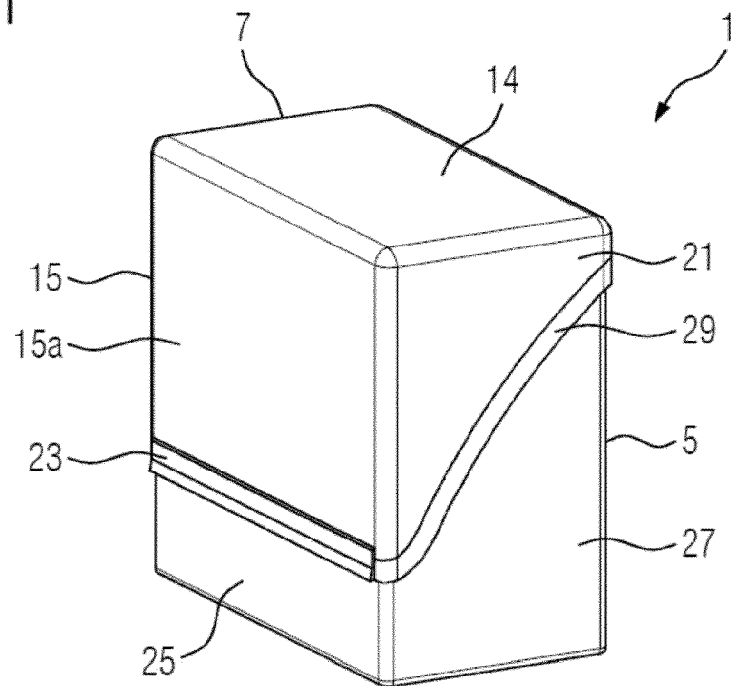
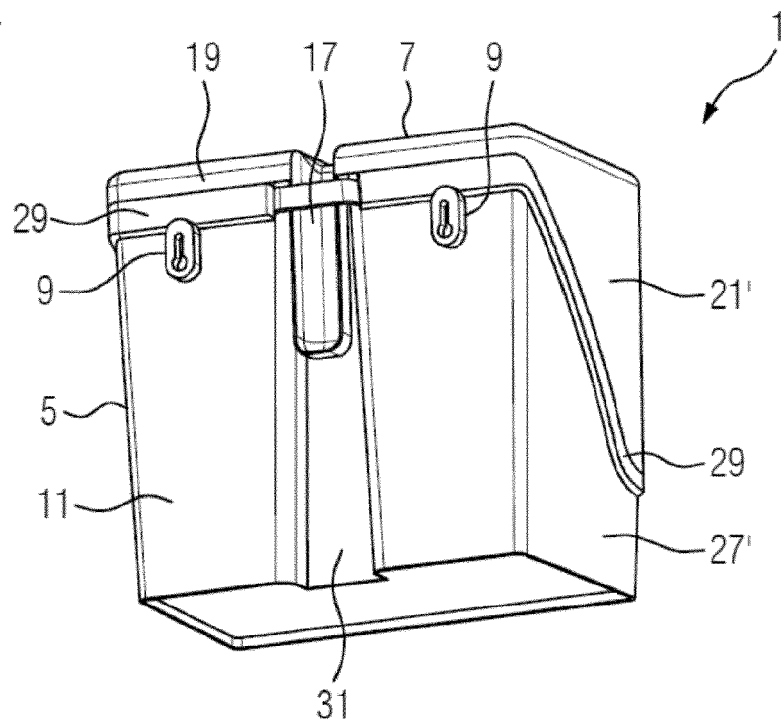


FIG 2



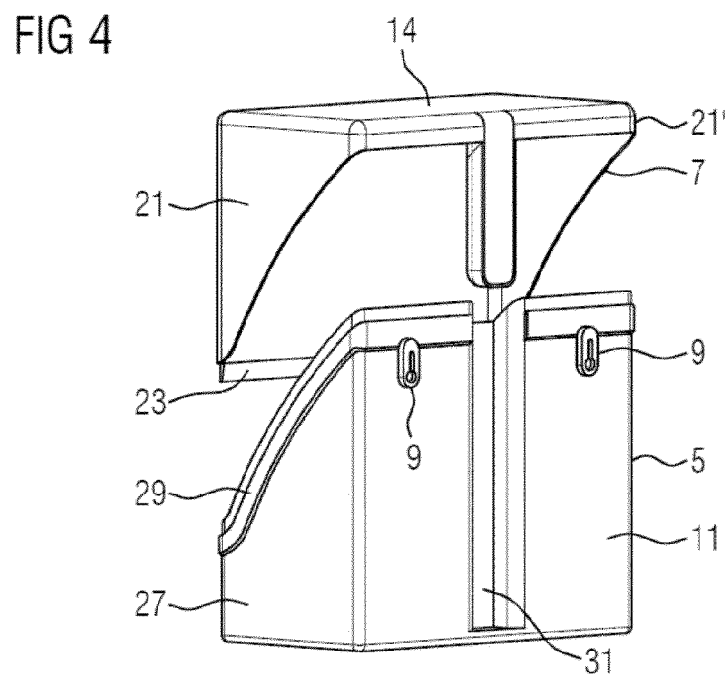
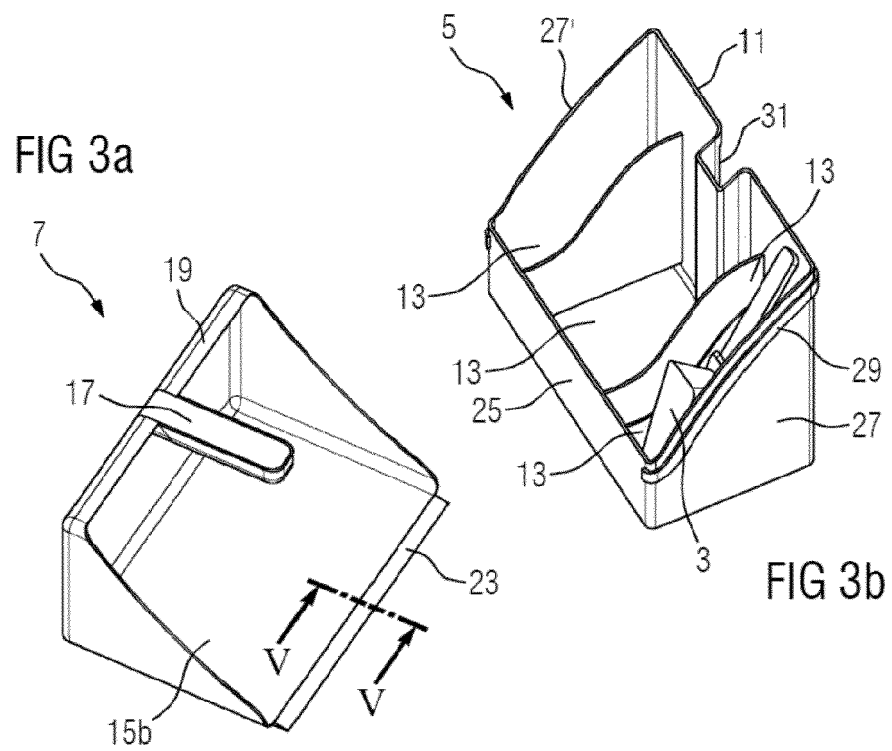


FIG 5

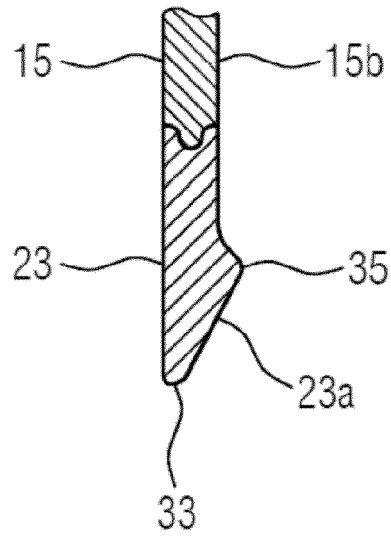


FIG 6a

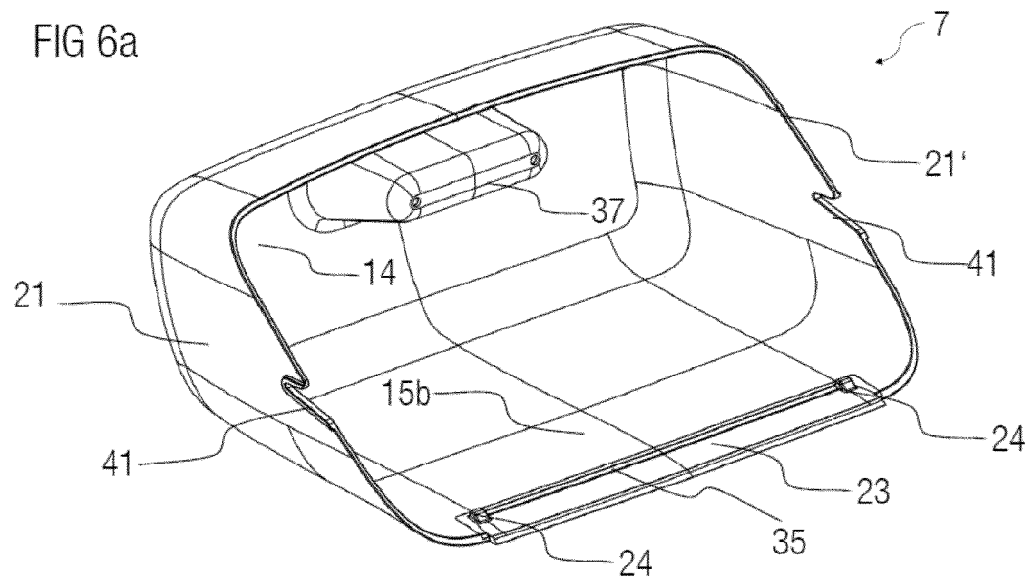


FIG 6b

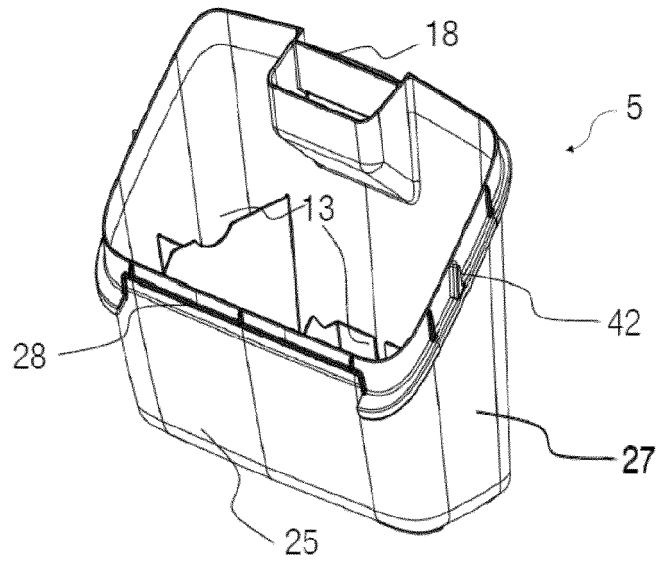


FIG 7a

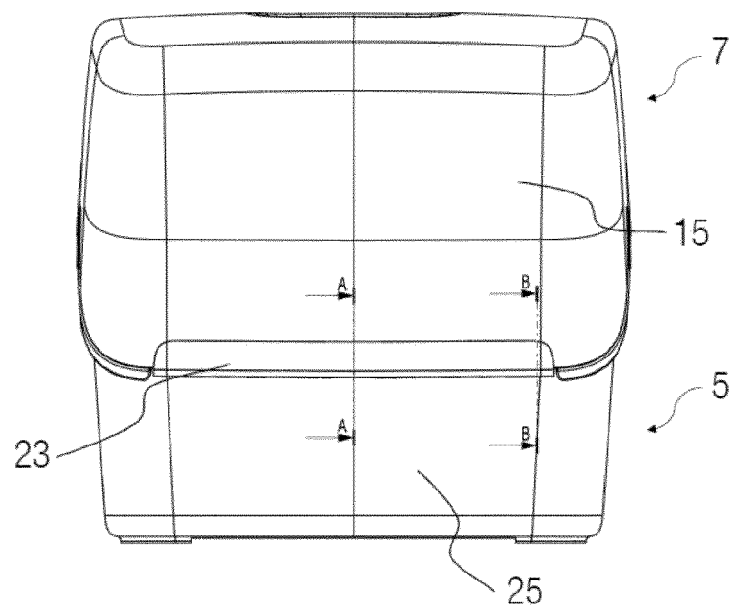


FIG 7b

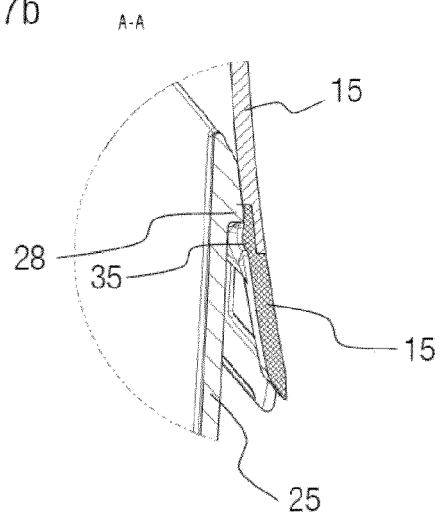
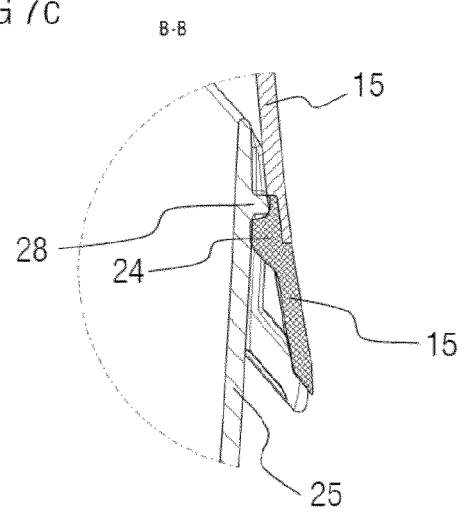


FIG 7c





EUROPEAN SEARCH REPORT

 Application Number
 EP 21 15 6235

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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