



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
13.06.2001 Bulletin 2001/24

(51) Int Cl.7: **B65F 1/16**

(21) Application number: **99123889.0**

(22) Date of filing: **02.12.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

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(54) **A lid for a refuse container**

(57) The invention concerns a multiple part lid (2) for a refuse container (1). The lid is distinguished by comprising an upper lid (9) and a lower lid (8) which may be opened in each their direction. By filling refuse into the container, the upper lid functions as lid for the refuse container, and when the refuse is emptied from the con-

tainer, the lower lid is used together with the upper lid as the aggregate lid for the refuse container. The use of a multiple part lid implies that it is not necessary to turn the refuse container depending on whether refuse is to be filled into the container or whether the container is to be taken away for emptying.

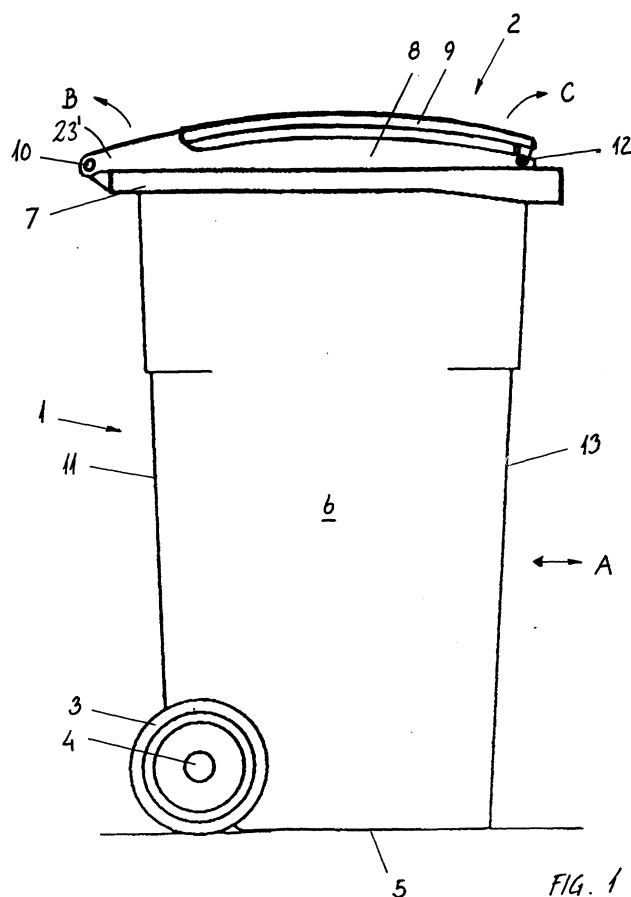


FIG. 1

Description

Background of the Invention

[0001] The present invention concerns a lid for a refuse container with bottom and side walls.

[0002] Prior art lids are disadvantageous as they are hinged at the same side wall, usually called the rear side wall, where also a handle for transporting the container is disposed. The refuse container is usually placed with the rear side wall facing a fence, a wall, a hedge, or the like, at a household. This results in a conflict between the user's wish of having the container turned with the lid opening outwards towards the user and the refuse collector's wish of having the handle disposed facing outwards.

Summary of the Invention

[0003] It is the purpose of the present invention to provide a lid which does not have the above drawback and which ensures that a refuse container both can be filled and gripped from the same side, which at the same time is easy to clean, which can be emptied completely and which is without pockets between lower lid and upper lid where refuse may get stuck.

[0004] This purpose is achieved with a lid being peculiar in that it comprises a lower lid provided with a filling aperture and which is hinged at an edge area of a first side wall and at least one upper lid which is hinged to the lower lid at one of the other side walls.

[0005] With a lid of this kind there is established possibility for opening the lid both from one side and from another side of the refuse container. The lid may thus have a lower lid pivoting in one direction by being hinged to the edge area at the first side wall, and an upper lid pivoting in another direction by being hinged to an edge area of one of the other side walls, for example the side wall opposite to the side wall of the hinging of the upper lid.

[0006] In this kind of lid it may generally be said that the lower lid consists of a frame element and the upper lid consists of a plate element. The plate element is provided so that the lid covers the frame element completely. This implies, however, a risk that an overlap between the plate element and the frame element forms a pocket between an upper side of the frame element and an underside of the plate element. When the refuse container is to be emptied of refuse, the lid will swing away from an opening in the container so that refuse may be discharged from the refuse container. By discharging refuse from the refuse container, this will be guided down along the open lid. The pocket formed between the lower lid and the upper lid will, however, catch some of the refuse discharged from the container. This results in that the refuse container is not completely emptied from refuse, and that after emptying refuse can remain in the pocket.

[0007] By providing the upper lid with a flange it becomes possible to achieve a cleaning-friendly container as there may be established an overlap between the lower lid and the upper lid without a risk of refuse getting stuck in a possible pocket between the upper side of the lower lid and the underside of the upper lid.

[0008] In a preferred embodiment, the lid according to the invention is therefor peculiar in that the lower lid consists of a frame element delimiting the aperture with a rim, and that the upper lid comprises a plate element arranged for covering the aperture in the lower lid and which at its underside is provided with a first annular downwards oriented flange extending towards the aperture in the lower lid as it extends along the rim of the aperture, and that the lower lid along an edge area of the aperture is provided with a second annular upwards oriented flange extending at the outer side of the first flange.

[0009] In this embodiment there is achieved a great security against refuse getting stuck in a possible pocket between the upper side of the lower lid and the underside of the upper lid.

[0010] The first flange and the second flange may thus be disposed in the upper lid and the lower lid, respectively, that a slot is formed between the flanges, and that the second flange may be provided with holes so that the refuse container may be vented when the lid is closed. Venting may be advantageous in order to avoid obnoxious smells or to avoid condensed water on the lid. Possible condensate will, however, drip down inside the container via the flange of the upper lid.

[0011] The upper lid may be mounted to the lower lid in different ways, preferably by a hinge. In a preferred embodiment, an edge on the upper lid is arranged to abut on a surface on the lower lid and on the edge of the container in such a way that too large a moment in the hinge connection does not occur. The abutting surfaces at the upper lid and the edge area on the lower lid and the container are established in such a way that in its open position the upper lid is situated at the opposite side of the position of the point of gravity in relation to the hinge with the upper lid closed.

[0012] When the refuse container is placed up along a wall, a fence, or a hedge at the household, a refuse collector will place it with the front side wall facing inward towards the wall, the fence or the hedge, and with the rear side wall facing outwards. With the refuse container placed in this way, the lower lid is to be opened by gripping it at an edge area at the front side wall of the refuse container facing inward towards the wall, the fence or the hedge. This is impractical. For a user to fill refuse into the refuse container it is practical that he only has to open the upper lid from the outward facing edge area in order to fill refuse into the refuse container. This can take place by gripping the upper lip at the edge area at the rear side wall of the container facing outward towards the person filling refuse into the refuse container.

The Drawing

[0013] The invention will hereafter be described more closely with reference to the accompanying drawing, where:

- Fig. 1 is a side view of a refuse container with a lid according to the invention,
 Fig. 2 is a first section through a first embodiment of a lid according to the invention,
 Fig. 3 is a second section through the first embodiment of a lid according to the invention,
 Fig. 4 shows a partial view of a refuse container with a second embodiment of a lid according to the invention, and
 Figs. 5 - 9 show partial views of details of the construction shown in Fig. 4.

Description of Embodiments

[0014] Fig. 1 illustrates a refuse container 1 with an embodiment of a lid 2 according to the invention. The refuse container 1 is of a kind with two wheels 3 on an axle 4 and which is intended for being transported by tipping about the axle 4 and pushing or drawing in a preferred direction of travel illustrated with the arrow A. The refuse container comprises a bottom 5 with side walls 6 extending upwards from the bottom 5. The side walls 6 are provided with an edge area 7 delimiting an aperture (not shown) under the lid 2. The lid 2 consists of a lower lid 8 and an upper lid 9. The lid 2 is mounted on the refuse container by the lower lid 8 being hinged to a rear side wall 11 by means of a hinge 10.

[0015] In the shown embodiment, the lower lid 8 consists of a frame element (see Fig. 2) and the upper lid 9 consists of a plate element (see Fig. 2). The upper lid 9 is mounted to the lower lid 8 by means of a hinge 12. The lower lid 8 is thus intended for, together with the upper lid 9, to be opened by tipping in direction as illustrated with the arrow B, and the upper lid 9 is intended to be opened as illustrated with the arrow C.

[0016] In connection with emptying the refuse container 1, the container 1 will be transported by pulling or pushing in the preferred direction of travel A from a household to a refuse-collecting truck and back again to the household. Emptying at the refuse-collecting truck occurs by lifting the refuse container and tipping it about the edge area at a front side wall 13. By tipping, the lid 2 comprising lower lid 8 and upper lid 9 will be opened by the lower lid 8 pivoting about the hinge 10, and refuse will be discharged from the refuse container 1. After emptying, the refuse container 1 will be transported in the preferred direction of travel A back to the household and placed e.g. up against a wall, a fence or a hedge with a front side wall 13 facing inward towards the wall, the fence or the hedge, and with the rear side wall 11 facing outward.

[0017] Fig. 2 illustrates a partial section through a first embodiment of a lid 2 according to the invention, as seen the said direction of travel. The lower lid 8 consists of a frame element with an edge area 14 extending along a rim 15 of an aperture 16 in the lower lid 8. Along the edge area 14, the lower lid 8 is provided with an annular flange 17 around the aperture 16. The flange 17 extends upward from an upper side 18 on the lower lid 8. The flange 17 is provided with air holes 19 creating access between an inner side 20 and an outer side 21 of the flange 17. Alternatively, air holes 19 can be omitted if one desires to reduce obnoxious smells from the content of the container. At its outer edge 22, the lower lid 8 is provided with an annular abutment flange 23 resting on the upper side of the edge area 7 of the container. This flange 23 has also a projecting part 23' used for accommodating the hinge 10.

[0018] The upper lid 9 consists of a plate element extending over the lower lid 8 and the aperture 16 in the lower lid 8. The upper lid 9 is provided with an annular flange 24. The flange 24 extends downwards from the underside 25 of the upper lid 9. The flange 24 extends within the flange 17 on the lower lid and serves as a drip nose ensuring that condensed water formed at the underside 25 of the upper lid 9 drips down into the container. The flange 24 thus has an outer side 26 facing the inner side 20 of the flange 17 on the lower lid 8. Alternatively, the flange 24 may be placed outward of the flange 17 of the lower lid 8. Between the flange 17 on the lower lid 8 and the flange 24 on the upper lid 9 there is formed an interspace m with a distance a. Alternatively, the two flanges 17, 24 may be in sliding engagement.

[0019] At two opposite outer edges 27, the upper lid 9 is provided with a hinge flange 28 (only one shown) extending downwards and overlapping the flange 23 on the lower lid 8. The flange 28 may be extended over a greater area or over largely over all the side edge 27 of the upper lid 9 in order to achieve a reinforcement effect. The upper lid 9 and the lower lid 8 are in the shown embodiment mutually connected by means of pins 29 extending through the flanges 28 and 23. The upper lid 9 may thus be pivoted in relation to the lower lid 8 by turning about the pins 29.

[0020] Fig. 3 illustrates a section as seen perpendicularly to Fig. 2. The flange 24 running at the underside 25 of the upper lid 9 is illustrated with a stippled contour. The flange 17 running along the edge area 14 of the lower lid 8 is illustrated with a sharp contour. It is seen that the upper lid 9 rests on the upper side of the flange 17. In a plane perpendicular to the plane of the figure, the flange 17 on the edge area 14 of the lower lid 8 extends upwards under formation of an angle α in relation to the lower lid 8. The flange 24, which runs at the underside of the upper lid 9, extends downwards under formation of an angle β in relation to the upper lid 9. The angle β and the angle α are largely complementary for forming an angle of 180° . This angling of the parts of the flanges 17, 24 at the side of the container opposite to the

hinge 10 between the lower lid and the container ensures that there is not formed a pocket where refuse may be collected when the refuse container is emptied.

[0021] The upper lid 9 comprises an edge 30. The lower lid 8 comprises an abutting surface 31. By pivoting the upper lid 9 relative to the lower lid 8, the edge 30 on the upper lid 9 will abut on the surface 31 on the lower lid 8. The edge 30 on the upper lid 9 and the abutting surface 31 on the lower lid 8 are disposed in such a way that when the edge 30 abuts on the surface 31, a point of gravity (not shown) of the upper lid 9 will be situated in a first vertical plane V_1 which on the Figure is extending to the right of another vertical plane V_2 through the pins 29. Thereby the upper lid 9 remains in open position when the edge 30 abuts on the surface 31.

[0022] In the above the invention has been described with reference to a specific embodiment of a lid intended to be mounted to a type of refuse container with two wheels as illustrated in Fig. 1.

[0023] The lid according to the invention could, however, also be provided in other embodiments for use in connection with other kinds of refuse containers, so-called three- and four-wheeled refuse containers.

[0024] In every type of container the upper lid 9 may be hinged on the lower lid 8 at an arbitrary one of the three other edge areas. The two hinges (lower lid/container and upper lid/lower lid) thus do not have to be disposed opposite to each other. Alternatively, there may be provided plural upper lids 9 for a lower lid 8 and which are placed with a suitable hinging to the lower lid 8.

[0025] In Figs. 4 - 9 there is illustrates a second embodiment of a refuse container 1 and a lid 2 according to the invention. Identical or corresponding parts will be designated with the same reference numbers and hence not be explained in details. In the following there will be given an explanation of the differences.

[0026] In the upper lid 9 there is mounted a locking means 32. The locking means 32 comprises a handle 33 at the outside for operating and establishing a locking together of the upper lid 9 and the lower lid 8. The locking occurs by a catch 34 engaging under a nearby edge area for the aperture 16 in the lower lid. At the same time the position of the handle 33 will indicate whether the catch 34 is in a locked position or an open position.

[0027] The upper lid 9 is hinged to the lower lid 8 at an edge area opposite to the first side wall 6. The upper lid 9 has such a length that its edge 35 at the said first side wall 6 extends approximately to the outer edge of the lower lid 8. As the upper lid at the same time is lifted free of the lower lid over a part of its width, there will appear a gripping edge at the edge 35 facilitating the user's opening the upper lid 9.

[0028] The flange 28 of the upper lid 9 accommodating the hinge pin 29 is extended by parts indicated with 36 which extend largely in parallel with the flange 24 of the upper lid and largely in all of the longitudinal direction of the upper lid. Hereby there is achieved a reinforcing

of the upper lid 9.

[0029] In Fig. 7 it is seen that the flange 28 is provided with a projecting stud 37. The stud 37 is intended for releasable snap engagement with a notch 38 formed in the lower lid 8. When filling the container, the upper lid 9 (in quiet weather) can remain standing in a mainly vertical position with the stud 37 in snap engagement with the notch 38. Hereby the filling is facilitated.

[0030] In Fig. 7 it is furthermore seen, that the upper lid 9 in its fully open position will have a point 39 engaging an abutment point 40 on the lower lid and a point 41 abutting on an abutment point 42 at the edge area 7 of the container. By having several abutment points 40,42 there is achieved a reduced load and lesser risk of damaging the pin 29 with the upper lid 9 fully opened.

[0031] In Figs. 8 and 9 there is shown two opening situations when using the lid 2 according to the invention. In fig. 8 only the upper lid 9 is opened and placed in its vertical position, ready for filling with refuse. In this figure it is seen at the same time with great clarity how the flange 17 is sloping for avoiding pocket formation when emptying the container.

[0032] In Fig. 9 there is illustrated a situation where the container is open for emptying as the lower lid 8 together with the upper lid 9 are pivoted to an open position. It is noted that the catch 34 for reasons of illustration is shown in its open position. The locking catch 34 will normally be turned 90° relative to the shown position in order to establish a locking engagement between the upper lid and the lower lid.

[0033] In Figs. 8 and 9 there is illustrated a pivoting handle 43 mounted at the lower lid 8. By transporting the refuse container 1, the handle 43 is pivoted through about 270°, so that it is situated above the lid and so that the curved part 44 of the handle can be gripped by the user with the purpose of an ergonomically correct transport.

Claims

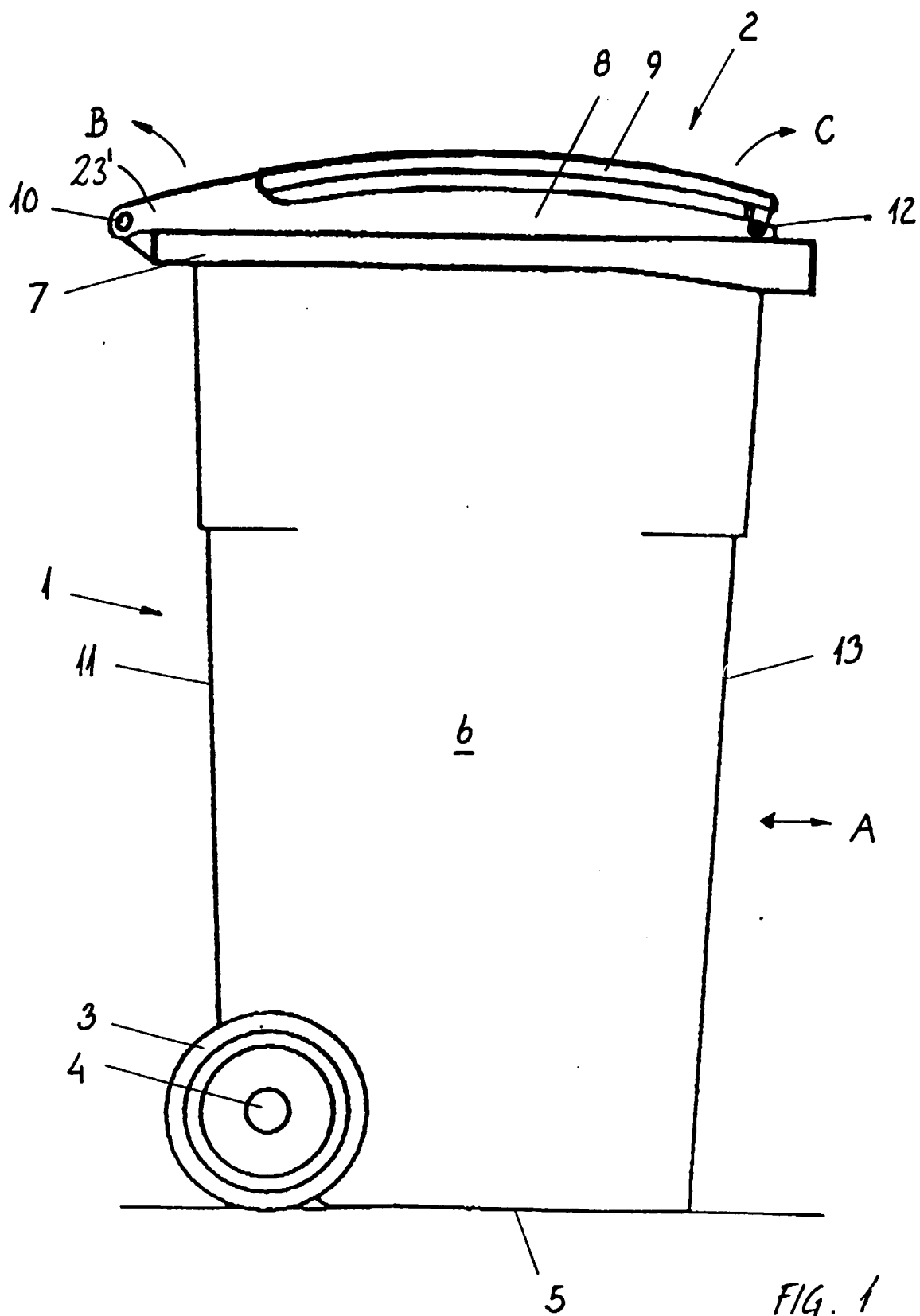
1. A lid (2) for a refuse container (1) with bottom (5) and side walls (6), **characterised** in that it comprises a lower lid (8) provided with a filling aperture (16) and which is hinged at an edge area (7) of a first side wall (6) and at least one upper lid (9) which is hinged to the lower lid (8) at one of the other side walls.
2. A lid according to claim 1, wherein the lower lid (8) consists of a frame element delimiting the aperture (16) with a rim (15), and that the upper lid (9) comprises a plate element arranged for covering the aperture (16) in the lower lid (8) and which at its underside (25) is provided with a first annular downwards oriented flange (24) extending towards the aperture (16) in the lower lid (8) as it extends along the rim (15) of the aperture (16), and that along an

edge area (14) of the aperture (16) the lower lid is provided with a second annular upwards oriented flange (17).

3. A lid according to claim 2, wherein the upwards oriented flange (17) is extending at the outer side of the first flange (24). 5
4. A lid according to claim 1, 2 or 3, wherein between the upper lid and the lower lid there is provided a locking means, preferably in the shape of a hand operated catch disposed in the middle of an edge area of the upper lid, and which may be engaged under an edge area for the aperture (16). 10
5. A lid according to any preceding claim, wherein the upper lid (9) is hinged to the lower lid at an edge area on a side wall opposite to the first side wall, and that the upper lid extends approximately to the outer edge of the lower lid at the first side wall. 15
6. A lid according to claim 5, wherein the flange (24) of the upper lid at least at the first side wall is oriented sloping downwards and outwards towards the aperture of the lower lid in order to avoid pocket formation. 20
7. A lid according to any preceding claim, wherein the lower lid (8) at two opposite edge areas (22) are provided with at least one further reinforcing flange (23) extending mainly perpendicularly downwards in relation to the lower lid (8), that the upper lid (9) at two opposite edge areas (27) are provided with a further reinforcing flange (28) extending mainly perpendicularly downwards in relation to the upper lid (9), and that the reinforcing flanges (23,28) are mutually connected with pins (29) for establishing the hinge connection between the upper lid and the lower lid. 30
8. A lid according to claim 7, wherein the reinforcing flanges (23,28) at the hinge connection is provided with snap acting engaging means for establishing a partly open, firmly held position of the upper lid (9). 35
9. A lid according to any preceding claim, wherein underside of the upper lid (9) rests against an upper edge of the upwards oriented flange (17) of the lower lid. 40
10. A refuse container with a lid according to any preceding claim, the container (1) having a rear wall (11), a front wall (13), side walls (6), and a bottom where there is mounted an axle (4) provided with wheels (3), the axle (4) disposed largely in parallel with the rear wall (11), and which refuse container (1) in a transport situation is intended to be tipped about the axle (4) with a preferred direction of travel (A) perpendicular to the axle (4), **characterised** in 45

that the lower lid (8) is mounted at an edge area (7) of the rear wall (11) by means of a hinge (10), and that the at least one upper lid (9) is hinged to the lower lid (8) at one of the other side walls.

11. A refuse container with a lid according to any of the claims 1 - 9, **characterised** in that the lid (2) is mounted on a refuse container with four side walls and at least three wheels, that the refuse container in a transport situation is arranged to be pushed in an arbitrary direction of travel as at least one of the wheels is pivotably attached to the container, that the lower lid (8) is mounted at an edge area (7) of a first side wall (6) by a hinge, and that said at least one upper lid (9) is mounted to the lower lid (8) by a hinge at one of the other side walls. 50



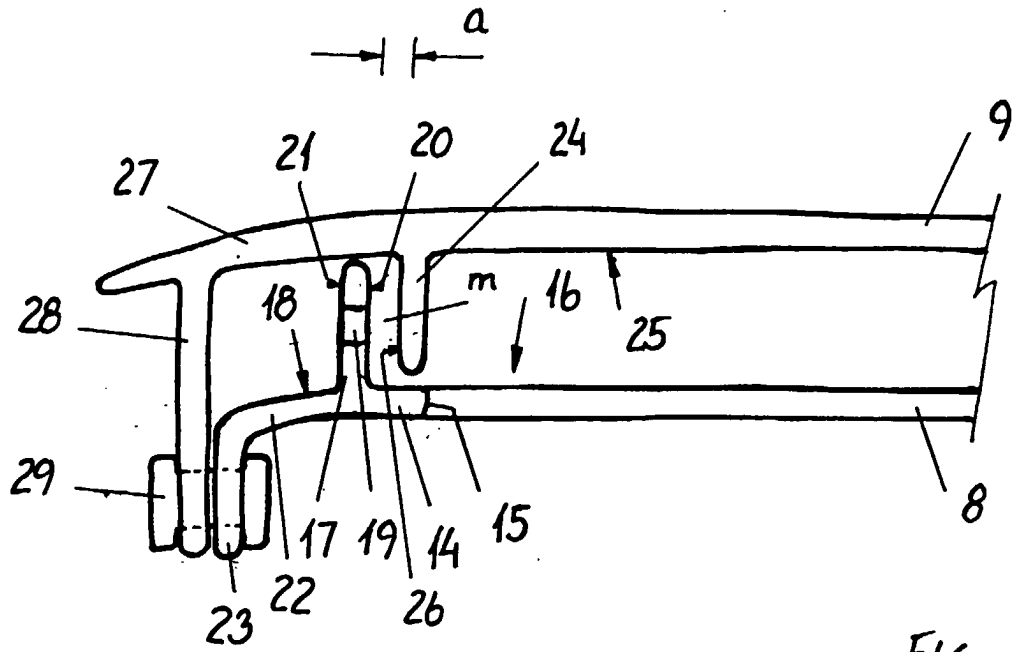


FIG. 2

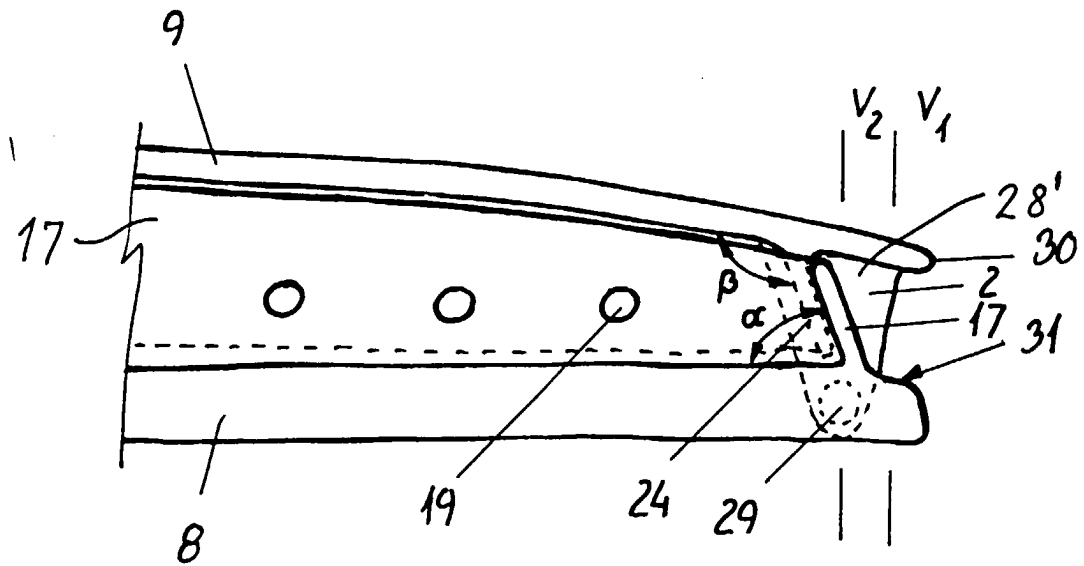
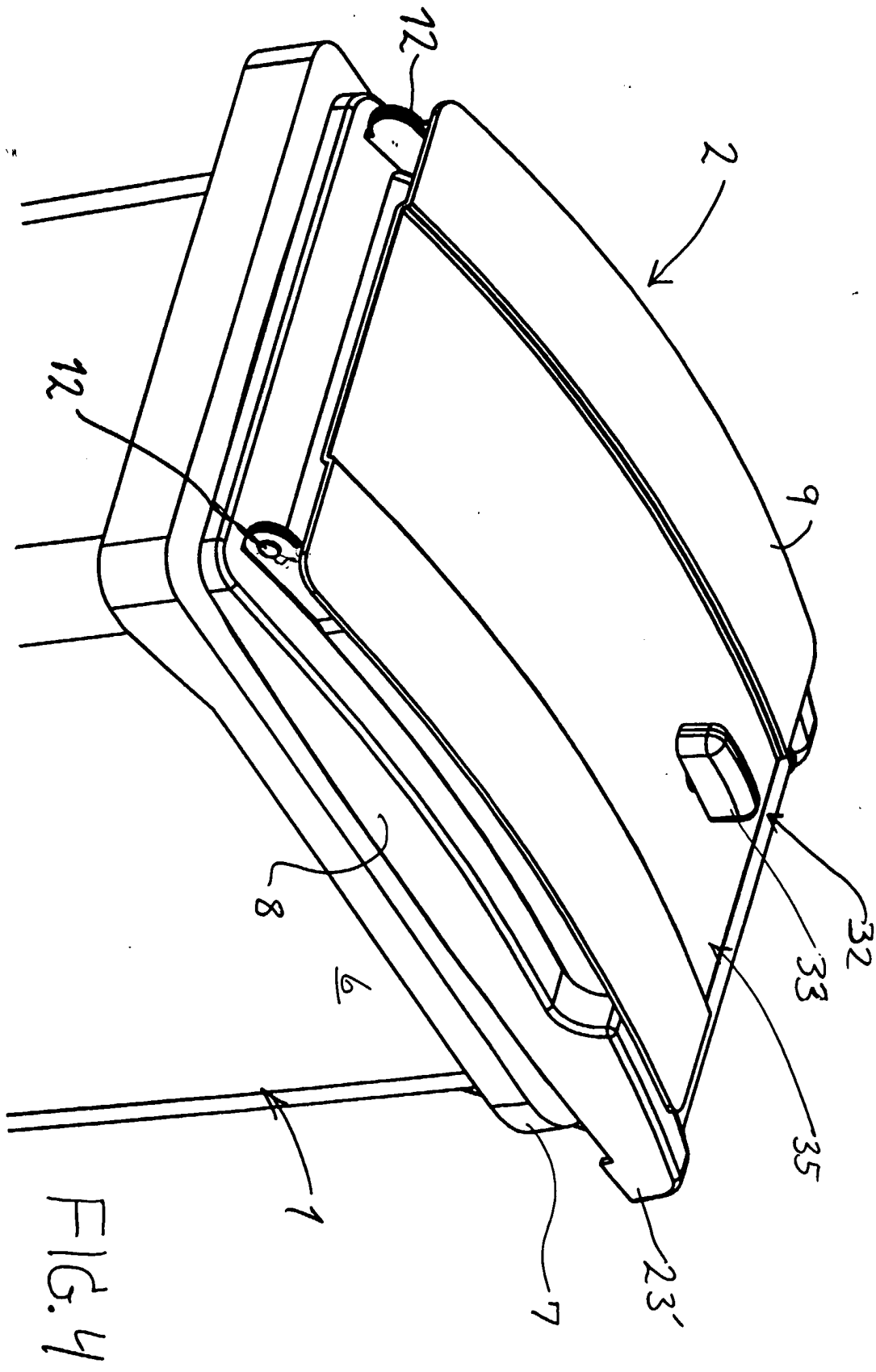
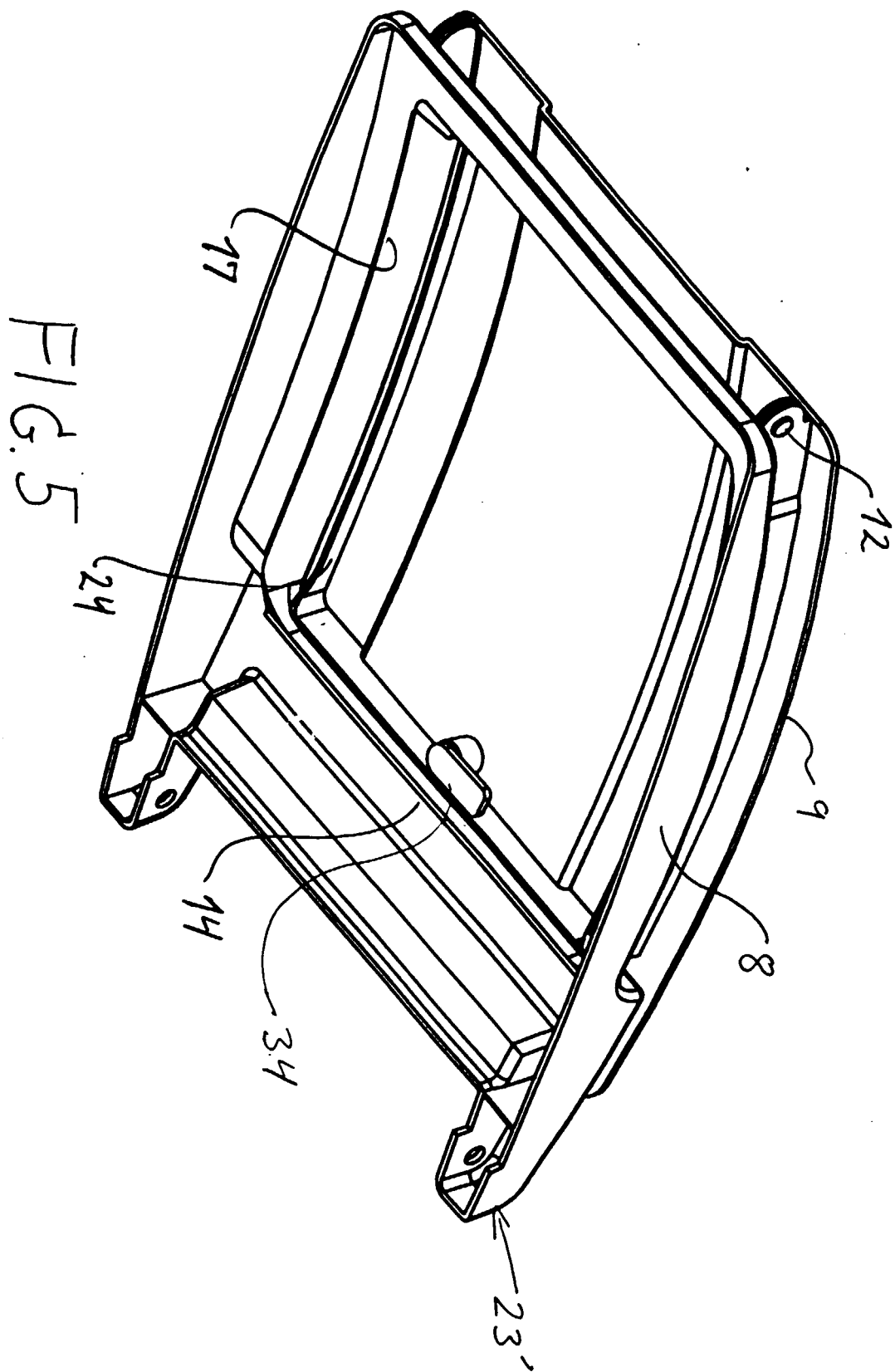
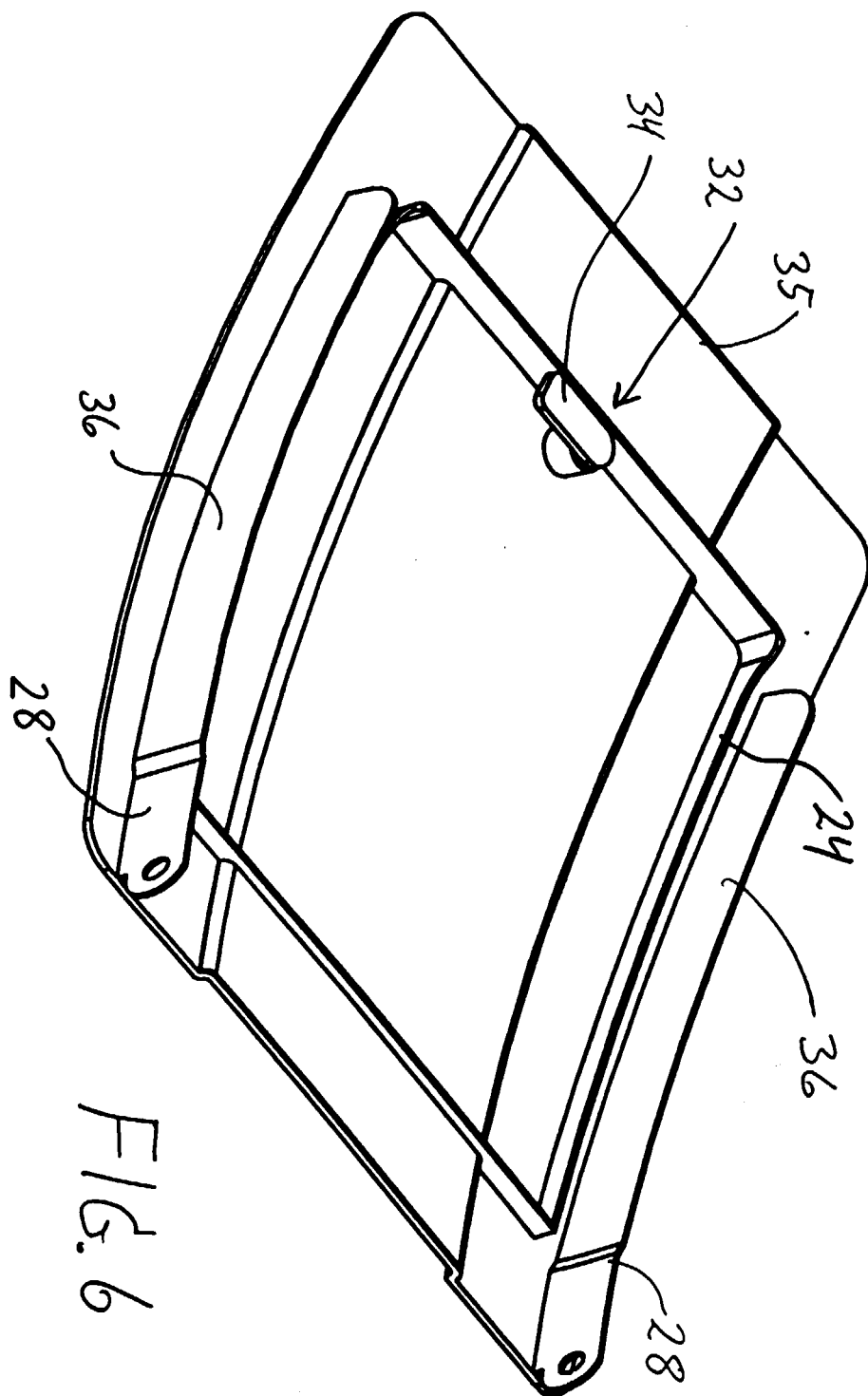
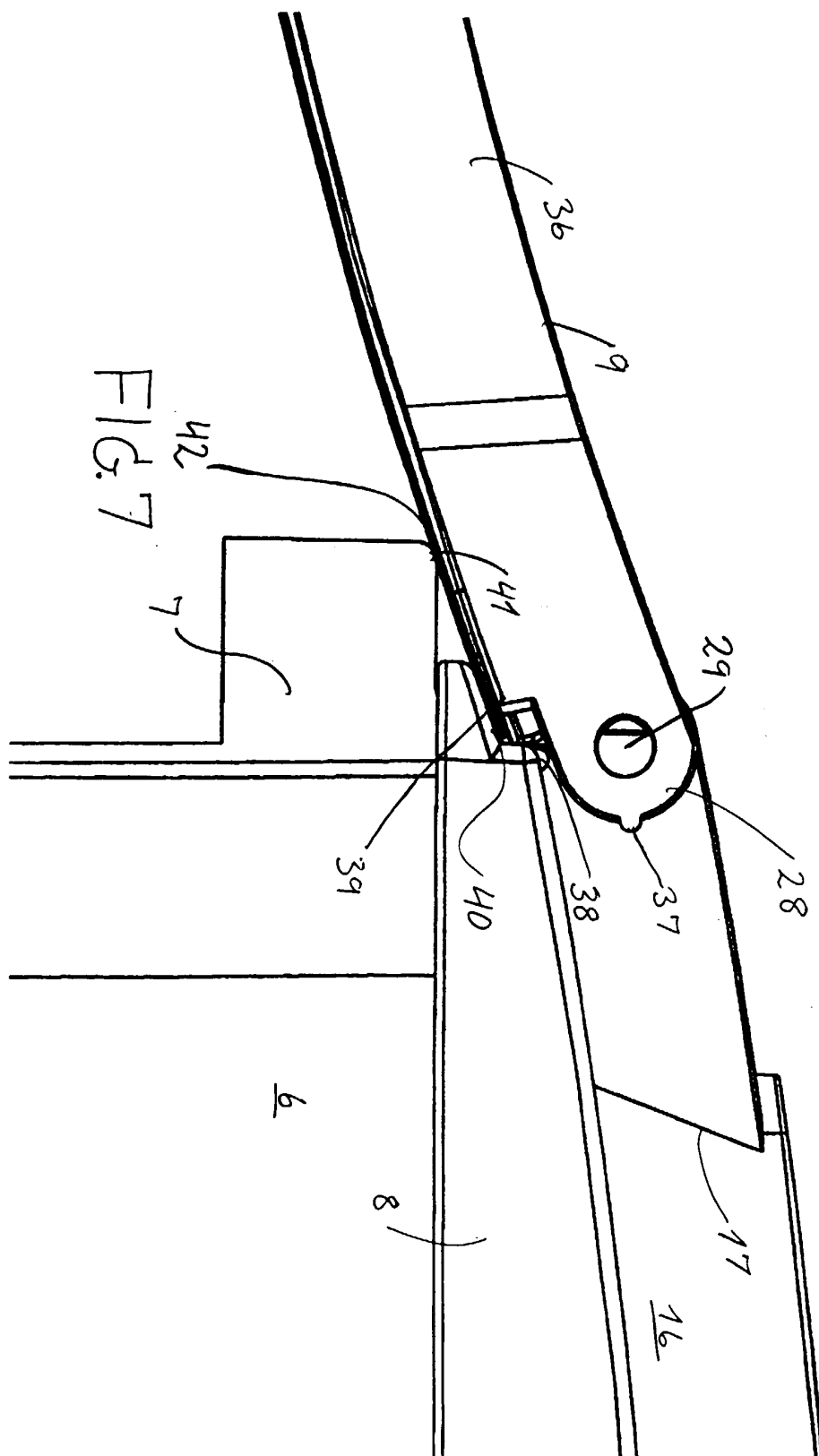


FIG. 3









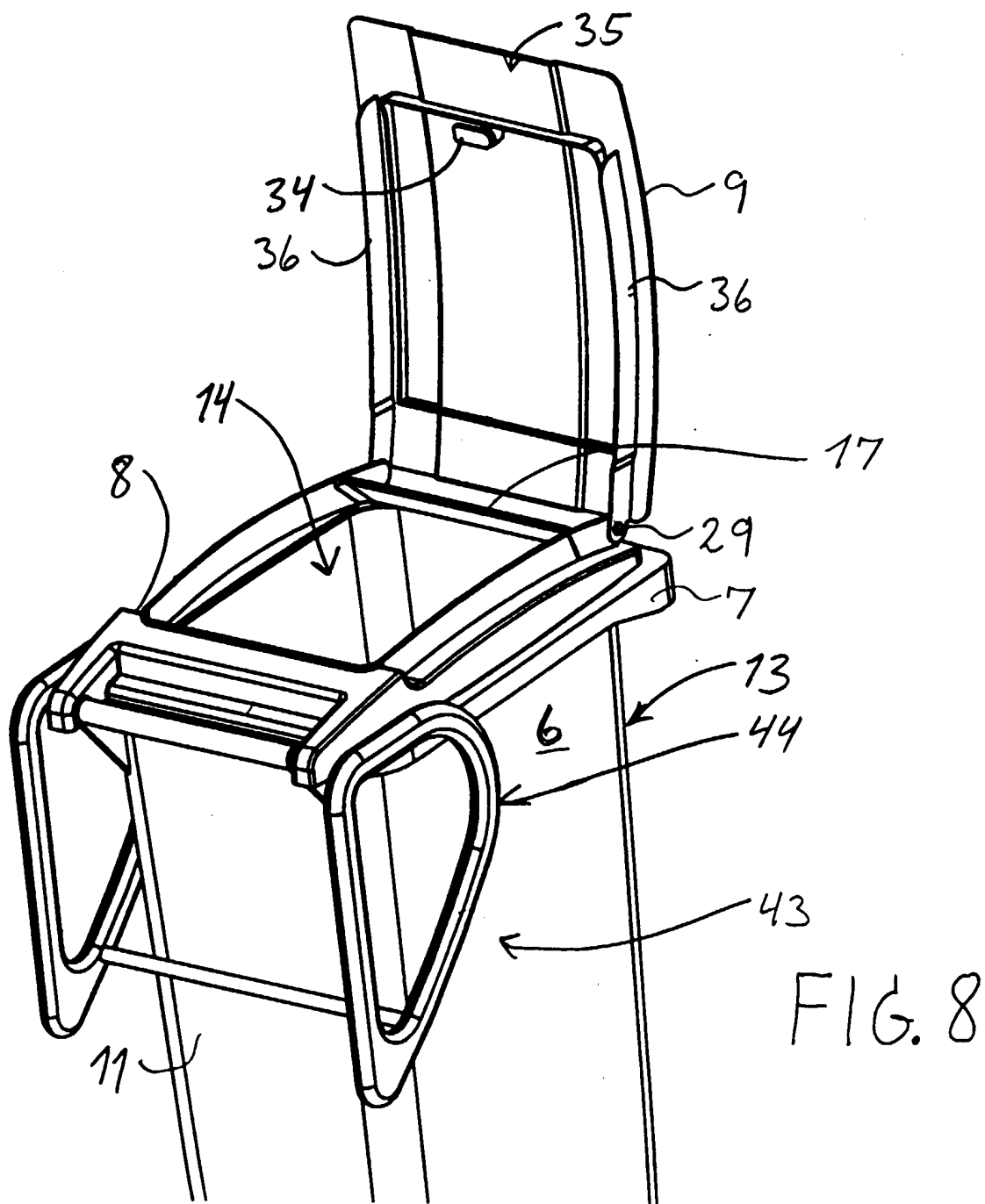
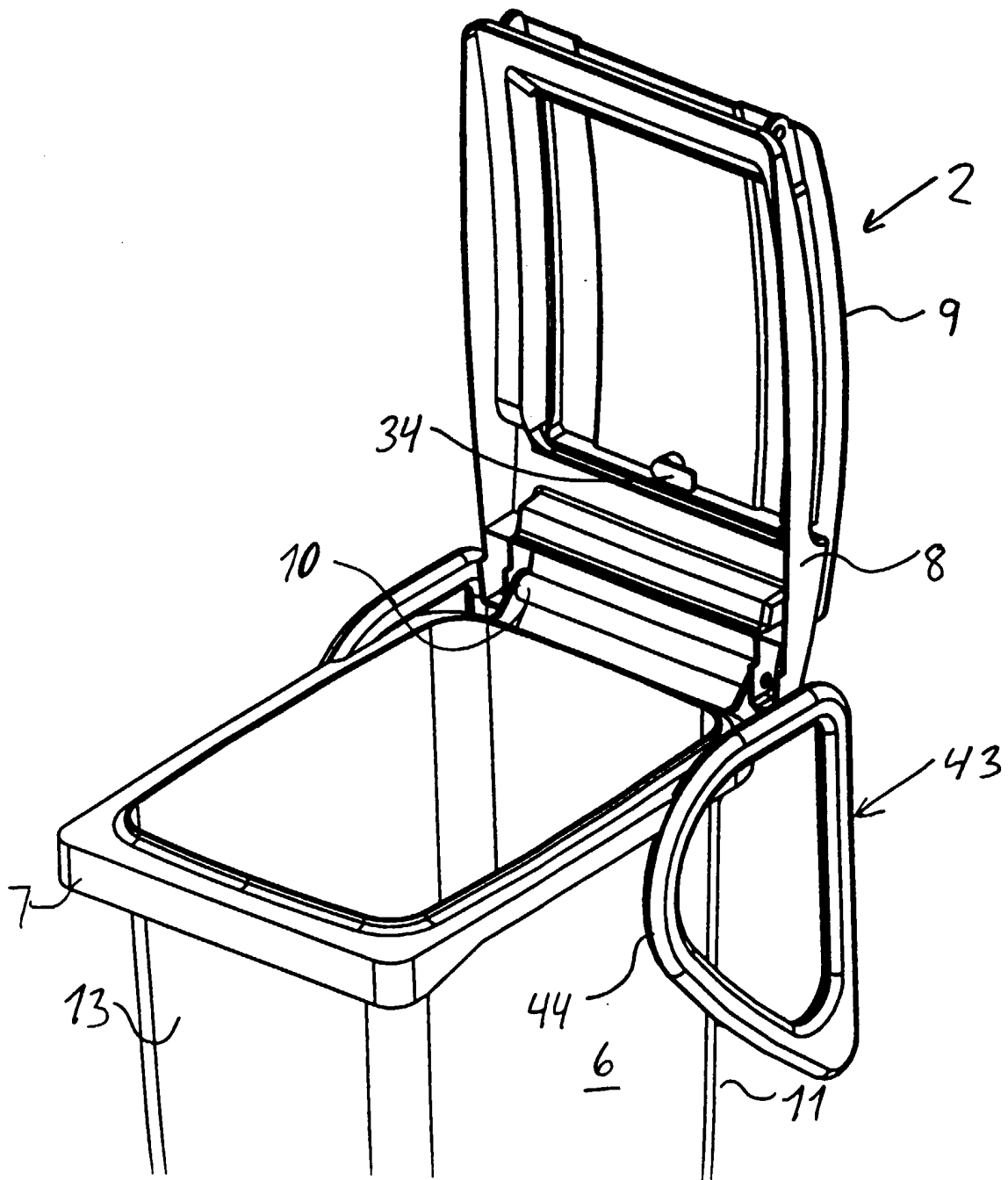


FIG. 9





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 12 3889

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	GB 2 294 869 A (EGBERT H TAYLOR & CO LTD) 15 May 1996 (1996-05-15) * page 2, line 2 - page 4, line 5 * * figure *	1,4,10, 11	B65F1/16
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 April 2000	Examiner Smolders, R
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ON EUROPEAN PATENT APPLICATION NO.**

EP 99 12 3889

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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25-04-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2294869 A	15-05-1996	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82