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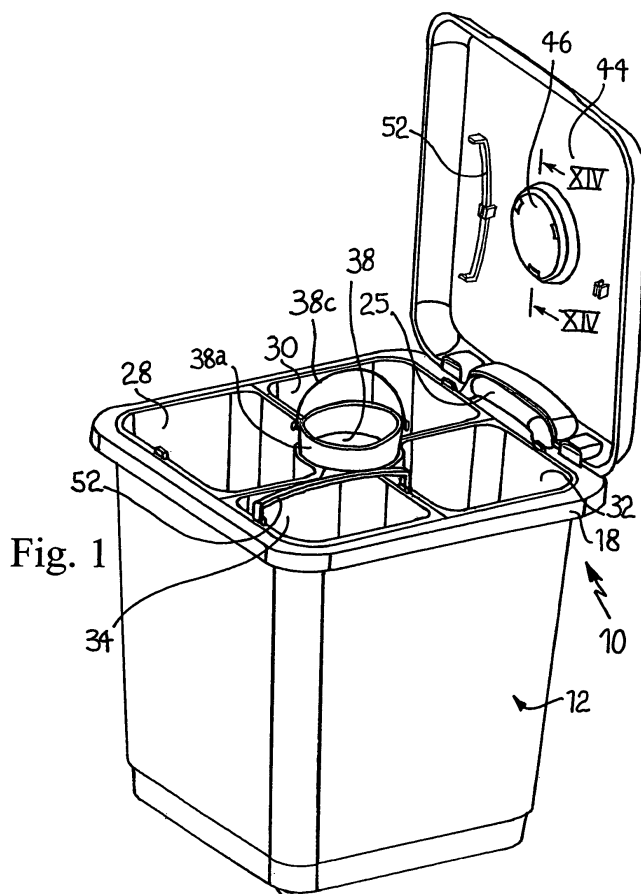
(84) Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR Designated Extension States: AL BA HR MK YU	(72) Inventor: Schiavone, Elio I-10080 Bosconero (TO) (IT) (74) Representative: Spandonari, Carlo Spandonari & Modiano s.r.l. corso Duca degli Abruzzi 16 10129 Torino (IT)
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(54)

Rubbish bin

(57) A housing (12) made of a synthetic material has a bottom (14) and a peripheral wall (16). Four elongated containers (28, 30, 32, 34) are arranged side-by-side in a square arrangement in the housing (12) and are shaped in such a way that, when assembled in the housing, they

form a close ring of containers having an outer profile matching with the inner profile of the peripheral wall (16), and an inner profile defining a circular recess (36) open at its upper end. A cylindrical fifth container (38) is removably inserted within the recess (36).



Description

line XIV-XIV.

[0001] The present invention relates to a rubbish bin, and more particularly to a rubbish bin suited for the practice of the waste separation.

[0002] As known, nowadays the user typically practices the waste separation by providing a plurality of rubbish bins and/or bags each having a kind of material to be separated assigned thereto, typically paper, glass, metals, plastics, and organic materials.

[0003] However, the large number of rubbish bins and bags causes mess and encumbrance in the home, as well as drawbacks concerning the spreading of smells, the inconvenience of filling and emptying several rubbish bins, and the like.

[0004] Therefore, it is a main object of the invention to provide a compact rubbish bin which makes the practice of the waste separation easier, and with which the materials are separated tidily and without drawbacks such as the above-mentioned ones.

[0005] The above object and other advantages, which will become apparent from the following description, are achieved by a rubbish bin having the features recited in claim 1, while the dependent claims state other advantageous features of the invention.

[0006] The invention will be now described in more detail with reference to a preferred embodiment shown by way of non limiting example in the attached drawings, wherein:

Fig. 1 is a perspective view of a rubbish bin according to the invention in an open configuration;

Fig. 2 is a front view of the rubbish bin of Fig. 1 in a closed configuration;

Fig. 3 is a rear view of the rubbish bin of Fig. 2;

Fig. 4 shows a detail of Fig. 3 to an enlarged scale;

Fig. 5 is a plan view of the rubbish bin of Fig. 1, where some parts have been removed for better clarity of illustration;

Fig. 6 is a view in cross section of Fig. 5 made along line VI-VI;

Fig. 7 is a view in cross section of Fig. 5 made along line VII-VII;

Figs. 8-12 are perspective views showing five respective, isolated elements of the rubbish bin according to the invention;

Fig. 13 shows five assembled elements of the rubbish bin according to the invention;

Fig. 14 is a view in cross section of Fig. 1 made along

[0007] With reference to the above Figures, a rubbish bin 10 comprises a housing 12 having a square bottom 14 (Figs. 6, 7) with rounded corners, and a slightly flaring peripheral wall 16 that is open at its upper end with a cantilever edge 18 bent downwards. Housing 12 is provided with four wheels aligned in pairs and connected to bottom 14. A first pair of aligned, rear wheels 22 (Fig. 3) are pivoted on fixed pins, while a second pair of aligned, front wheels 24 (Fig. 2) are pivot wheels. Housing 12 has an U-shaped handle 25 having two parallel rods 25a (Figs. 4, 6) which are slidably received within respective tubular guides 26 extending downwards from edge 18 of housing 12. A bag-holding pocket 27 arranged between tubular guides 26 has openings such as 27a formed on an outward wall thereof, and is provided with two toothed projections 27b rising from its upper end, which restrainedly engage corresponding slots 18a in edge 18 for the anchoring of holder 27 to the edge (Fig. 4).

[0008] Four elongated containers 28, 30, 32, 34, which are arranged side-by-side in a square arrangement within housing 12, rest on bottom 14 with their lower ends and can be drawn individually from the housing. As shown in Fig. 8 with reference to container 30, the four containers 28, 30, 32, 34 each have a mouth with a cantilever lip such as 30a provided with two aligned anchor seats 31. The four containers each engage a respective corner area of housing 12, and are shaped in such a way that, when assembled within the housing, they form a close ring of containers having an outer profile matching with the inner profile of peripheral wall 16, and an inner profile defining a circular central recess 36 (Fig. 7) open at its upper end. In particular, with reference to container 30 of Fig. 8, the four containers each have four flat side walls, of which two outward walls 30c, 30d match with the inner surface of the housing, and two inward walls 30e, 30f match with the side walls of the adjacent containers. In addition, a union wall such as 30g extends between the two inward walls of three containers, 28, 30, 32. The union wall is curved inwards into the respective container, so that the union walls of said three side-by-side containers define the above central recess 36. The fourth container 34, which is shown individually in Fig. 9, is smaller and has a rib 34a shaped to match with the ribs of the other containers, thereby defining a circular mouth for central recess 36 (see in particular Figs. 5, 13).

[0009] A fifth cylindrical container 38, which is shown individually in Fig. 10, is removably received in central recess 36. Cylindrical container 38 has a flaring upper mouth 38a provided with two diametrically opposed anchor ears 39 to which a handle 38c is anchored (Fig. 1) consisting of a metal wire bent into a semicircular shape. Cylindrical central container 38 is shorter than corner containers 28-34 and rests on a bulge 40 (Fig. 7) rising from a middle area of bottom 14 of the housing.

[0010] Preferably, the containers differ from one another in their coloration in order to be immediately rec-

ognizable.

[0011] Housing 12 is closed by a cover 44 that is hinged at the opposite sides of handle 25. Cover 44 centrally supports a cap 46 on its inward face, which is shaped to plug flaring mouth 38a of central container 38 when cover 44 is closed. Cap 46 is removably connected to cover 44. To this purpose, the cap is provided with three L-shaped tabs 48 arranged in circle, which restrainedly engage corresponding fins 50 formed on the cover (Fig. 14). By rotating the cap, tabs 48 disengages fins 50 and cap 46 is allowed to be detached from cover 44. Cover 44 also has two plastic handles 52 anchored to its inward face, which can be detached and anchored to seats 31 of two of the four corner containers (Figs. 1, 5, 13).

[0012] Rubbish bags (not shown) can be arranged in bag holder 27, which bags are shaped such that they can be inserted into, and line, the central container 38. The manufacturing of the bags is not within the scope of the invention and will be obvious to the person skilled in the art.

[0013] The above-described rubbish bin can be used in place of the traditional rubbish bins for practising the waste separation. Each container has a different kind of waste material assigned thereto, depending on its coloration. It has been found from statistics that the rubbish in the home includes a substantially equal amount of paper, glass, plastics and metals, while the amount of organic material is lower. Therefore, the central container, which is smaller than the other, is used for organic materials. Cap 46 attached to cover 44 effectively isolates the organic materials, which are the main source of smells, from the external environment. With the bin according to the invention, the user can carry all the rubbish to the separated rubbish skips in a single way, then he will empty each container into the corresponding rubbish skip. Alternatively, the user can draw and carry only the single container when full. When it is desired to empty the container of the organic materials only, cap 46 is detached from cover 44 and applied to the container, thereby preventing the spreading of smells. For drawing and carrying the corner containers, handles 52 are detached from the cover and attached to the containers as shown in Figs. 1, 5, and 13.

Claims

1. A rubbish bin, **characterized in that** it comprises

- a housing (12) made of a synthetic material with a bottom (14) and a peripheral wall (16),
- first four elongated containers (28, 30, 32, 34) which are arranged side-by-side in a square arrangement in the housing (12) and are shaped in such a way that, when assembled in the housing, they form a close ring of containers having an outer profile matching with the inner profile of the peripheral wall (16), and an inner profile

defining a circular recess (36) open at its upper end,

- a fifth container (38) removably inserted within the recess (36).

2. The rubbish bin of claim 1, **characterized in that** both said recess (36) and fifth container (38) have circular profiles.

3. The rubbish bin of claim 1 or 2, **characterized in that** said first four containers (28, 30, 32, 34) each have four flat side walls, of which two outward walls (30c, 30d) match with the inner surface of the peripheral wall, and two inward walls (30e, 30f) match with the side walls of the adjacent containers.

4. The rubbish bin of claim 3, **characterized in that** a union wall (30g) extends between the two inward walls (30e, 30f) of at least two of said first four containers (28, 30, 32), which is curved inwards into the respective container to define said recess (36).

5. The rubbish bin of any of claims 1-4, **characterized in that** said housing (12) is provided of a U-shaped handle (25), with two parallel rods (25a) which are inserted with possibility of being pulled out in corresponding tubular guides (26) extending parallel to a side wall of the housing (12).

6. The rubbish bin of claim 5, **characterized in that** it comprises a bag-holding pocket (27) arranged between said tubular guides (26) and anchored to the housing.

7. The rubbish bin of any of claims 1 to 6, **characterized in that** said housing (12) is closed at its upper end by a cover (44) that is hinged to the peripheral wall (16) and supports a cap (46) on its inward face, which is shaped to plug the upper end of the central container (38) when the cover (44) is closed.

8. The rubbish bin of claim 7, **characterized in that** said cap (46) is provided with anchor means (48) restrainedly engageable with corresponding means on the cover (44) for the removable connection of the cap to the cover.

9. The rubbish bin of claim 8, **characterized in that** said anchor means comprise L-shaped tabs (48) arranged in circle and restrainedly engageable with corresponding fins (50) formed on the cover, whereby a rotation of the cap causes the tabs (48) to be disengaged from the fins (50), thereby allowing the cap (46) to be detached from the cover (44).

10. The rubbish bin of any of claims 7 to 9, **characterized in that** said first four containers (28, 30, 32, 34) each have an upper mouth provided with two aligned

anchor seats (31), and **in that** the cover (44) has at least one handle (52) anchored to its inward face, which is detachable to be connected to the seats (31) of one of said first four containers.

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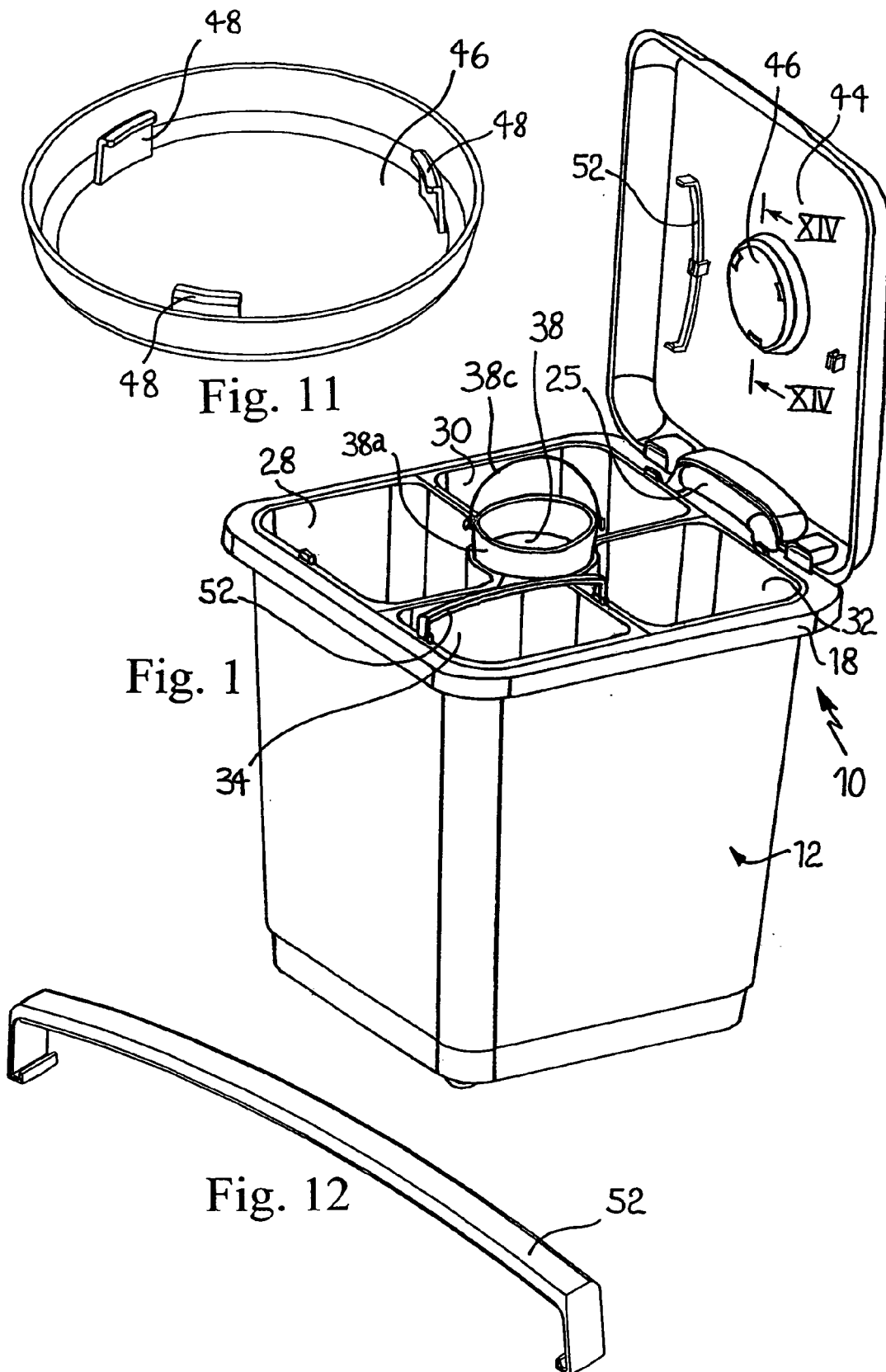
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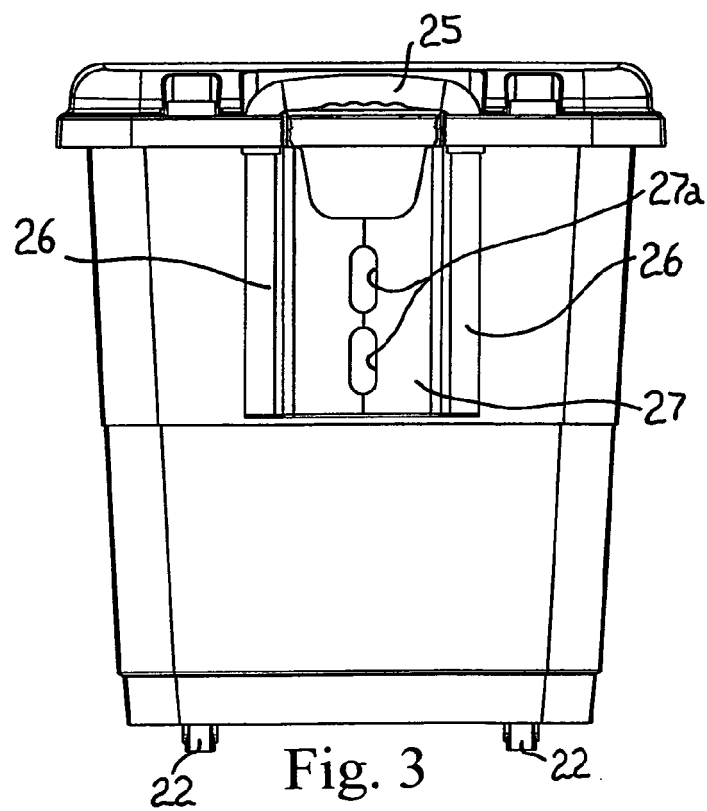
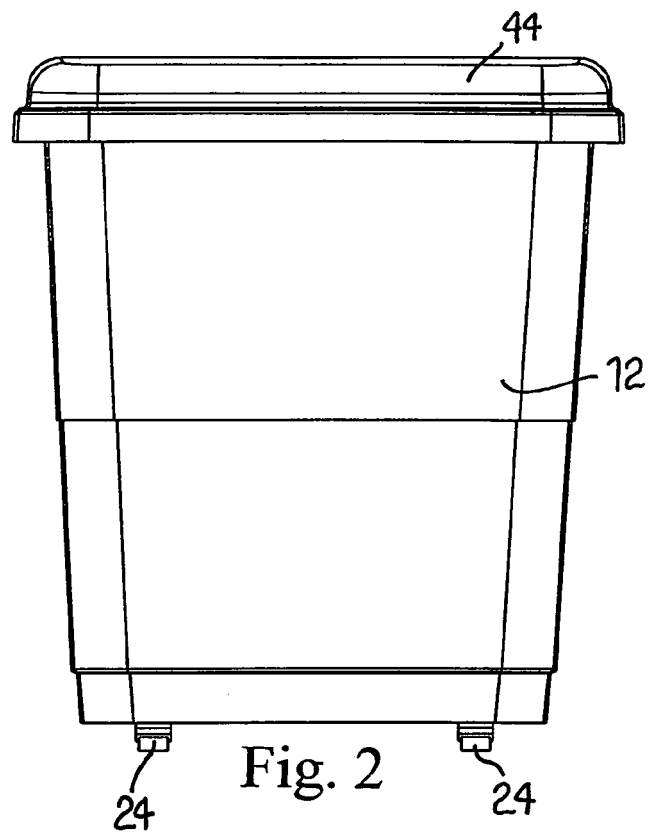
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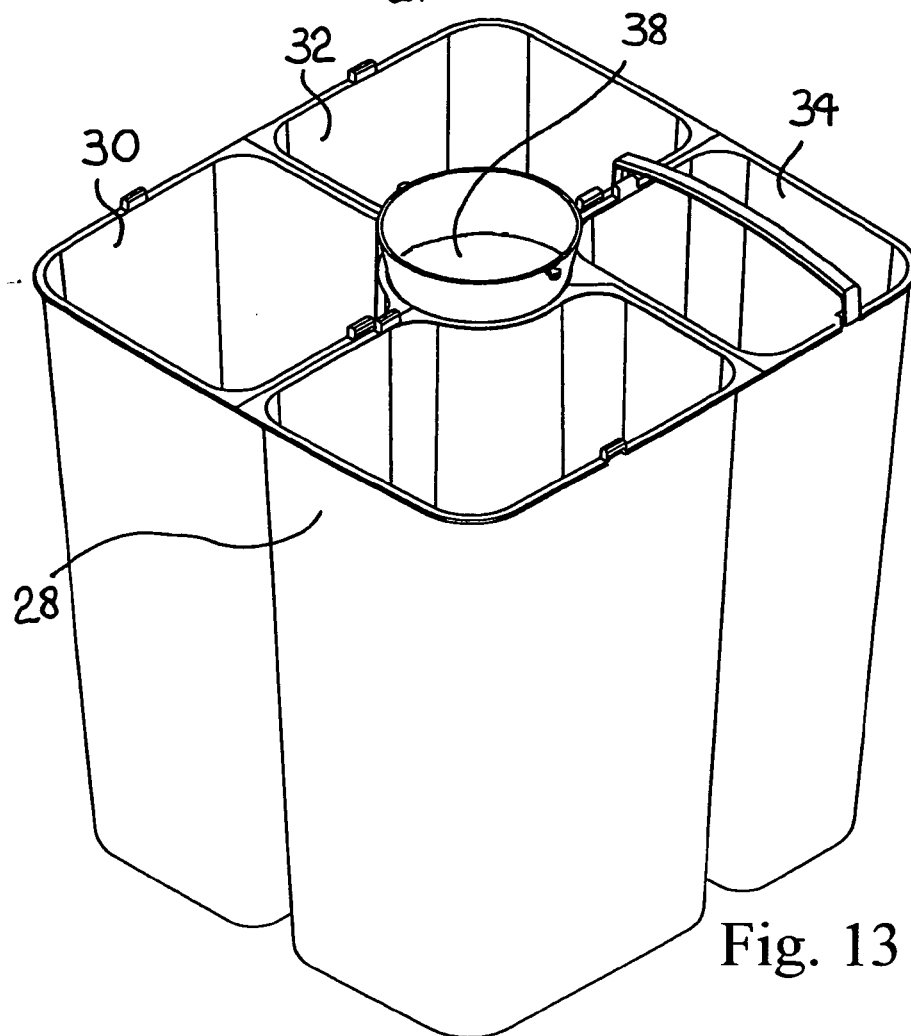
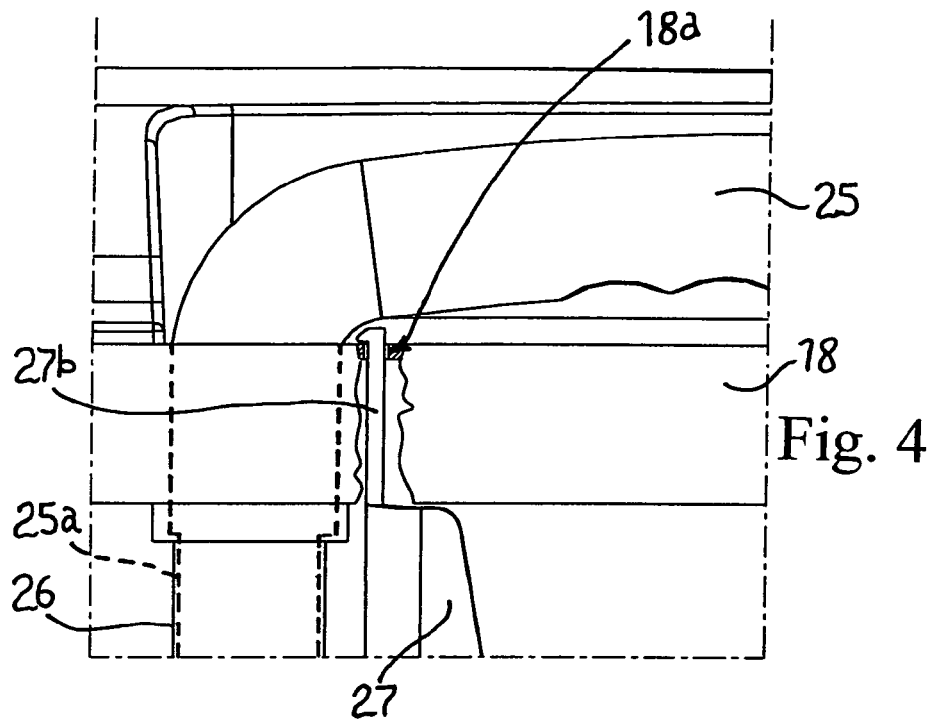
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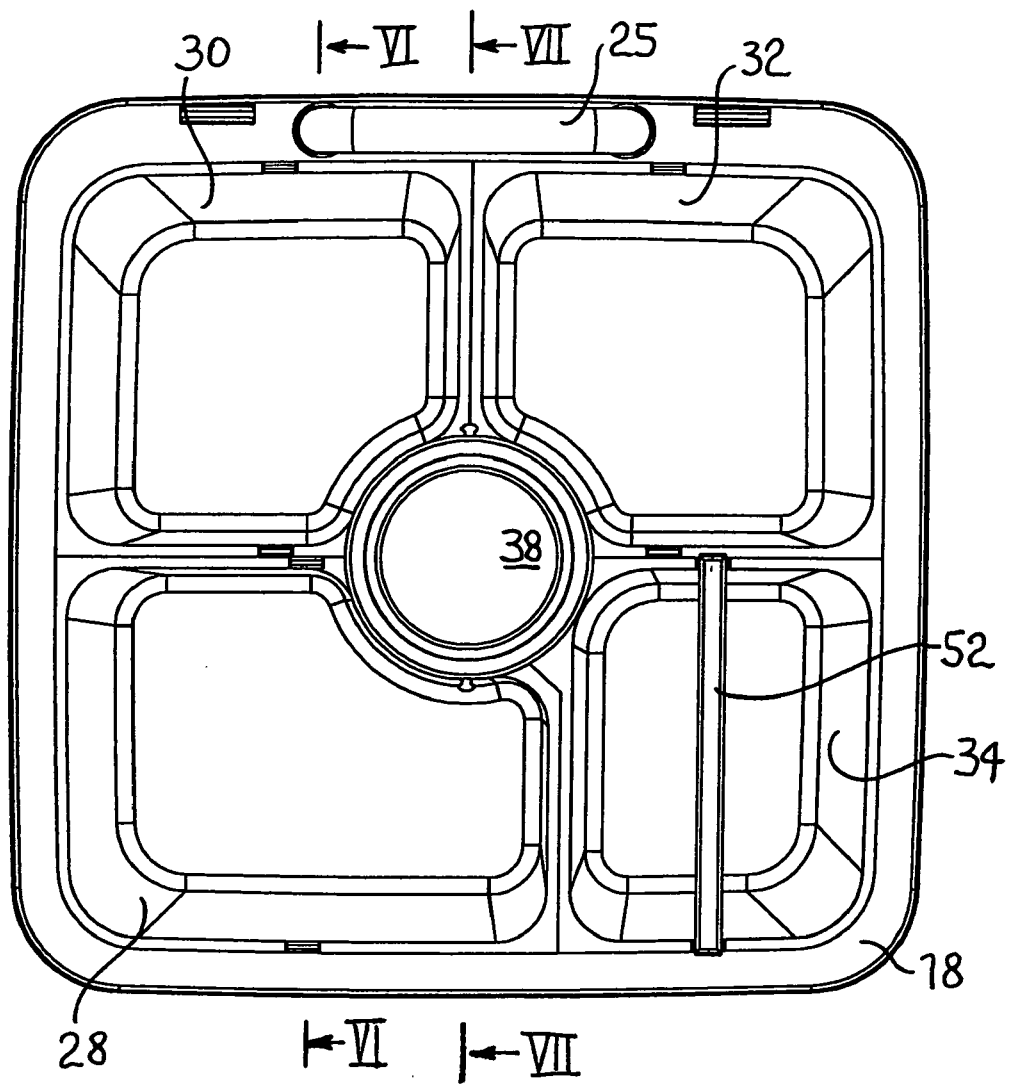


Fig. 5

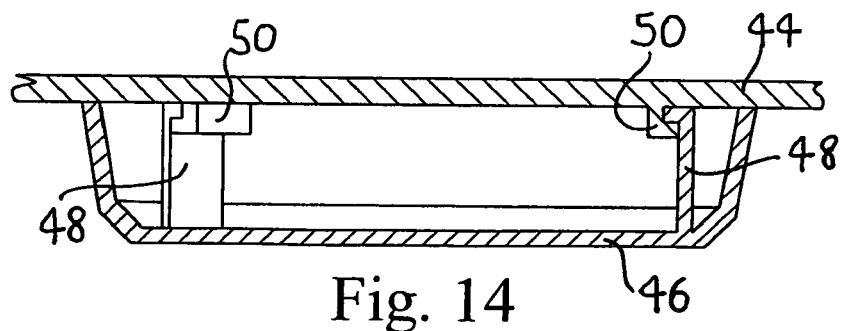


Fig. 14

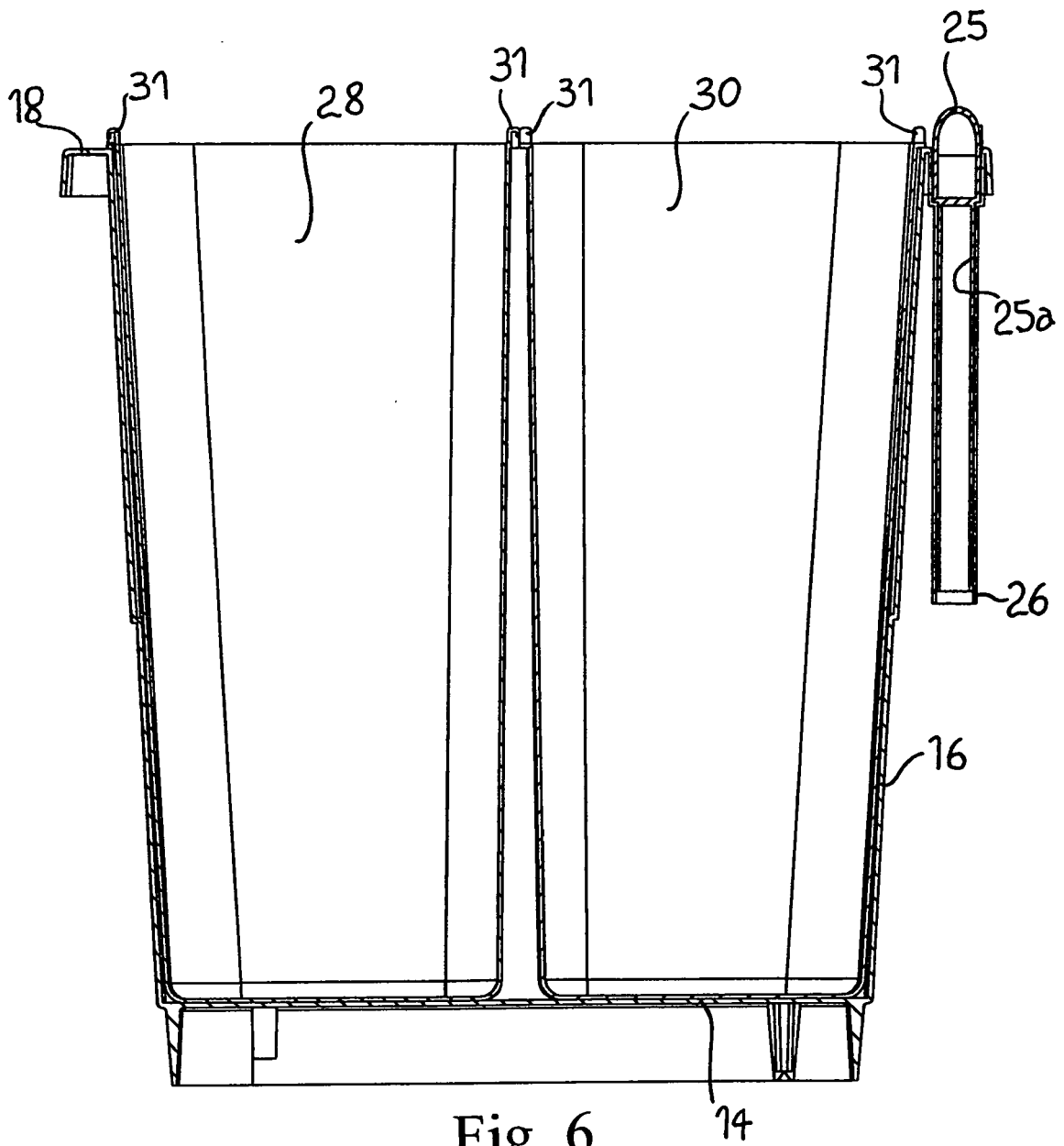
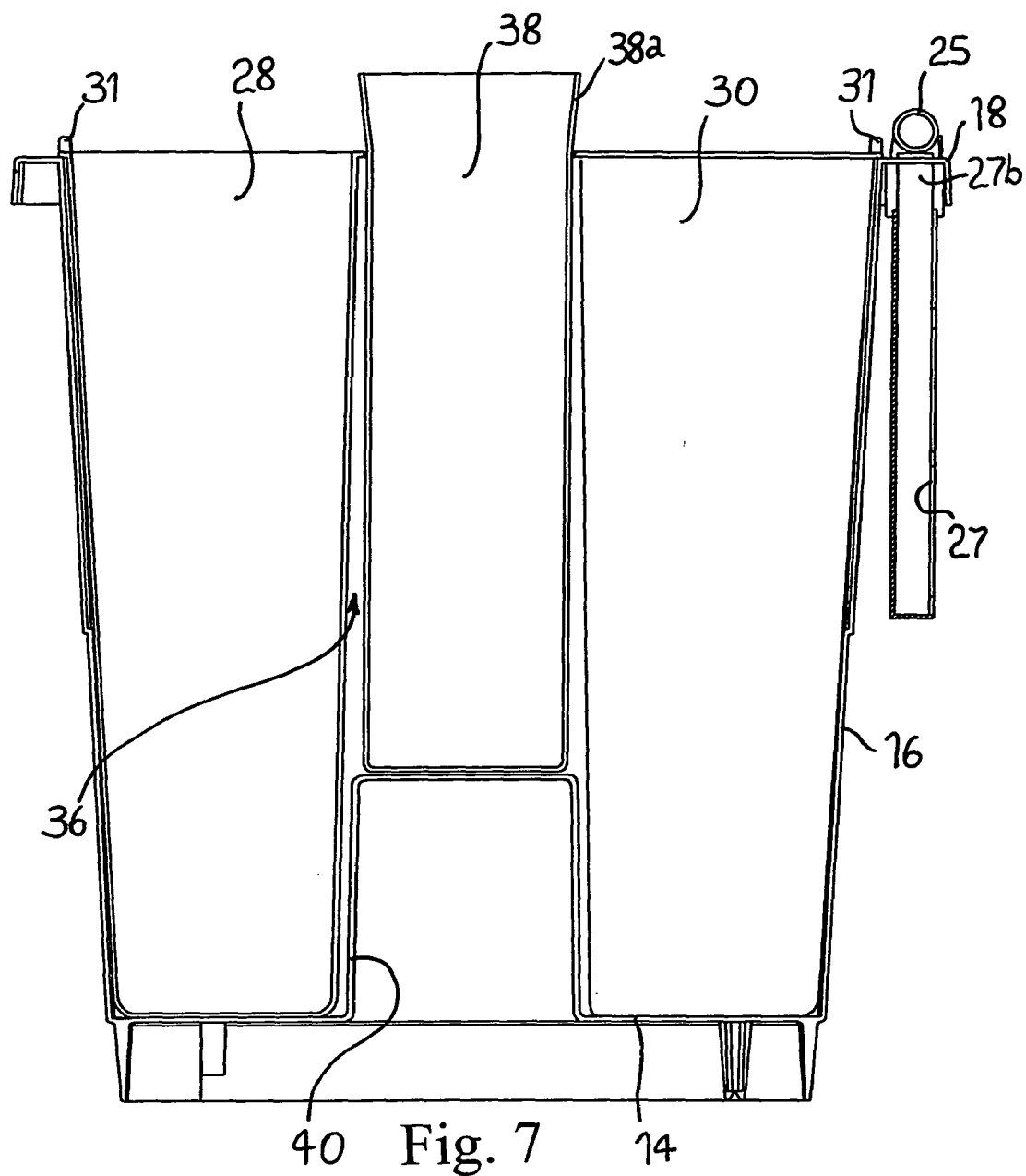


Fig. 6



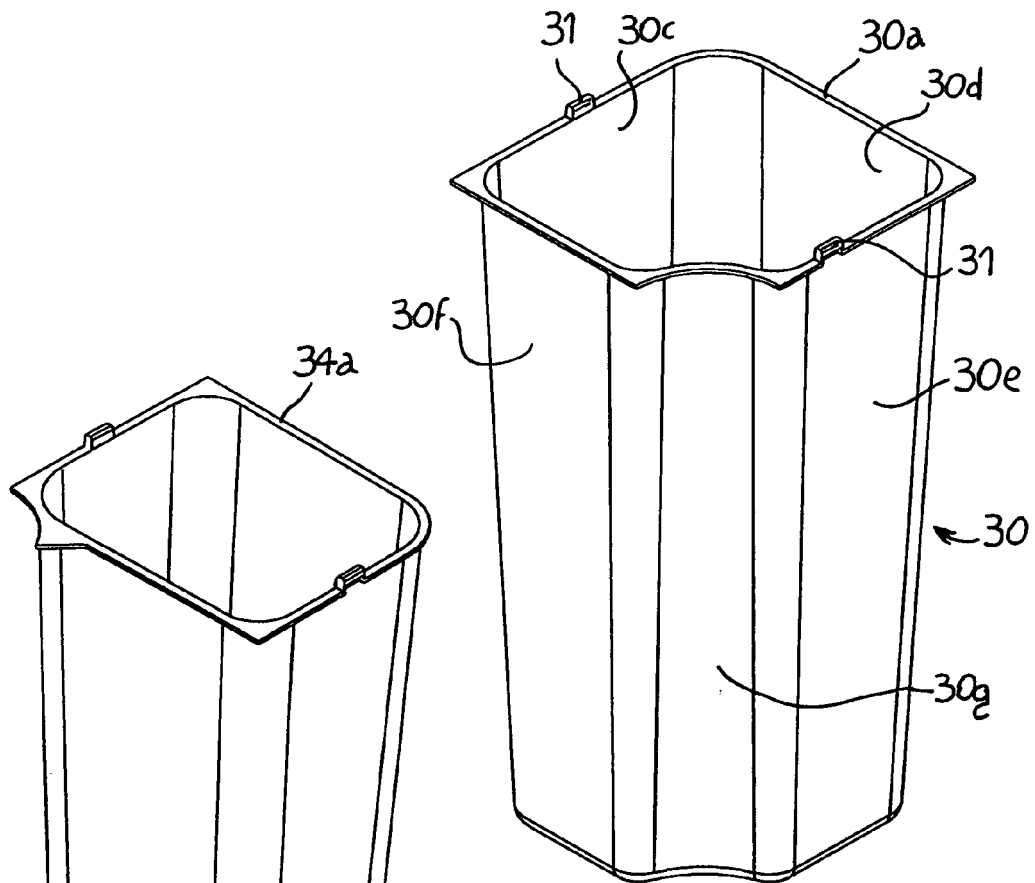


Fig. 8

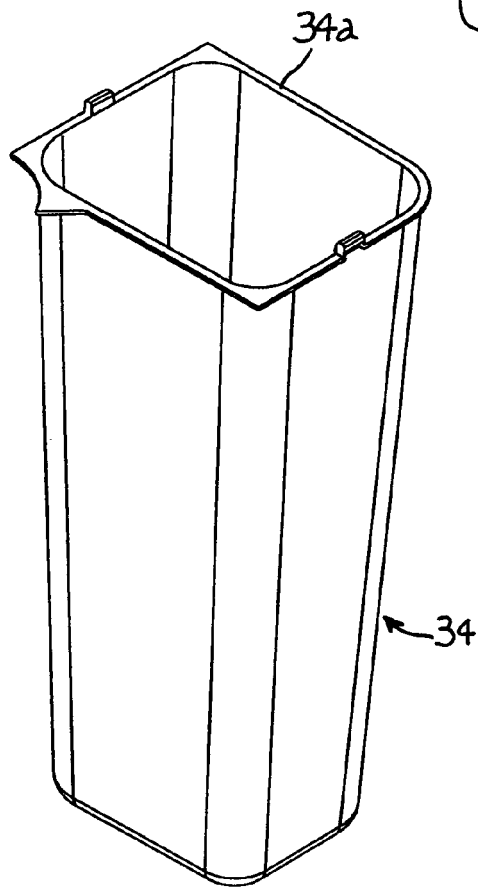


Fig. 9

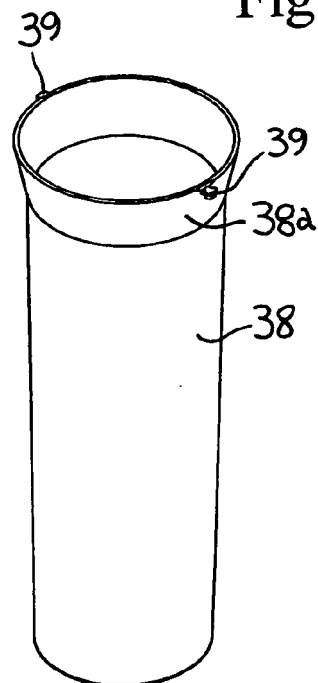


Fig. 10



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Application Number
EP 06 42 5558

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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		13 November 2006	Smolders, Rob
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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