



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 467 166 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

13.10.2004 Bulletin 2004/42

(51) Int Cl.7: **F25D 25/00, B65D 25/28**

(21) Application number: **04101231.1**

(22) Date of filing: **06.04.2004**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**

Designated Extension States:

AL LT LV MK

(30) Priority: **07.04.2003 IT MI20030163 U**

(71) Applicant: **WHIRLPOOL CORPORATION**
Benton Harbor Michigan 49022 (US)

(72) Inventors:

- **Casoli, Fiorenzo, c/o Whirlpool Europe s.r.l.**
21025 Comerio (IT)

- **Pansardi, Carmine, c/o Whirlpool Europe s.r.l.**
21025 Comerio (IT)
- **Pieretto, Davide, c/o Whirlpool Europe s.r.l.**
21025 Comerio (IT)
- **Russo, Antonio, c/o Whirlpool Europe s.r.l.**
21025 Comerio (IT)
- **Zambon, Marco, c/o Whirlpool Europe s.r.l.**
21025 Comerio (IT)

(74) Representative: **Guerci, Alessandro**
Whirlpool Europe S.r.l.
Patent Department
Viale G. Borghi 27
21025 Comerio (VA) (IT)

(54) **Slidable and removable drawer for refrigerator**

(57) For a refrigerator (1), a slidable and removable drawer (1) comprises an internally hollow (at 10) body (2) defined by walls (4, 5, 6, 7) rising from a base (3). An opposing pair (4, 5) of these walls supports a gripping

element (11) for the drawer (1), said gripping element (11) being hinged to said walls (4, 5) and being able to assume at least one working position in which it lies above the cavity of said drawer body.

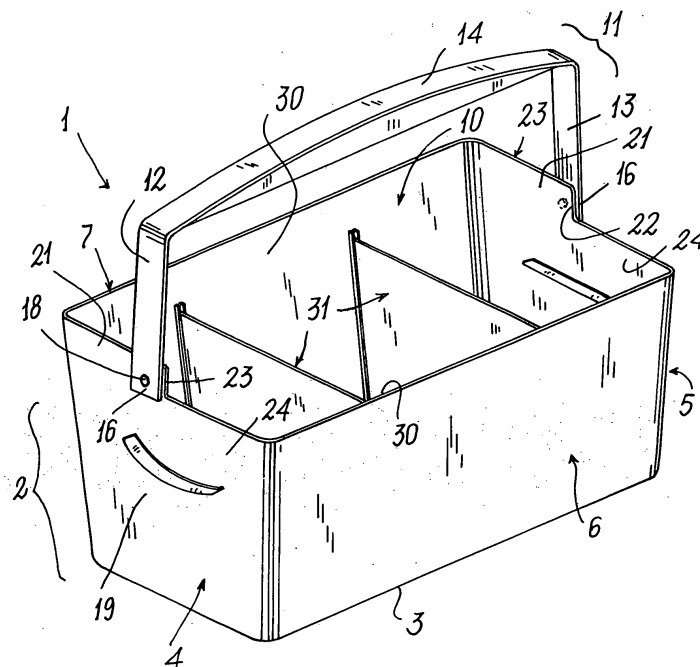


FIG. 1

EP 1 467 166 A2

Description

[0001] The present invention relates to a slidable and removable drawer for a refrigerator in accordance with the introduction to the main claim.

[0002] Drawers of the aforesaid type have been known for some time. They are usually positioned in the coldest region of the refrigerator, or of its preservation compartment if the appliance also comprises a freezer compartment. These drawers are normally used to contain fruit and vegetables.

[0003] Known drawers (see for example EP0611932) generally comprise a hollow body defined by walls projecting upwards from a base; at least one of said walls comprises a recess (through or dead-ended) for the drawer movement within the refrigerator and preferably a pair of through or dead-ended recesses (acting as handgrips) in opposing walls to enable it to be removed from the refrigerator and handled outside it.

[0004] Although these known arrangements enable the refrigerator to be transported, they do not allow it to be securely handled because of the shape of the recesses or handgrips if these recesses are dead-ended. If instead these are through recesses, the drawer can be complex and costly to construct..

[0005] An object of the present invention is to provide for a refrigerator a slidable and removable drawer which is secure in handling and of simple construction, while at the same time can be easily used in the normal manner when contained in the refrigerator.

[0006] This and other objects which will be apparent to the expert of the art are attained by a drawer in accordance with the accompanying claims.

[0007] The present invention will be better understood from the accompanying drawing, which is provided by way of non-limiting example and in which:

Figure 1 is a perspective view of a drawer according to the invention shown in one utilization position;

Figure 2 is a perspective view of the drawer of Figure 1, but in a different utilization position;

Figure 3 is a perspective view of the drawer of Figure 1 shown with some parts omitted and in a different form of utilization;

Figure 4 shows the drawer of Figure 3, in a different utilization position; and

Figure 5 shows a variant of the drawer of the invention.

[0008] With reference to said figures, a drawer according to the invention is indicated overall by 1 and comprises a body presenting a base 3 from which pairs of opposing walls 4, 5 and 6, 7 rise substantially perpendicular, the walls 4 and 5 being of smaller area than the walls 6 and 7. Said walls 4, 5, 6 and 7 and the base 3 define an internal cavity 10 of the body 2.

[0009] According to the invention, with the opposing walls 4, 5 there is associated a movable gripping element

(or handgrip) 11 of substantially U-shape with side arms 12, 13 and a transverse arm 14. The side arms 12, 13 present ends 16 hinged to the walls 4, 5, said hinge being obtained in known manner: for example by mounting said ends 16 on corresponding pins projecting from outer (with respect to the cavity 10) faces 19 of the walls 4, 5, said pins being inserted (for example (snap-inserted) into holes in said end and being locked axially therein (in order not to become separated from said arms) in any known manner.

[0010] Specifically, the arms 12 and 13 are associated with portions 21 of the walls 4 and 5 close to a step 22 provided in a free edge of said walls to define the portion 21 relative to a sunken portion 24.

[0011] When the drawer 1 is used in a refrigerator, the gripping element 12 is disposed in accordance with Figure 7: it rests along the wall 6 with its arms 12 and 13 disposed along the sunken portion 24 of the corresponding wall 4 or 5. In this manner, the food can be placed in the drawer without the element 11 hindering this operation. Preferably the gripping element 11 lies along that wall facing the door of the appliance.

[0012] When the drawer is to be removed from the refrigerator, for example to wash it or to transport its contents onto a kitchen worktop or otherwise external to the appliance, the gripping element 11 is raised to bring its transverse arm above the interior cavity 10 of the drawer, to enable it to be gripped and hence enable the drawer 1 to be transported.

[0013] According to another aspect of the invention, seats are present on inner faces 30 of the walls 6 and 7 (with reference to the cavity 10) for movable walls 31 able to be removably engaged with the drawer body, to modify the usable volume of its cavity 10 in any desired manner. These seats can be defined by channels 33 bounded by shoulders 34 projecting from said faces 30. The walls 31 can be easily manipulated by resting the gripping element 11 along a side of the body 2 of the drawer, as shown in Figures 2 and 4.

[0014] According to a variant of the drawer shown in Figure 5, the front wall 6 of the drawer presents a profiled sunken portion 6a enabling the handgrip 14 to be more easily gripped when at rest in proximity to said wall 6.

[0015] Some different embodiments of the invention have been described. Others can however be provided, such as one in which the gripping element 11 is split into two parts, or one in which this element is fixed above the cavity 10.

Claims

1. For a refrigerator (1), a slidable and removable drawer (1) comprising an internally hollow (at 10) body (2) defined by walls (4, 5, 6, 7) rising from a base (3), **characterised in that** an opposing pair (4, 5) of said walls supports a gripping element (11) for the drawer (1), said gripping element (11) being

hinged to said walls (4, 5) and being able to assume at least one working position in which it lies above the cavity of said drawer body.

2. A drawer as claimed in claim 1, **characterised in that** the gripping element (11) is connected to smaller-area walls (4, 5) of the drawer body (2). 5

3. A drawer as claimed in claim 1, **characterised in that** the gripping element (11) is U-shaped and comprises side arms (12, 13) hinged to the walls (4, 5) of the drawer body (2), and a transverse arm (14) connecting said side arms (12, 13) together. 10

4. A drawer as claimed in claim 3, **characterised in that** each side arm (12, 13) comprises an end (16) cooperating with a hinge pin (18) connected to the corresponding wall (4, 5) of the drawer body (2). 15

5. A drawer as claimed in claim 1, **characterised in that** the walls (4, 5) to which the gripping element (11) is connected comprise a free edge (23) shaped as a step to define two portions (21, 24) of said walls having different heights, the gripping element (11) being associated with the portion (21), which is raised relative to the other portion (24). 20 25

6. A drawer as claimed in claim 1, **characterised in that** the gripping element (11) can be rested on a side of the drawer body (2). 30

7. A drawer as claimed in claims 5 and 6, **characterised in that** when in its resting position, the gripping element (11) has its side arms (12, 13) lying along the sunken portions (24) of the walls (4, 5) to which said gripping element is connected. 35

8. A drawer as claimed in claim 1, **characterised in that** the cavity (10) of the drawer body (2) is divided into sections by walls (31). 40

9. A drawer as claimed in claim 8, **characterised in that** the walls (31) are removable. 45

45

50

55

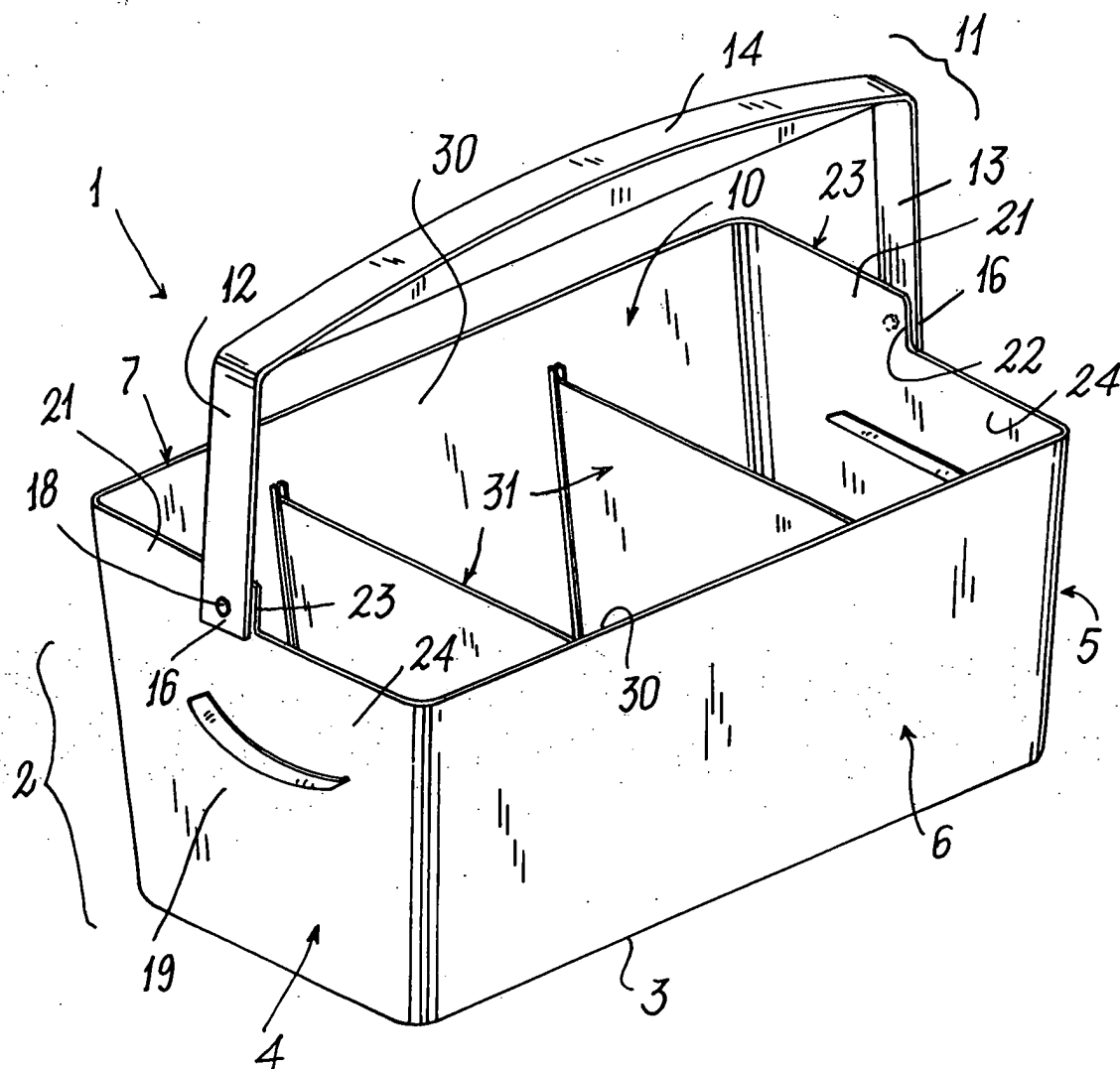


FIG. 1

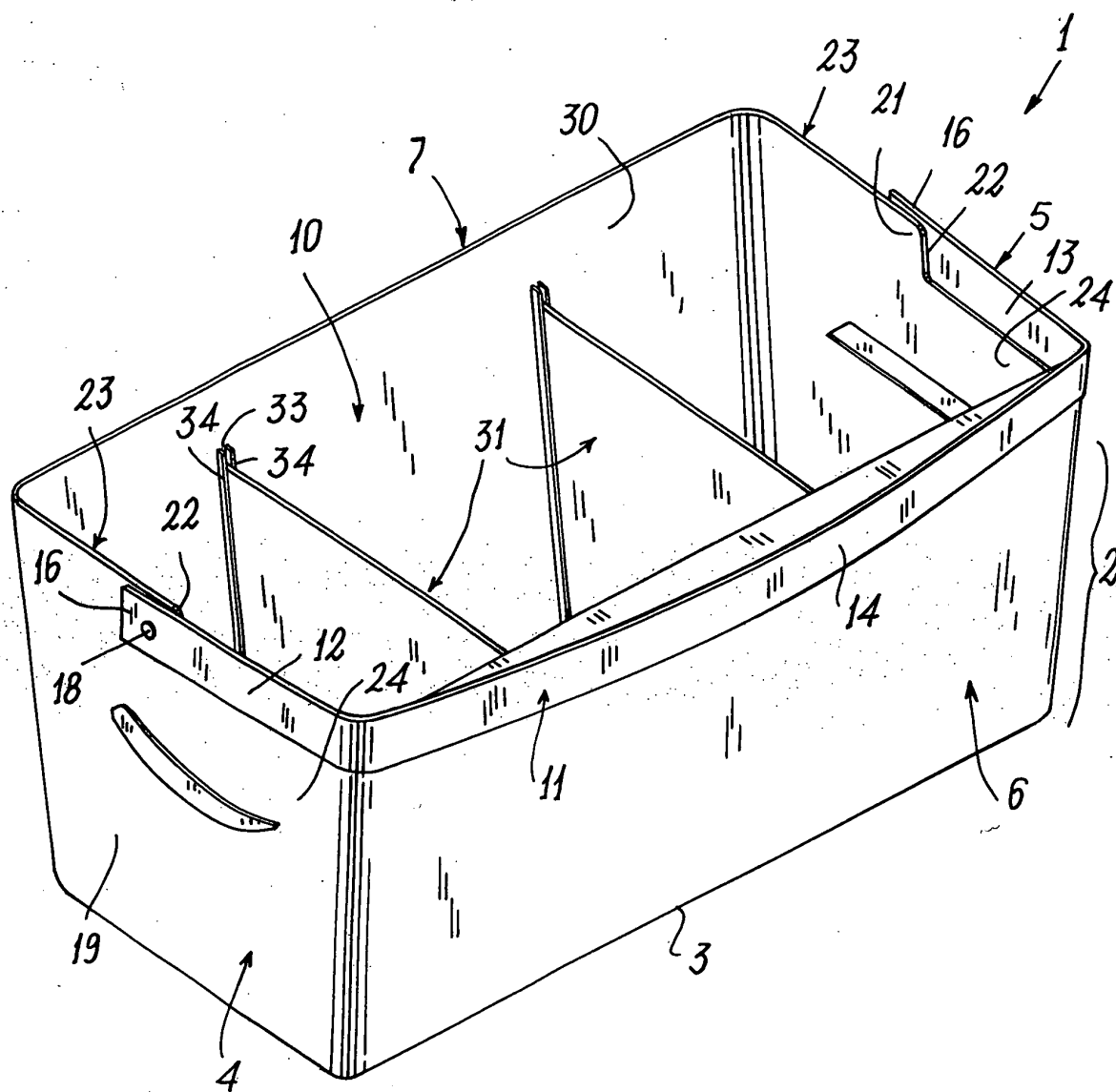


FIG. 2

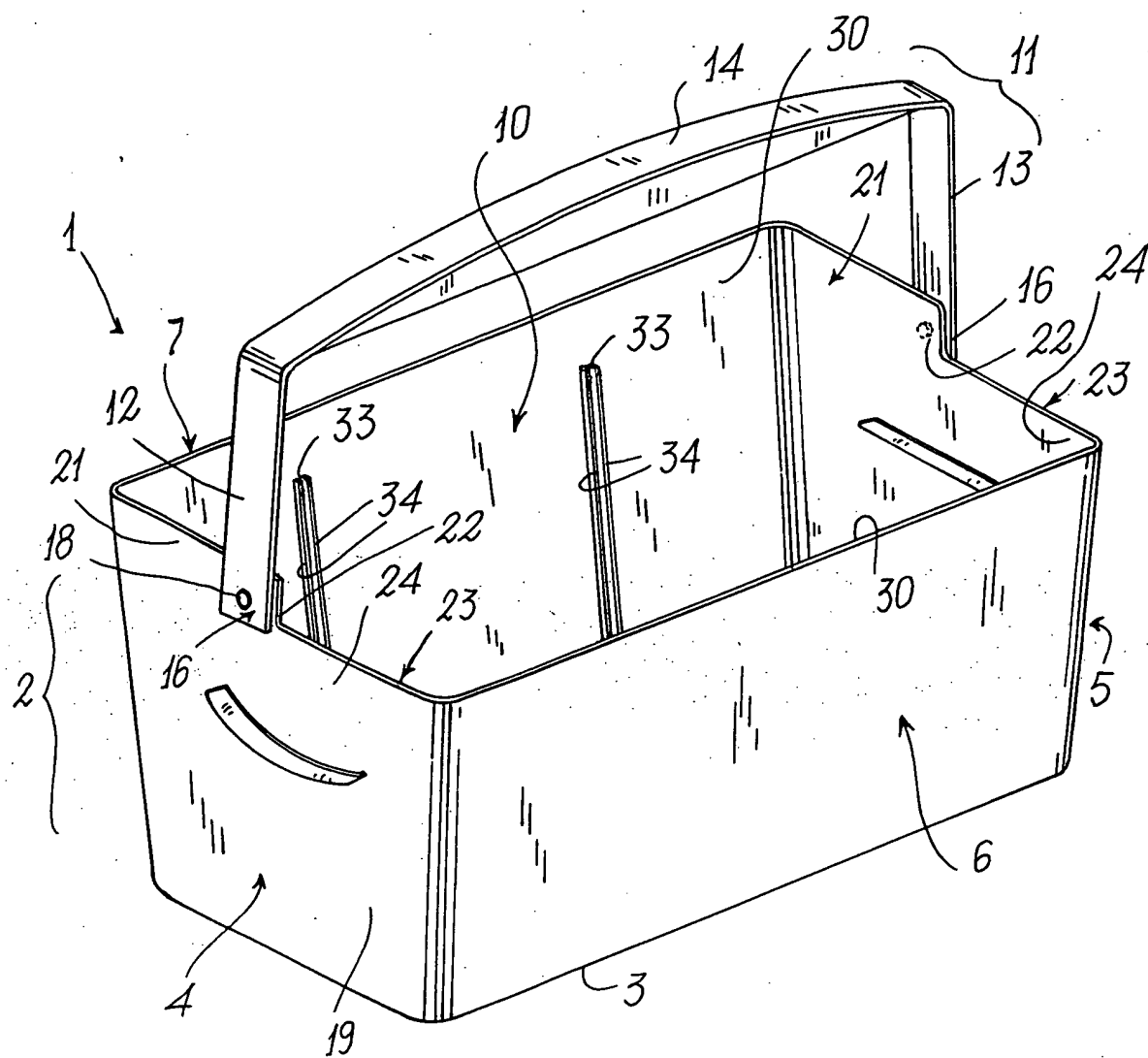


FIG. 3

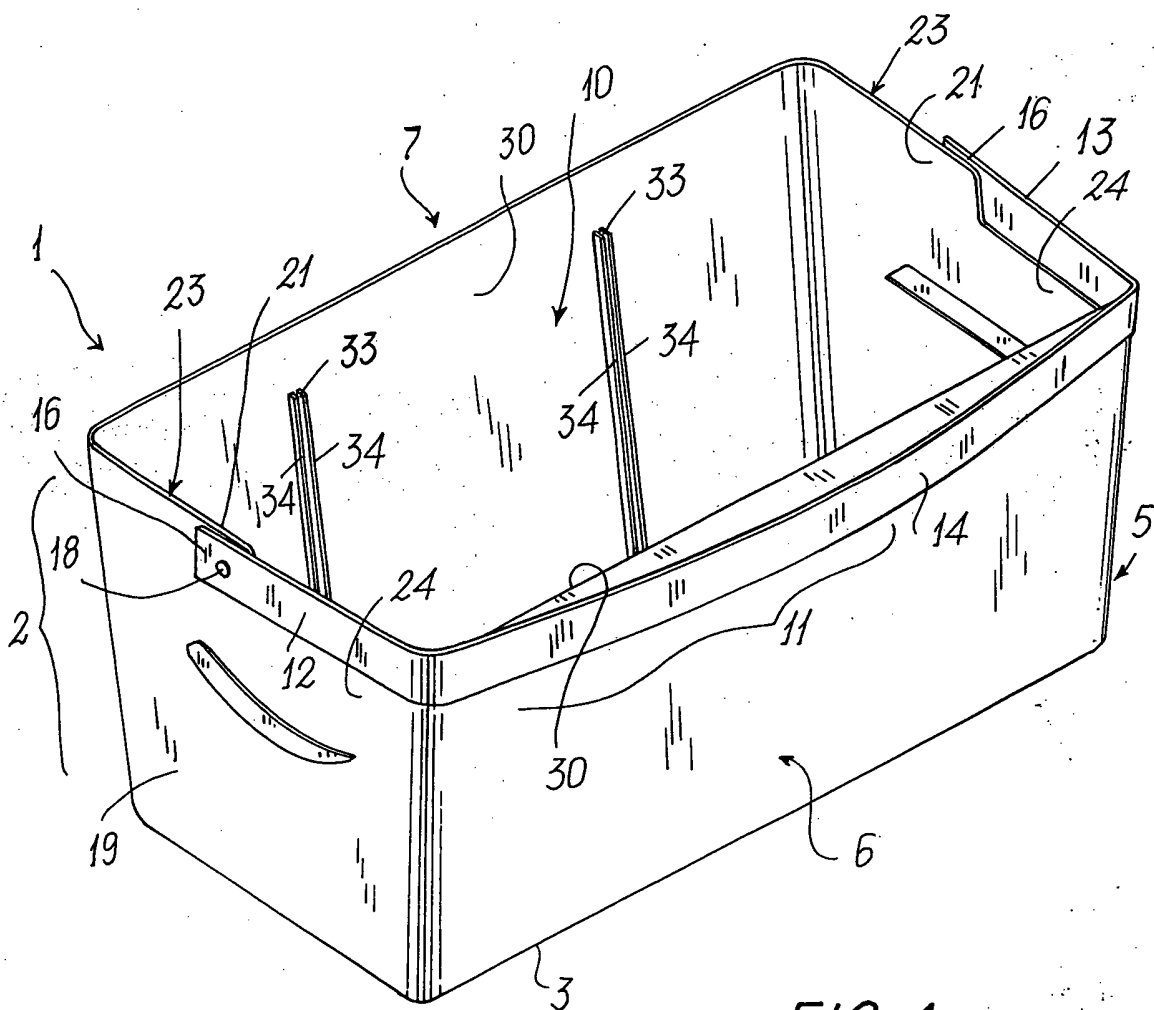


FIG. 4

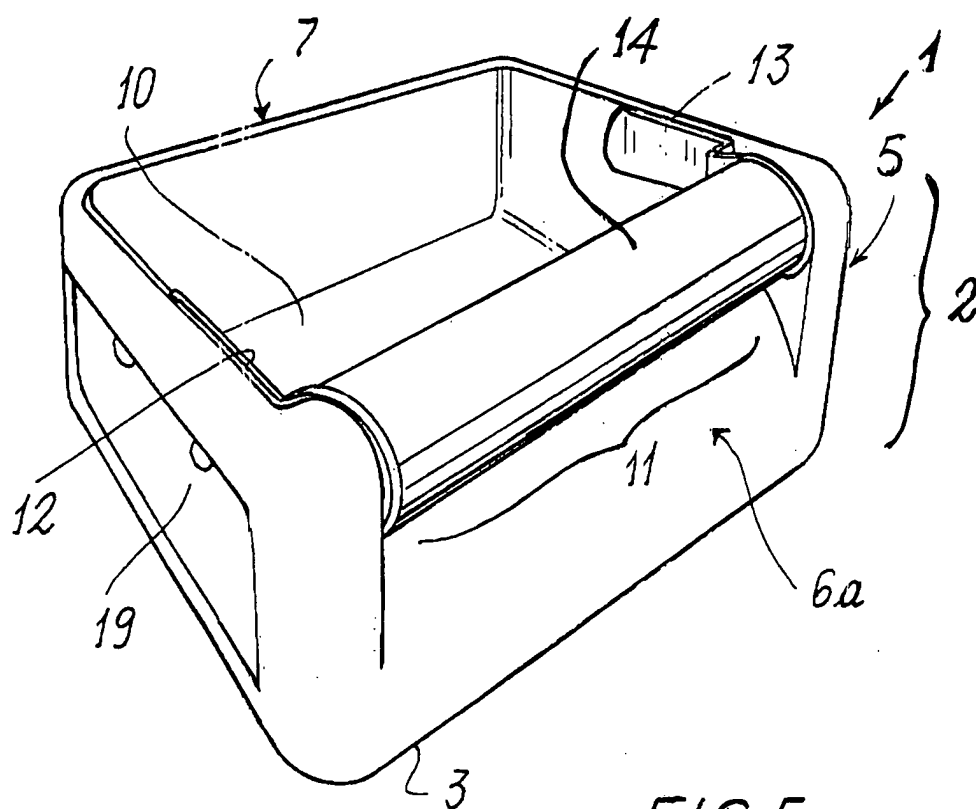


FIG. 5