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(71) Applicants *(for all designated States except US)*: **TECNOFUSTELLE S.A.S** [IT/IT]; Di Capponi Massimo, Capponi Stefano & C., Via Speranza, 25, I-40068 San Lazzaro Di Savena (IT). **MINELLI, Alessandra** [IT/IT]; Via Gaspari, 6, I-40033 Casalecchio Di Reno (IT).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **CAPPONI, Massimo** [IT/IT]; Via XXV Aprile, 31, I-40055 Castenaso (IT).

(74) Agent: **MODIANO, Guido**; Modiano & Associati, Via Meravigli, 16, I-20123 Milano (IT).

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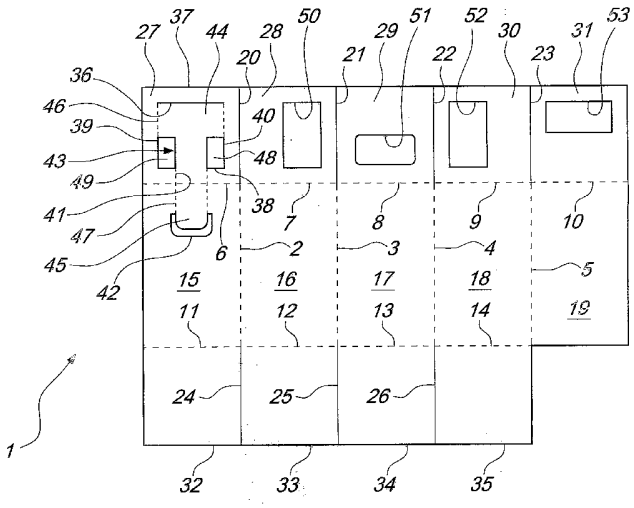
(54) Title: CONTAINER WITH OPENING TAB



(57) Abstract: A container provided with an opening tab, comprising a tubular body that has a polygonal cross-section and has opposite ends provided with closure elements formed by flaps (27-35) that are folded and mutually joined one over the other, the flaps that form at least one closure element being provided with openings (50-53) which mutually overlap when closure is completed, the opening of a flap that is intermediate with respect to the other openings forming a seat (36) that accomodates a slider (43) composed of a closure panel (44) provided with a tearable tab (45) that lies between the adjacent flaps and can be accessed from the outside of the container, the slider, upon acting on the tab, being movable in the seat (36) between a position in which the panel (44) closes the remaining openings and a position in which it clears the openings in order to allow the outflow of the content from the container.

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CONTAINER WITH OPENING TAB

Technical Field

The present invention relates to a container provided with an opening tab. The container is particularly but not exclusively adapted to contain flowing products such as rice, pasta, salt, legumes and the like or liquids, such as beverages, mineral water, wine and the like. Reference is made hereinafter, for reasons of clarity and simplicity in presentation, to containers obtained from sheets of die-cut cardboard; however, it is understood that such sheets can be made of any laminar material, for example cardboard with a surface plastic lamination or impregnated or treated cardboard, according to the type of product that the container is intended to contain.

Background Art

As it is known, containers obtained from sheets of laminar material of various kinds, die-cut and assembled so as to form box-like bodies of various shapes and dimensions, are already commercially available. Most containers currently in use have a generally rectangular prism-like shape and have, in order to allow the outflow of the contained product, a breakable portion formed by a line of perforations or a preweakening scoring that allows to fold and remove said portion and form an opening for the outflow of the product. When the container is required to have particular hermetic tightness requirements, such as for example for containing liquids, the container has a suitable auxiliary spout, which is applied by thermal bonding or gluing and is closed by a tab that is torn off by the user at the time of use.

Known containers have certain significant drawbacks. In containers provided with a removable portion, breaking such portion is often highly troublesome, to the point that in many cases it is necessary to resort to the use of a cutting tool. In containers provided with a spout for the outflow of the product, application of the spout instead entails additional costs and

operations that have a negative effect on the economic convenience of the container.

Disclosure of the Invention

The aim of the present invention is to provide a container that allows to obviate the above-cited drawbacks of known containers.

Within this aim, an object of the present invention is to provide a container that is highly versatile in use in relation to the type of product that it is intended to contain.

This aim and this and other objects that will become better apparent hereinafter are achieved by a container provided with an opening tab, which comprises a tubular body that has a polygonal cross-section and has opposite ends provided with closure elements formed by flaps that are folded and mutually joined one over the other, characterized in that the flaps that form at least one closure element are provided with openings which mutually overlap when closure is completed, the opening of a flap that is intermediate with respect to the other openings forming a seat that accommodates a slider composed of a closure panel provided with a tearable tab that lies between the adjacent flaps and can be accessed from the outside of the container, said slider, upon acting on said tab, being movable in said seat between a position in which said panel closes the remaining openings and a position in which it clears said openings in order to allow the outflow of the content from said container.

Brief description of the Drawings

Further characteristics and advantages of the present invention will become better apparent from the following detailed description with reference to the accompanying drawings, wherein:

Figure 1 is a view of a sheet of die-cut cardboard, from which the container according to the invention is obtained by means of successive folds;

Figures 2 to 7 are views of successive steps of the folding of the die-

cut sheet;

Figures 8 and 9 are two partial perspective views, with breakage lines, of a container according to two embodiments of the invention.

Ways of carrying out the Invention

With reference to Figure 1, the reference numeral 1 generally designates a substantially rectangular sheet of die-cut cardboard used to produce a carton according to the invention.

The reference numerals 2 to 5 designate four parallel scoring lines, at right angles to which there are two additional parallel scoring lines that are divided by the scoring lines 2-5 into segments designated by the reference numerals 6 to 14. The scoring lines 2-5 form, together with the segments 6-14, rectangular walls 15-19, and continue at their opposite ends with respective cutting lines 20-26, which form, together with the segments 6-14, mutually separate flaps 27-35. As clarified hereinafter, once the assembly of the container is complete, the walls 15-19 compose the polygonal tubular body of the container and the flaps 27-35 constitute the end closure elements of the container.

A substantially square opening 36 (hereinafter termed seat 36 for the sake of convenience in description) is formed in the flap 27 and has two sides 37, 38 that are parallel to the scoring segment 6 and other two sides 39, 40 that are parallel to the cutting line 20.

The seat 36 is connected, by a passage 41 that passes through the scoring segment 6, to a slot 42 formed in the wall 15.

The reference numeral 43 designates a T-shaped laminar slider that lies within the plane of the flap 27 and of the wall 15 and is composed of a panel 44 and a tab 45. As will become better apparent hereinafter, the panel 44 is designed to act as a flow control element in order to allow or block the flow of product out of the container.

The panel 44 is rectangular and is arranged in the seat 36 so that the short sides are connected to the sides 39, 40 of the seat 36 by joining lines

46. The tab 45 protrudes from the panel 44 through the passage 41, with which it is rigidly coupled by joining lines 47, and its end extends into the slot 42.

Conveniently, the joining lines 46, 47 are perforated or otherwise weakened in order to allow them to break when pulled.

It should be noted that the elements described above, i.e., the seat 36, the slot 42, the passage 41 and the slider 43, as well as the perforated joining lines 46, 47, in practice are provided by die-cutting the flap 27 and the wall 15 so that the panel 44 is separated from the upper side 37 of the seat 36 by a cutting line and is spaced from the lower side 38 of said seat by two rectangular slots 48, 49 that are laterally adjacent to the tab 45. The panel 44 is therefore capable of sliding in the seat 36 when, after lifting and tearing by pulling part of the joining lines 47 that retain it in the passage 41, the tab 45 is pulled so as to also break the joining lines 46.

The die-cutting of the sheet 1 is completed by four additional openings 50, 51, 52 and 53, which are formed in the respective flaps 28, 29, 30, 31 and are slightly smaller than the openings of the seat 36. The openings 51-53 are arranged and orientated so that when the flaps 28-31 are mutually superimposed there is a single opening that faces the seat 36 of the flap 27.

Assembly of the container 1 according to the invention is derivable from the provided description and from Figures 2 to 7.

First of all, the walls 15-19 are folded along the lines 2-5 so as to form a tubular body 54 that has a quadrangular cross-section and in which the wall 19 is joined, for example by interposing adhesives or in other manners, to the inside face of the wall 15 (Figure 2). Then the flaps 28 and 30 are folded together at 90° toward the inside of the tubular body 54 (Figures 3 and 4). At this point, the flap 27 that supports the panel 44 is folded onto the flap 30 (Figures 5 and 6) and finally the flap 29 is folded, completing the formation of the end closure element 55 of the container

(Figures 6 and 7). Conveniently, all the flaps are perimetrically joined to each other so as to provide a sturdy closure, which by being composed of a plurality of layers of cardboard provides adequate stiffening of the container.

At the same time, the flaps 32-35 are folded onto each other toward the inside of the container and are firmly joined to each other in order to provide a supporting bottom that is capable of keeping the container in an upright and stable position.

The use of the container can be easily deduced from Figure 7. After lifting the end portion of the tab 45 from the slot 42 of the wall 15, such portion is pulled so as to tear the perforated joining lines 46 and 47 that retain the tab 45 in the passage 41 and the panel 44 in the seat 36. The panel 44 can therefore slide freely in the seat 36 between the flaps 30 and 29, so as to clear the underlying openings 50, 52, 53 and allow the outflow of the product from the container.

The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept. In particular, the flaps 28-31 can be folded onto each other into an order that is different from the one described above. Further, the flap 27 that supports the panel 44 of the slider 43 can be arranged under a double covering flap instead that under a single one, as shown in the example of Figures 2-7.

Figure 8 is a view of an embodiment in which, in order to reduce the thickness of the end closure element 55, the flap 29 does not overlap the lateral flaps 28, 30 as in the previous example but lies below the lateral flaps and is cut shorter so as to avoid increasing the thickness of the flaps 27, 31.

Finally, Figure 9 is a view of a further embodiment in which the panel 44 of the slider 43 is arranged in a seat 56 that is formed in the wall 15. An opening 57 formed in the wall 19 is arranged opposite said seat. In order to keep the panel 44 guided in the seat 56, the flap 27 is folded over and joined

to the inner face of the wall 15 and is provided with an opening 58 that lies opposite the seat 56. In this embodiment, the flap 31 does not have the opening 53 and the tab 45 ends, when the container is assembled, at the edge 59 formed by the wall 19 and the flap 31. The tab 45 can be gripped through a slot 60 formed in the wall 19, which opens with a slit in the flaps 30 and 31. In this embodiment too, it is noted that the openings 57 and 58 are smaller than the seat 36 in order to keep the panel 44 of the slider 43 guided during its sliding.

It should be noted that if the container is designed to contain liquids, the flaps and the walls are all hermetically sealed together by using heat-sealable plastic-laminated cardboard, and the opening for the outflow of the product is sealed with a film that is connected to the panel 44 and is suitable to be torn when the panel is moved into the position for opening the container.

In the practical embodiment of the invention, all the details may be replaced with other technically equivalent ones. The materials used, as well as the shapes and the dimensions, may further be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

The disclosures in Italian Patent Application No. BO2003A000207 from which this application claims priority are incorporated herein by reference.

CLAIMS

1. A container provided with an opening tab, comprising a tubular body that has a polygonal cross-section and has opposite ends provided with closure elements formed by flaps that are folded and mutually joined one over the other, characterized in that the flaps that form at least one closure element are provided with openings which mutually overlap when closure is completed, the opening of a flap that is intermediate with respect to the other openings forming a seat that accommodates a slider composed of a closure panel provided with a tearable tab that lies between the adjacent flaps and can be accessed from the outside of the container, said slider, upon acting on said tab, being movable in said seat between a position in which said panel closes the remaining openings and a position in which it clears said openings in order to allow the outflow of the content from said container.

2. The container according to claim 1, characterized in that said seat and said closure panel have a quadrangular shape, with two contiguous and parallel lines connected by joining lines that can be torn by pulling, said seat being suitable to allow, by pulling on said tab, the movement of said panel, when said tab is pulled, between a position in which said panel closes the remaining openings and a position in which it clears said openings in order to allow the outflow of the content from said container.

3. A container provided with an opening tab, comprising a tubular body that has a polygonal cross-section and has opposite ends provided with closure elements formed by flaps that are folded and mutually joined one over the other, characterized in that one of said walls is provided with an opening that forms a seat in which there is a slider composed of a closure panel provided with a tearable tab, said wall being interposed between a flap that is connected thereto and is folded onto its inner face and an outer wall, openings that face said seat being formed in said outer wall and said inner flap, said panel being movable in said seat between a position in which said

panel closes said openings and a position in which it clears said openings in order to allow the outflow of the contents from said container.

4. The container according to one of claims 2 and 3, characterized in that said tab protrudes through a passage that crosses the scoring line that mutually divides said flap and said wall and is connected to a slot that is formed in said flap or in said wall.

5. The container according to one of claims 1 to 4, characterized in that said panel and said tab of said slider are joined to the sides of said seat and respectively of said passage by joining lines that have weakening points suitable to allow the separation of said slider.

6. The container according to one of the preceding claims, characterized in that said seat is smaller than said openings.

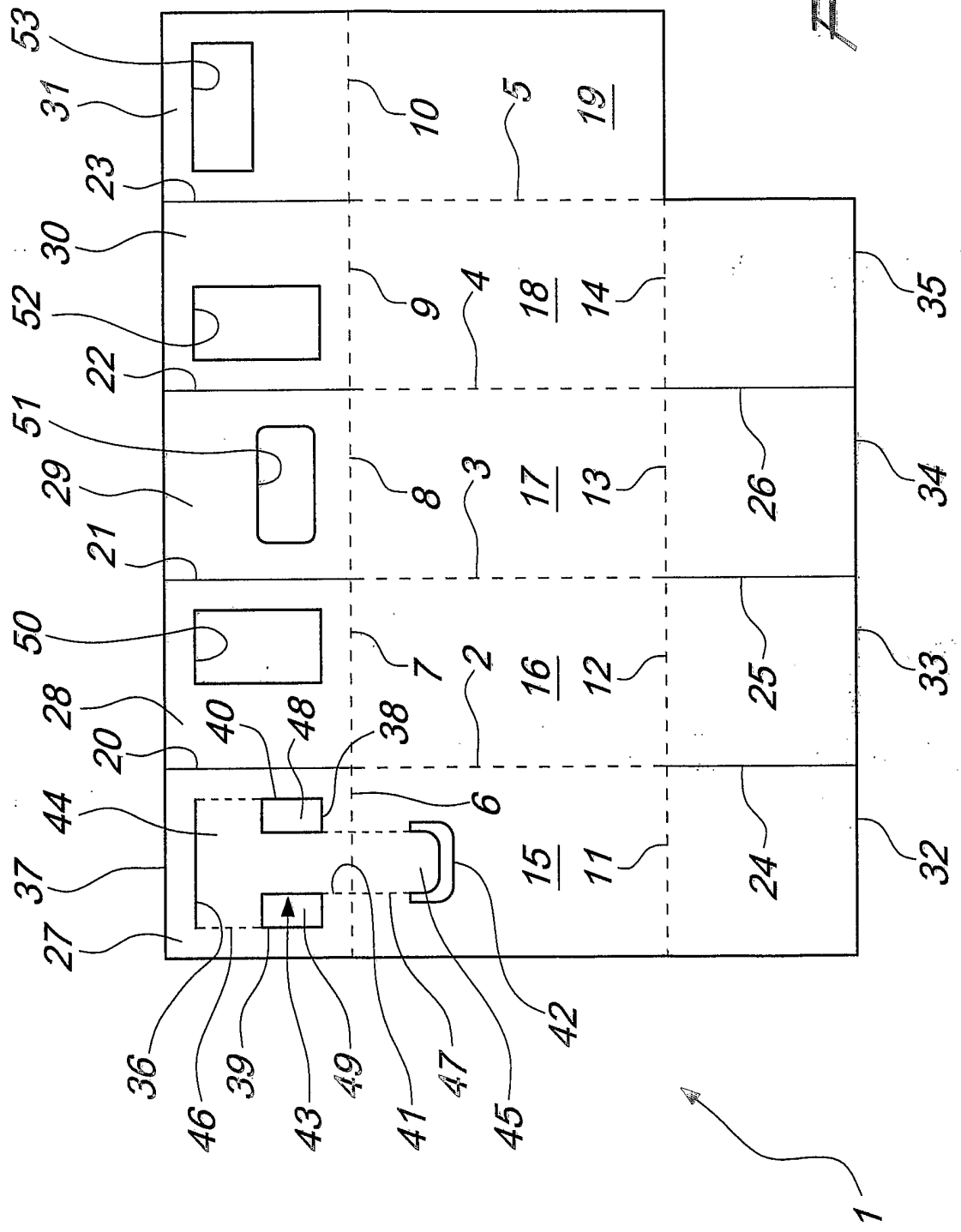
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Fig. 1

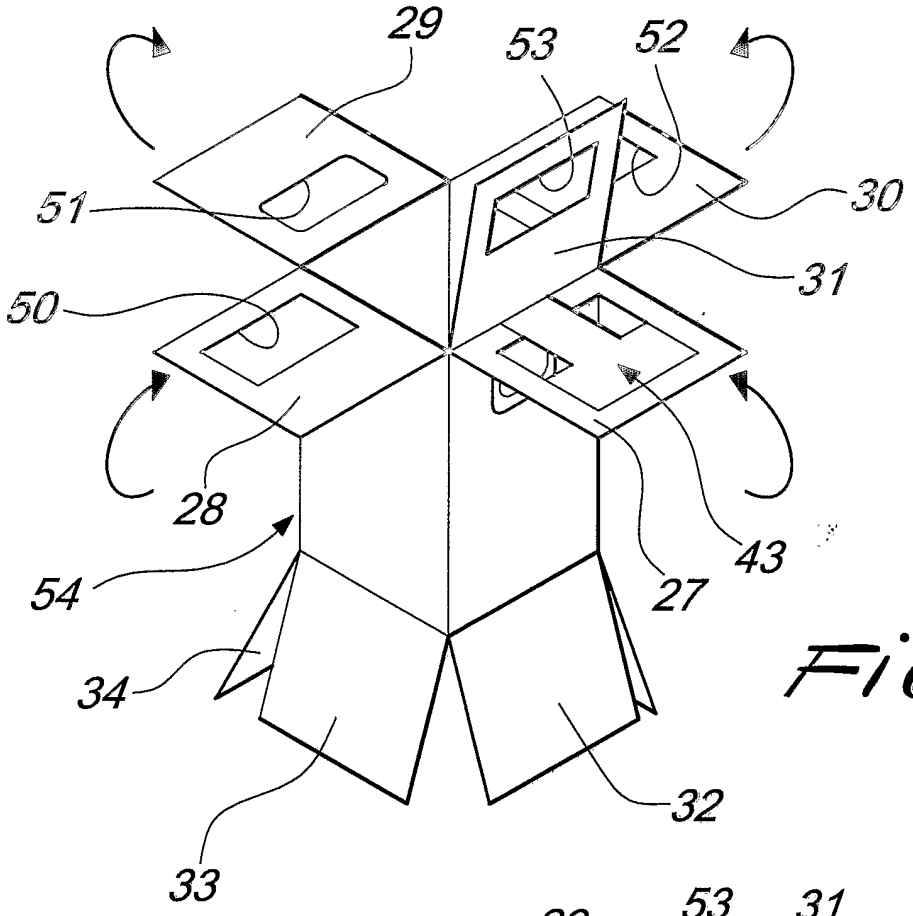
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Fig. 2

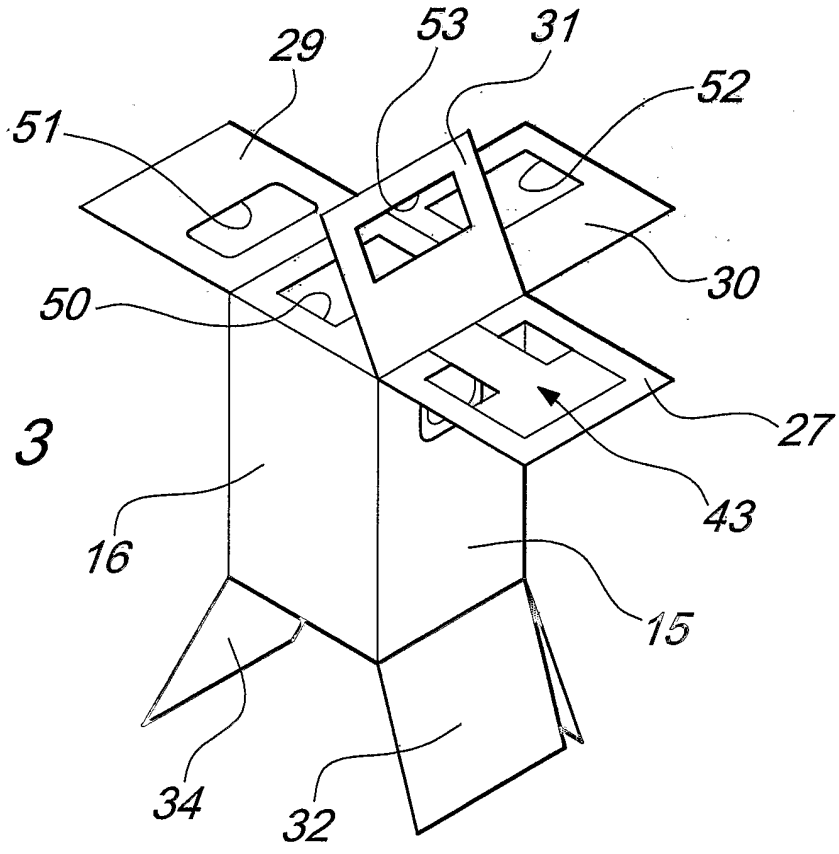
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Fig. 3

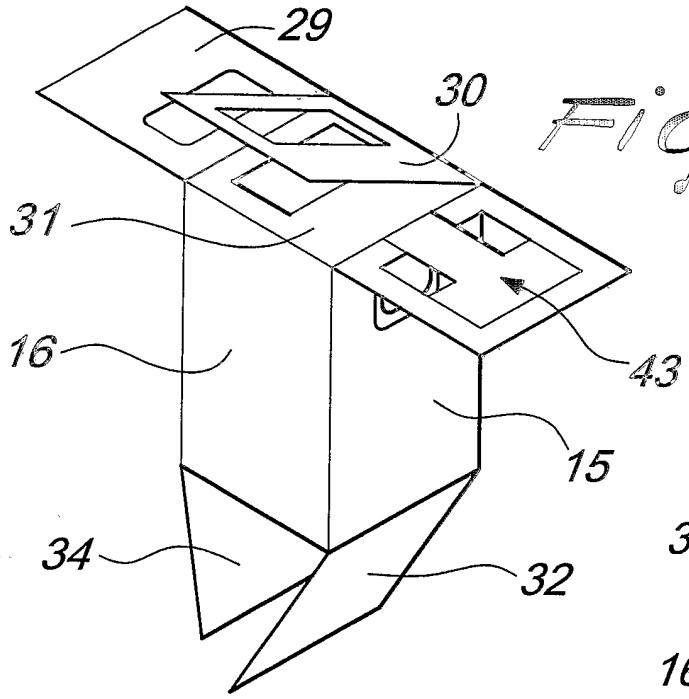
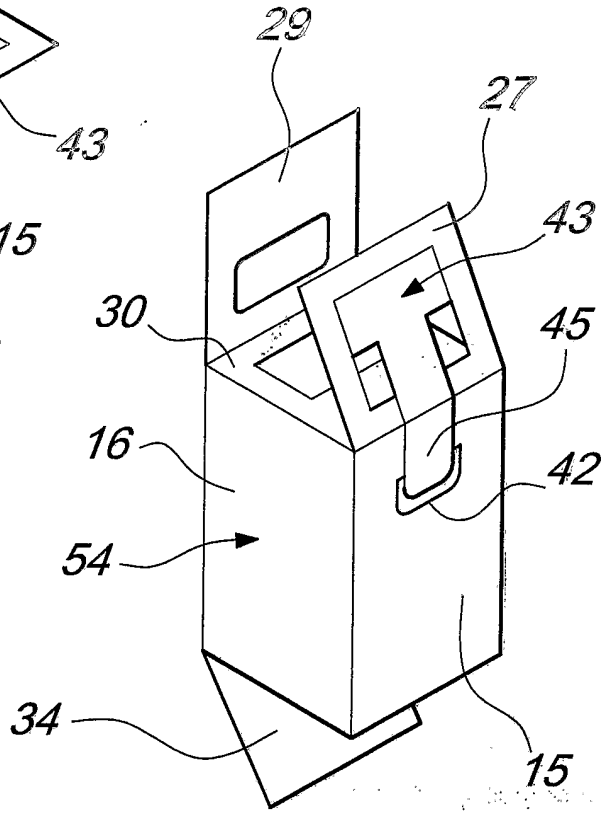


Fig. 4

Fig. 5



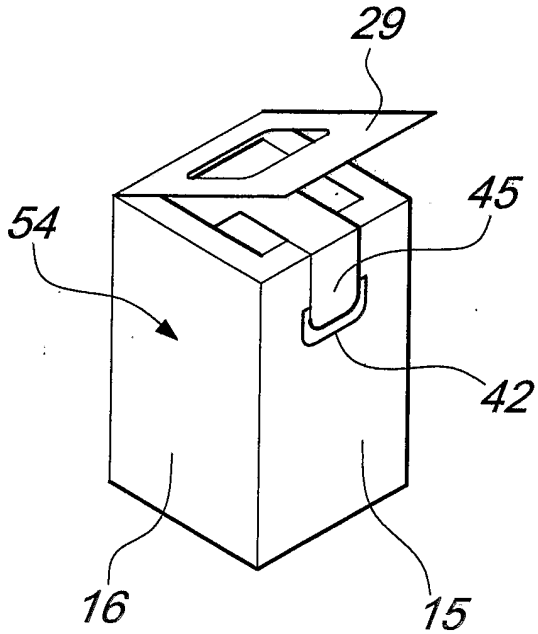


Fig. 6

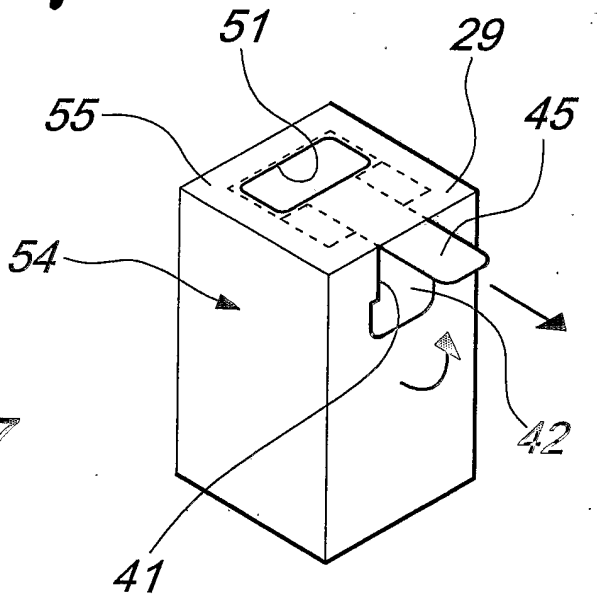


Fig. 7

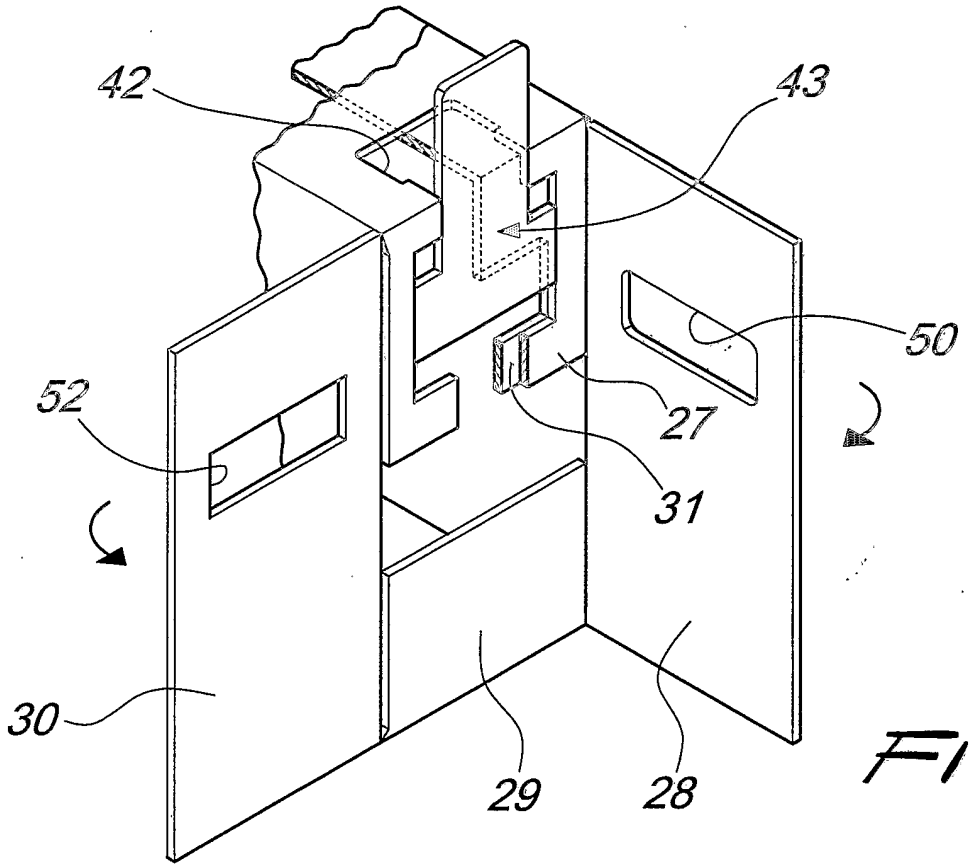


Fig. 8

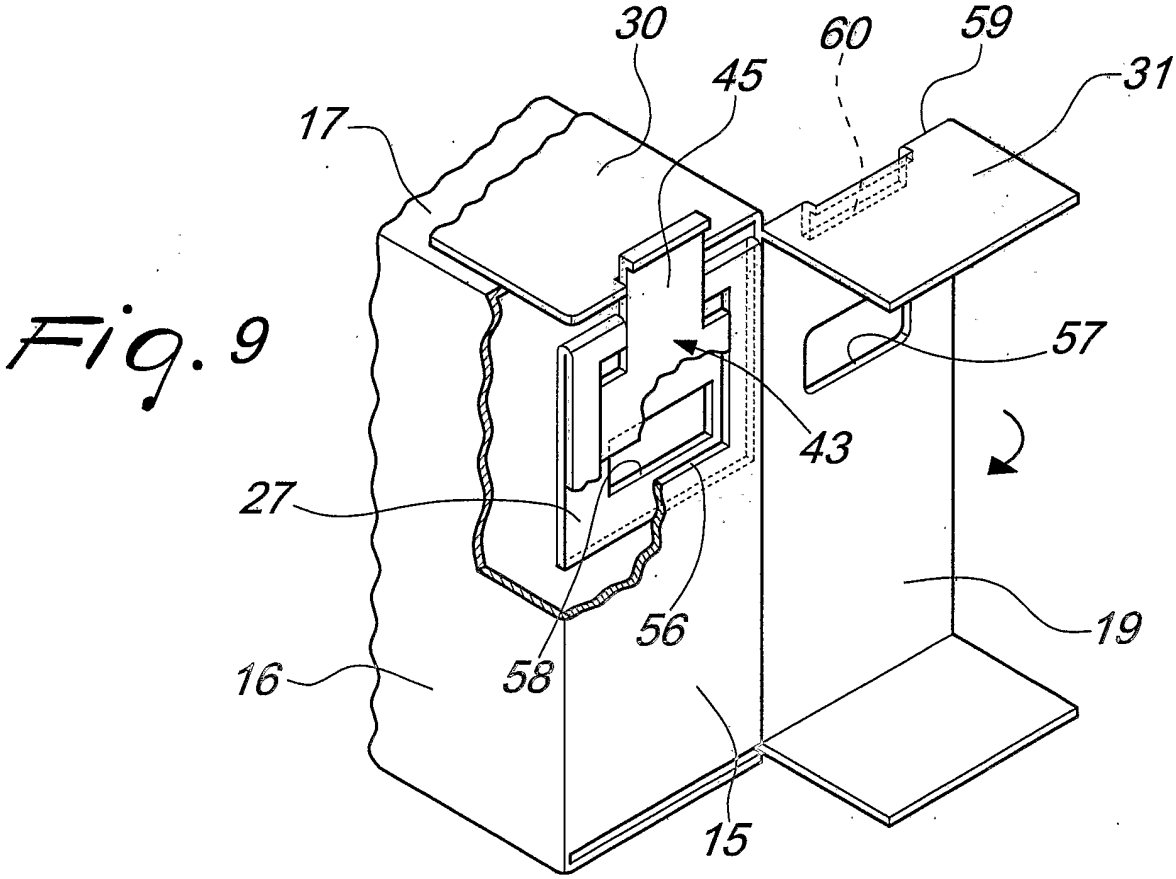


Fig. 9

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/003241

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D5/72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 957 512 A (HEINZ LANDERER) 6 May 1964 (1964-05-06)	1,2,6
A	page 1, line 39 - line 41; figures 1,4	4
X	EP 0 098 903 A (LAWSON PAPER CONVERTERS LIMITE) 25 January 1984 (1984-01-25)	3,6
A	figures 23,24	2
X	GB 916 581 A (KAPAFAR BUSINESS TRUST REG) 23 January 1963 (1963-01-23) page 1, line 84 - line 87; figure 2	1,2,6
A		4
X	GB 911 137 A (KAPAFAR BUSINESS TRUST REG) 21 November 1962 (1962-11-21) page 2, line 11; figures 1,2	1,2,6

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
21 July 2004	29/07/2004

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP2004/003241

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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