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(72) Inventor: Bauer, Rainer R.
65191 Wiesbaden (DE)

(74) Representative: Kremer, Véronique et al
Procter & Gamble Service GmbH
65824 Schwalbach am Taunus (DE)

(71) Applicant: THE PROCTER & GAMBLE COMPANY
Cincinnati, Ohio 45202 (US)

(54) A container for flat, substantially planar articles with one-by-one article dispensing

(57) This invention relates to a container for flat, substantially planar articles, such as sanitary napkins, panty liners, writing paper, dry wipes, wet wipes or wipes being treated with a lotion, which allows one-by-one dis-

pensing of said articles by moving the re-closable lid of said container. The flat, substantially planar articles are contained in said container as a stack of individual articles.

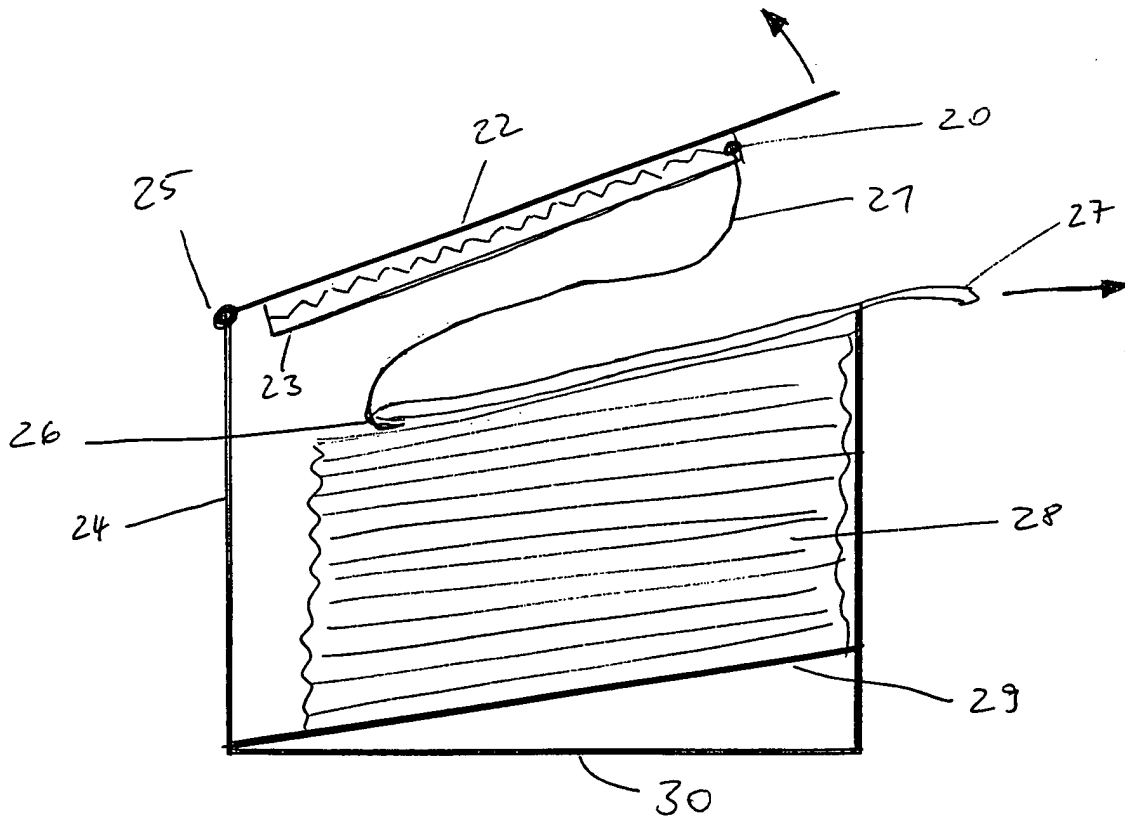


Fig. 3

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Description

Field of the Invention

[0001] This invention relates to a container for flat, substantially planar articles, such as sanitary napkins, panty liners, writing paper, dry wipes, wet wipes or wipes being treated with a lotion, which allows one-by-one dispensing of said articles by moving the re-closable lid of said container. The flat, substantially planar articles are contained in said container as a stack of individual articles.

Background of the Invention

[0002] The primary consumer needs, which underlie the development in the field of packaging of flat, substantially planar articles, are basic protection of the articles, hygienic storage as well as ease and convenience of dispensing of those. Furthermore, for consumers of e.g. feminine care articles discretion is important in this field, which means that those articles should not be easily recognizable to others when stored in e.g. the bathroom.

[0003] The dispensing of sanitary articles, such as wipes, cloths or towelettes, is subject to numerous disclosures. US 533218 to Muckenfuhs discloses a pop-up towel dispensing system, US 3967576 to Barish and US 4784290 to Howard are disclosing means for dispensing wet wipes, US 5573132 to Kanfer et al. teaches a dispensing container for dispensing of pre-moistened towelettes. US 5531325 to Deflander et al. discloses a storing and dispensing system for articles packed in a sealed pouch.

[0004] All the suggested dispensing systems mentioned above are based on the pop-up dispensing approach, where the user has to open a cover of a package containing the articles and to pull out an article himself, without assistance by the package. This kind of container is offering basic protection of the contained articles, hygienic storage and easy access to the article, but are missing an important aspect: An assisted dispensing of the contained articles one-by-one is not supported. Moreover, pop-up dispensing conventionally requires "interleaving" of the articles. Many different methods of folding and interleaving of wipes or towels are known in the art but all require expensive, technically complex equipment compared to stack formation with one on the top of the next one.

[0005] Assisted one-by-one dispensing of stacked articles is also well known from other fields. For instance the assisted one-by-one dispensing of sheets of paper from a stacked note pad is known from e.g. "Classic Zettelkasten", order code CLA 7600 from Corporate Express, Frankfurt am Main, Germany. A stack of sheets of paper for hand-written notes is one-by-one dispensed by opening the re-closable lid of a container containing the stack. Said re-closable lid is joined to one side of

said container by a hinge. The dispensing is facilitated by a mechanism, which basically consists of a rod, being joined to the re-closable lid of said container by a hinge. Said rod has a piece of soft rubber fixed to the end opposite the one being joined to said re-closable lid. By opening the re-closable lid, the piece of rubber travels back towards the side of the container where the re-closable lid is joined. By subsequent closing of the re-closable lid the piece of rubber is pushed towards the side of the container opposite to the one where the re-closable lid is joined, whereby pushing a sheet of paper, lying on top of the stack, out of the container. Traction between paper sheet and dispensing aid is provided by friction.

[0006] The partial exposure of an article out of the container, e.g. the grip portion of the article, is generating several drawbacks. For instance the article becomes thereby visible. Thus, the discretion aspect, which is particularly important in case of e.g. feminine care articles, is detrimentally affected. Furthermore, the exposed portion of the article can become dusted or otherwise soiled, thereby losing hygienic appearance and security. Another drawback of partial exposure of the article is related to wetted articles, e.g. wet or lotioned wipes. In case of such articles the exposed portion will always tend to dry out, thereby losing much of its intended functionality.

[0007] Another disadvantage of this dispensing system is the limitation of the frictional mechanism. Especially with regard to wet wipes or wipes being treated with a lotion, where friction between the wipes and the rubber can hardly build up, this mechanism can result in unsatisfactory dispensing results. Furthermore, the described frictional mechanism will work unsatisfactory in case of flat, substantially planar articles, such as sanitary napkins or panty liners, which are significantly heavier than sheets of paper, typically ranging from 0.3g to 6g in weight. Flat, substantially planar articles to be dispensed according to the present invention can have a weight of up to 20g. Therefore the forces executed by the frictional rod design for building up enough friction for reliable dispensing of said articles must be much higher, which could result in damaging of the articles. Another consideration is to be made with regard to stacks of articles, where high attractive forces are generated between the articles themselves. This would result in the dispensing of multiple articles in one turn, which is clearly unacceptable to the user of those articles. Examples for such articles are in particular tissue wipes or wet articles. Between such webs strong frictional forces can build up by mutual engagement of loose fibre ends from adjacent wipes or by forces of surface tension in a wet environment.

[0008] Other examples for one-by-one dispensing of stacked articles are e.g. dispensers for cigarette packages or candy bars. The one-by-one dispensing is facilitated by e.g. pulling of a drawer, dispensing one of the articles out of the stack being situated above the drawer,

or by rotating spirals. All those dispensing systems have the disadvantage of great bulkiness, complexity and high cost.

[0009] It is therefore an object of the present invention to provide a container, preferably made of plastic material, for easy, convenient and reliable one-by-one dispensing of flat, substantially planar articles, such as sanitary napkins, panty liners, writing paper, dry wipes, wet wipes or wipes being treated with a lotion, while offering protection, especially with regard to hygiene, to the contained articles. Other three-dimensional articles, such as tampons, requiring some protection and hygienic environment but which are not flat, can also benefit from the one-by-one dispensing with only minor modification.

[0010] It is another object of the present invention to provide a container for dispensing flat, substantially planar articles on a one-by-one basis, wherein the dispensing is initiated by opening the re-closable lid of the container.

[0011] It is another object of the present invention to provide a container for dispensing flat, substantially planar articles on a one-by-one basis, offering discretion to the user of such articles by having a neutral appearance.

Summary of the Invention

[0012] The present invention provides a container allowing one-by-one dispensing of flat, substantially planar articles, such as sanitary napkins, panty liners, dry wipes, wet wipes or wipes being treated with a lotion, by simply moving the re-closable lid of said container. This is facilitated by a pivoting scooping member, which is attached to said re-closable lid on the proximal end of said member. The scooping member has a hook or other gripping means at its pivoting end, being opposite to said proximal end, for pushing or pulling out one of the stacked articles. The scooping member can be executed as a single finger or a sheet or plate, being substantially two-dimensional. Optionally, for better access of articles lying in the lower regions of said container, when the article content of the container is diminishing, a ratchet mechanism joins the scooping member to the re-closable lid of the container.

Detailed description of the Invention

[0013] The present invention relates to a container, substantially consisting of any suitable material, e.g. plastic or cardboard, for the dispensing of individual flat, substantially planar articles from a stack of such articles. In the stack, the articles are substantially overlying each other. These articles can be e.g. sanitary napkins, panty liners, dry wipes, wet wipes or wipes being treated with a lotion. The intention of the present invention is to provide a container for the above-mentioned articles, which offers basic protection for the contained articles, giving the user of those articles re-assurance of high hygienic security and discretion, as well as ease, convenience

and reliability of delivery of those articles to the user by one-by-one dispensing.

a) Container with lid

[0014] A container suitable for use according to the present invention, as illustrated in Fig. 1, has a bottom (1) and at least one sidewall (2). This sidewall (2) is joined to the bottom (1), forming a tub-like configuration, having an opening opposite to the bottom (1). Alternatively, a container according to the present invention can have four sidewalls (2), being attached to the bottom (1) and forming a tub-like configuration, having an opening opposite to the bottom (1). The sidewalls (2) are joined to each other along their side edges. A re-closable lid (3) is joined to a sidewall (2) via a hinge (4), hereinafter referred to as "lid hinge", so that by closing the re-closable lid (3), said re-closable lid (3) is opposite to the bottom (1) of the container, being spaced apart from said bottom (1) by at least one sidewall (2). Thereby, the opening on one side of the container is closed and the bottom (1), at least one sidewall (2) and the closed re-closable lid (3) are enclosing a volume, which is hereinafter referred to as the interior of the container. The interior of the container is substantially closed to the environment when the re-closable lid (3) is closed. Furthermore, when the re-closable lid (3) is closed the container is substantially impermeable to liquids and vapour.

[0015] The sidewalls (2) of the container according to the present invention are preferably joined at an angle to the bottom (1) of the container, such that the sidewalls (2) substantially have an angle of 90° to the bottom (1) of the container, but also different angles are in the scope of the present invention. In the configurations of the container having one or two sidewalls (2), at least one of those sidewalls (2) needs to have a substantially curved surface in order that the container can enclose a volume. When the container according to the present invention has more than two sidewalls (2), these sidewalls (2) are preferably substantially planar, but can also have a substantially curved surface, as long as the container being formed of the bottom (1) and the at least one sidewall (2) has an opening opposite to the bottom (1). The re-closable lid (3) of the container can have a different size and shape than the bottom (1) of the container. The bottom (1) and the re-closable lid (3) are both preferably substantially planar, but can have substantially curved surfaces as well. The surface of the re-closable lid (3), which is orientated towards the interior of the container when the re-closable lid (3) is closed, is referred to as the inner surface (5) hereinafter.

b) Scooping member

[0016] A scooping member (6), being made of any suitable material, is joined on its proximal end to the inner surface of the re-closable lid (3) via a hinge (7), hereinafter referred to as "scoop hinge". The scoop hinge (7)

is joined to the re-closable lid (3) preferably in the centre of the inner surface of the re-closable lid (3). The scooping member (6) preferably comprises a rod, having a proximal and a pivoting end. The pivoting end of the scooping member (6), being opposite to the proximal end, is provided with a hook, pincer or other gripping means (8). The pivoting end of the scooping member (6) can freely pivot around an axis of rotation, which is preferably substantially parallel to the axis of rotation of the lid hinge (4). It is also in the scope of the present invention that more than one of such scooping members (6) can be joined to the re-closable lid (3) via a common or separate scoop hinges (7). It is preferred that all the scoop hinges (7) are joined to the inner surface (5) of the re-closable lid (3) at a line being substantially parallel to the axis of rotation of the lid hinge (4), but also different configurations are in accordance with the present invention, e.g. for special effects by dispensing a flat, substantially planar article in a particularly shaped configuration, e.g. curved or waved. Furthermore, as illustrated in Fig. 2, it is in accordance with the present invention that instead of a scooping member a substantially flat plate or sheet (10) can be joined at its proximal side to the inner surface (11) of the re-closable lid (12) of the container by a scoop hinge (13). The pivoting side, being opposite to the proximal side, is provided with one or more hooks, pincers or other gripping means (14). In the following description the term "scooping member" will be used to refer to any of the above mentioned alternatives, namely scooping member, plate, sheet or multiplicity of them, and the term "hook" will be used to refer to any of the above mentioned alternatives, namely hook, pincer, claw or other gripping means or a multiplicity of them.

[0017] As illustrated in Fig. 3, it is furthermore in accordance with the present invention that each scoop hinge (20) joining a scooping member (21) to the inner surface of the re-closable lid (22) can itself be joined to the inner surface via a ratchet (24). The ratchet (24) basically comprises a rack and pinion mechanism. The ratchet (24) has the effect that by every opening and subsequent closing of the re-closable lid (22) the scoop hinge (20) travels a short distance along said inner surface towards the side of the re-closable lid (22) being joined to the sidewall (24). The travelling distance is selected such that the height reduction of the stack (28) of articles is compensated so that the scooping member (21) continues to achieve its purpose. The travelling can be initiated either by opening or by closing the re-closable lid (22), but preferably by closing. The ratchet (23) can be of any kind known in the art for such a purpose.

[0018] After the container is emptied it is necessary to reset the ratchet in order that the scooping member (21) can travel back into the initial position, because after refilling of the container the height of the stack (28) is increased. The resetting can be facilitated by initiating a reset mechanism, which lets the scoop hinge (20) being transported to the initial position.

c) Use of the container

[0019] The flat, substantially planar articles to be dispensed one-by-one are contained in the container according to the present invention in a stack (28) of substantially overlying, non-interleaved articles.

[0020] By opening the re-closable lid (22), the scooping member (21) is pulled in a direction opposite to the hinge joining the re-closable lid (22) to the sidewall (24) of the container. Thereby the hook (26) engages the uppermost article (27) out of the stack (28) of flat, substantially planar articles and pulls or pushes it out of the container. By closing the re-closable lid (22) again, the ratchet (23) transports the scoop hinge (20) a small distance along the inner surface of the re-closable lid (22) in direction of the lid hinge (25). Thereby also the scooping member (21) is transported in this direction. By this, in a situation of diminishing article content and thereby decreasing height of the stack (28), the article (27) lying then on top of the stack (28) can be better engaged.

d) Use of the container

[0021] To further ease the dispensing according to the above-mentioned scooping mechanism, the stack (28) of articles contained in the container could be tilted by a tilting means (29). Said tilting means (29) can be e.g. a slope at the bottom of said container.

[0022] Another approach of improving the accessibility of articles when the number of articles in the container is diminishing is to elevate the bottom (30) of the container corresponding to the diminishing height of the stack (28) of articles.

[0023] A further approach for assisted one-by-one dispensing of flat, substantially planar articles out of a container would be to reverse the configuration described before in the way that the re-closable lid of the container is below the stack of articles. By opening the re-closable lid, the hook of the scooping member engages the lowermost article out of the stack and pulls or pushes it out of the container. The stack itself is prevented from falling out of the container because of gravitation by e.g. side panels on each side of the opening of the container, which hold the stack in position. The benefit of this configuration is that a ratchet mechanism or a tilting or elevating means are not needed because the article of the stack to be dispensed is always at the same position, regardless of the number of articles in the stack and thereby the height of the stack.

[0024] A preferred embodiment of the present invention is a container for one-by-one dispensing of sanitary napkins or panty liners, consisting of a container having a bottom, four sidewalls and a re-closable lid. The bottom of the container is substantially congruent with the shape of the bottom layer of the stack of articles to be contained in the container. The re-closable lid is joined to one sidewall of the container by a lid hinge on the side of the sidewall opposite to the bottom of the container.

The pivoting scooping member is joined on its proximal end to a ratchet mechanism via a scoop hinge, which is joined to the inner surface of the re-closable lid of the container. The scooping member is either a finger or a plate, having a hook or pincer on its pivoting end.

[0025] Another preferred embodiment of the present invention is a container for one-by-one dispensing of tampons, consisting of a container having a bottom, four sidewalls and a re-closable lid. The bottom of the container is rectangular and having the same length as the longitudinal length of the tampons contained therein and the same width as the diameter of the tampons contained therein. The re-closable lid is joined to one sidewall of the container by a lid hinge on the side of the sidewall opposite to the bottom of the container. The pivoting scooping member is joined on its proximal end to a scoop hinge, which is joined to the inner surface of the re-closable lid of the container. The scooping member is either a finger or a plate, having a hook or groove, being able to grip a single tampon, on its pivoting end. The bottom of the container is elevated by a spring mechanism according to the diminishing height of the stack of articles due to dispensing.

[0026] A further preferred embodiment of the present invention is a container for one-by-one dispensing of wipes, wet wipes or wipes being treated with a lotion, consisting of a container having a bottom, four sidewalls and a re-closable lid. When the re-closable lid is closed, the container is substantially impervious to liquids and vapour. The bottom of the container is rectangular and having the same length and width as the length and width of the stack of wipes to be contained. The re-closable lid is joined to one sidewall of the container by a lid hinge on the side of the sidewall opposite to the bottom of the container. The pivoting scooping member is joined on its proximal end to a ratchet mechanism via a scoop hinge, which is joined to the inner surface of the re-closable lid of the container. The scooping member is a plate, having a hook on its pivoting end.

[0027] The advantages of the present invention are especially obvious in the context of controlled one-by-one dispensing of wipes, being substantially made of nonwoven webs. Such nonwovens are known for building up significant frictional forces between two adjacent surfaces. By the gripping means of the pivoting scooping member a reliable engaging and subsequent delivery of only one wipe is realized.

[0028] The execution of the scooping member as a plate or sheet (10) has the further benefit that the stack (15) of articles in the container is better protected when the container is opened for dispensing of an article. The plate or sheet (10) can, besides its dispensing functionality, also act as a cover in these circumstances, prevent the stacked articles from e.g. being dusted. Therefore, the plate or sheet (10) must have substantially the same size as the opening of the container, which is exposed when the re-closable lid (12) of the container is opened.

[0029] By a neutrally designed and printed execution

of the container the user of the contained flat, substantially planar articles, such as sanitary napkins, panty liners or tampons, is given improved discretion by preventing the contained articles from being recognized as such.

[0030] Furthermore, because the container prevents the articles contained therein from being soiled or dusted, the individual wrapping of the articles, e.g. sanitary napkins, panty liners or tampons, is not required any longer. This reduces the total amount of packaging and thereby of waste, especially in case of repeated utilization of the container by refilling it with further stacks of articles.

Claims

1. Container for assisted one-by-one dispensing of flat, substantially planar articles out of a stack of such articles, said container having a bottom (1), at least one sidewall (2) being joined to said bottom (1) and an opening, which can be closed by a re-closable lid (3), said re-closable lid (3) being joined to said sidewall via a lid hinge (4), said container comprising a means for assisted one-by-one dispensing of said articles, said means comprising a pivoting scooping member (6), said scooping member (6) being joined to the inner surface (5) of said re-closable lid (3) via a scoop hinge (7), said scooping member (6) having a proximal end joined to said scoop hinge (7) and a pivoting end opposite said proximal end, **characterized in that** said scooping member (6) is provided with a hook, pincer or other gripping means (8) joined to said pivoting end of said scooping member (6).
2. Container according to claim 1, **characterized in that** by opening said re-closable lid (22) of said container said hook (26) of said scooping member (21) engages the uppermost of said articles (27) and pulls or pushes it at least partially out of said container.
3. Container according to any of the preceding claims, **characterized in that** said scooping member (21) is being joined on said proximal end to the inner surface of said re-closable lid (22) of said container via a ratchet mechanism (23).
4. Container according to any of the preceding claims, wherein said opening having a width, said container being **characterized in that** said scooping member is executed as a substantially two-dimensional plate or sheet (10), said plate or sheet (10) having a width, said width of said plate being at least 50%, preferably 75% and more preferably 99% of said width of said opening.

5. Container according to any of the preceding claims, **characterized in that** said stack (28) of articles is tilted by a tilting means (29).
6. Container according to claims 1-5, **characterized in that** said container contains a stack (28) of wet wipes such as humidified toilet paper, humidified household cleaning wipes or wipes being treated with a lotion.
7. Container according to claims 6, **characterized in that** said container is impermeable to liquids and vapour when said re-closable lid (22) is closed.
8. Container according to any of the preceding claims, **characterized in that** said stack (28) of articles is oriented in a way that each said article overlaps the underlying article to at least 80% by surface.
9. Container according to any of the preceding claims, **characterized in that** said bottom (30) of said container can be elevated according to the diminishing height of said stack (28) of articles.

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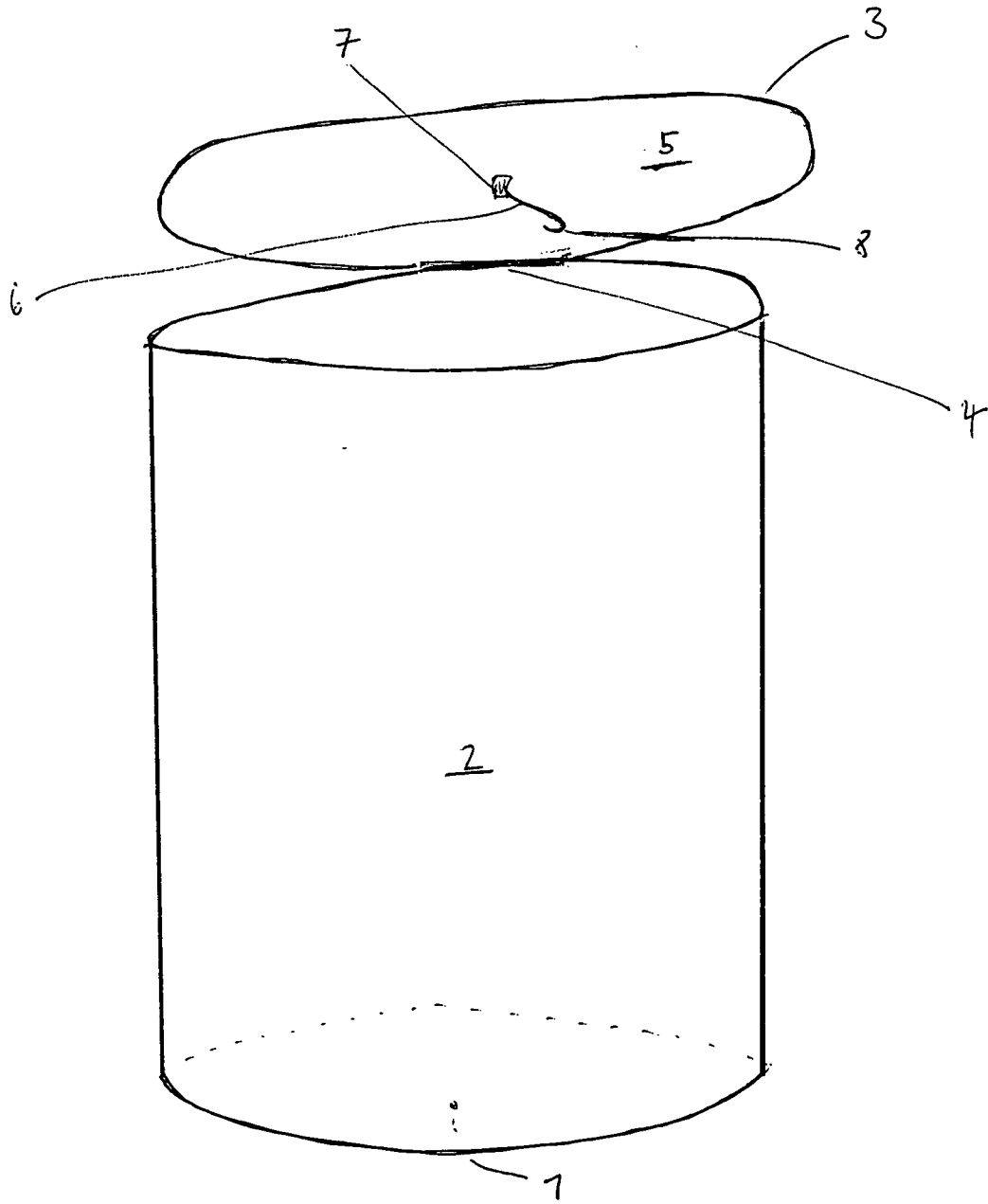


Fig. 1

Fig. 2

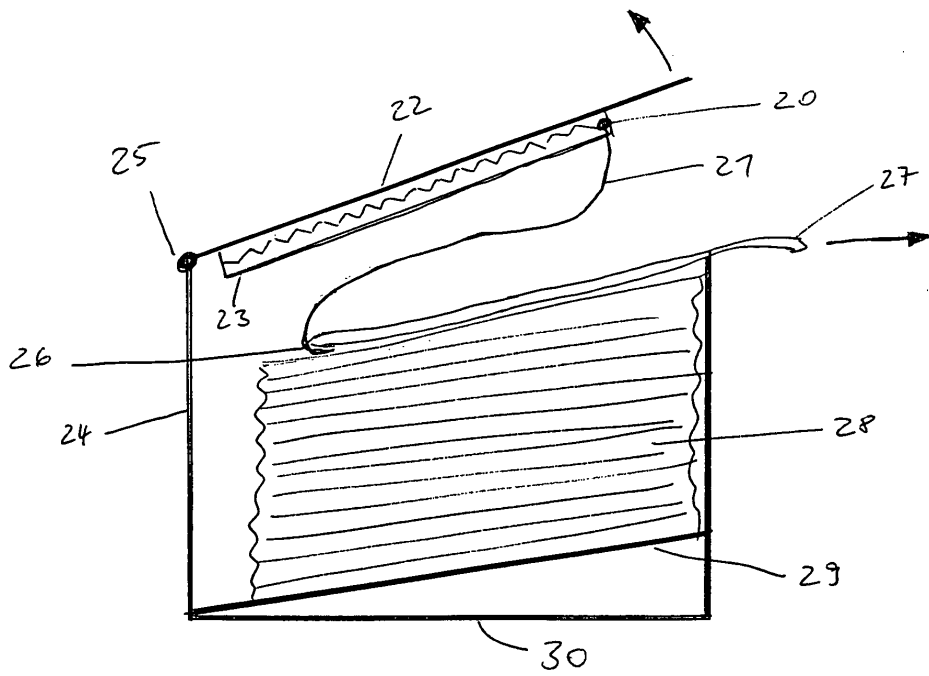
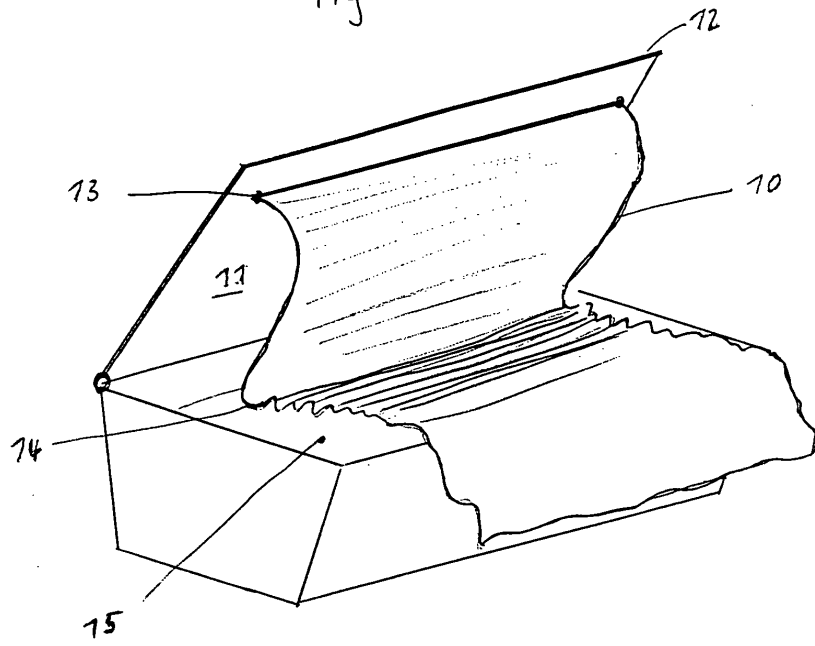


Fig. 3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	US 3 094 323 A (S. J. CATANIA) 18 June 1963 (1963-06-18) * the whole document *	1,2,8	A47K10/44
X	GB 1 573 084 A (ROSS H) 13 August 1980 (1980-08-13) * the whole document *	1,2,8	
X	US 5 197 630 A (KIRLA STANLEY J) 30 March 1993 (1993-03-30) * the whole document *	1,2,4	
X	US 4 071 165 A (LEOPOLDI NORBERT) 31 January 1978 (1978-01-31) * the whole document *	1,2,5,8	
			TECHNICAL FIELDS SEARCHED (Int.CI.7)
			A47K B65D
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		21 August 2001	Delzor, F
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	

EPC FORM 1503 03/92 (10/01/01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 10 9645

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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21-08-2001

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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GB 1573084	A	13-08-1980	NONE	
US 5197630	A	30-03-1993	NONE	
US 4071165	A	31-01-1978	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82