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(11) **EP 1 604 917 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
14.12.2005 Bulletin 2005/50

(51) Int Cl.7: **B65F 1/06**

(21) Application number: **04076656.0**

(22) Date of filing: **07.06.2004**

(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 HR LT LV MK

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Remarks:

Amended claims in accordance with Rule 86 (2)
EPC.

(54) **Container for a disposable trash or bin bag**

(57) The invention relates to a container (1) for a disposable trash or bin bag (3), arranged for placement in a waste bin or trash can (2), having a closed bottom (6), an open top end (5) and a wall (7) extending from the bottom to the top end, whereby the wall is expandable so as to cause that the open top end has variable dimensions.

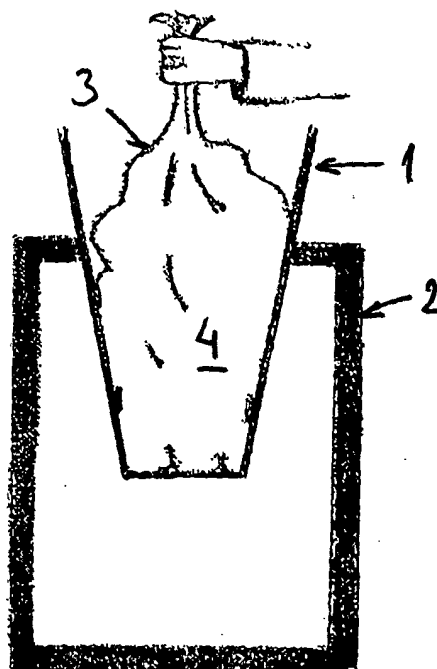


FIG. 3

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Description

[0001] The invention relates to a container for a disposable trash or bin bag, arranged for placement in a waste bin or trash can, having a closed bottom, an open top end and a wall extending from the bottom to the top end.

Background of the invention

[0002] Plastic films formed into disposable trash or bin bags are frequently used for the containment and disposal of domestic rubbish or refuse. Common practice is to insert the liner or bag into an open ended container. The invention relates to this container, which most commonly is inserted into another, open ended container of larger dimension, the latter hereinafter referred to as a waste bin or trash can, such that the first, smaller container is hidden for aesthetic purposes. The liner or bag is folded over the upper edge or lip of the smaller, usually cylindrical, container and the user inserts rubbish or refuse as required until the capacity of the container is reached. The liner or bag is then gathered together at the top and removed from the container by lifting upwards. Frequently, however, difficulty in removing a full liner or bag is encountered due, in part, to a negative pressure formed in the space between the bottom portion of the liner or bag and the container as the full liner or bag is withdrawn from the container. Bulky rubbish or refuse is also pushed outward by gravity such that the liner or bag engages frictionally the walls of the container. The combination of these two forces can be considerable, such that as increasing upward force is applied in order to remove the liner or bag from the cylindrical container the liner or bag can tear, such that rubbish or refuse spills out.

[0003] The problem referred to above has been addressed in a number of patents, amongst which:

[0004] WO 03/093142/GB-2388013 show an inner container in two parts, connected by a pin at its lower end, such that the mouth at the top of the container expands as a liner or bag is removed.

[0005] US-4 054 255 shows an inner cylindrical container with a slit down the side held together with clamps when in the mode of being filled but which may be released in order to facilitate the removal of a full liner or bag.

[0006] GB-2365753/US-5598942 show a solution whereby the inner, cylindrical container, is in the form of a sheet which opens up completely to allow the removal of a liner or bag.

[0007] However, most of the above designs imply a significant redesign to current waste or trash bins such that manufactures of waste or trash bins would have to spend significant resources in modifying production lines. Other designs cited above are likely to be lacking in robustness or ease of use. Some of the designs cited above are limited as to the type of bins to which they

can be applied and still others cannot be applied to existing bins.

Objects and summary of the invention

[0008] Accordingly, it is the object of the present invention to provide a means of easily removing with a minimum of physical effort, a full liner or bag from a container according to the preamble, that overcomes the problems and limitations with the prior art.

[0009] It is another object of the present invention to provide a means of easily removing a full liner or bag from a container that does not imply a significant modification to the production methods of current manufacturers of waste bins or trash cans.

[0010] It is still another object of the present invention to provide a means of easily removing a full liner or bag from a container that is robust, has few, if any moving parts and does not imply a change in the physical manner at which containers are currently emptied.

[0011] The container according to the invention is to this end characterized by one or more of the attached claims.

[0012] In a first aspect of the invention the container is characterized in that the wall is expandable so as to cause that the open top end has variable dimensions. This allows that in the process of lifting the disposable trash or bin bag the open top end of the container increases in dimensions so as to allow easy removal of the disposable trash or bin bag.

[0013] A simple and effective way of effecting the just-mentioned property is obtained in a container which is characterized in that the wall comprises at least one fold.

[0014] Preferably the fold extends from the open top end to a position near the closed bottom.

[0015] Another way of realizing that the wall is expandable is provided in an embodiment of the container which is characterized in that the wall is made of a plastic material with elastomeric properties.

Disclosure of the best embodiment

[0016] The invention shall hereafter be further elucidated with reference to some non-limiting exemplary embodiments of the container according to the invention and with reference to the drawing.

[0017] In the drawing:

- Figs. 1-4 show a sequence of events when removing a filled up liner or bag with refuse;
- Fig. 5 shows the container according to the invention;
- Fig. 6 shows the placement of the container according to the invention into a waste bin or trash can;
- Fig. 7 shows the container according to the invention after placement in a waste bin or trash can;
- Fig. 8 shows a detail of the wall of a second embodiment of the container according to the invention.

[0018] In the figures the same reference numerals relate to the same parts.

[0019] Referring first to Fig. 1 a container 1 according to the invention is shown which is placed into a waste bin or trash can 2.

[0020] The container 1 houses a liner or bag 3 filled up with refuse.

[0021] The essence of the invention is that the container 1 according to the invention has a wall that is expandable. This expansion immediately releases the pressure of the refuse 4 within the liner 3 and allows the liner 3 to be easily removed. This is shown in Figs. 2, 3 and 4 respectively. In Fig. 2 the start of lifting the liner 3 is shown which due to the fact that the liner 3 presses against the inner wall of the container 1 lifts said container 1 as shown in Fig. 3. As the container 1 rises, its volume will increase to a point at which the pressure of the refuse 4 is reduced sufficiently such that the container 1 can drop back and leave the liner of bag 3 free. This is shown in Fig. 4.

[0022] Turning now to Fig. 5 the container 1 according to the invention is shown in a first embodiment. In this embodiment the container 1 is made of a sheet material formed into a closed container having an open ended top 5. The bottom 6 of the container 1 is closed. Furthermore, there is a wall 7 extending from the bottom 6 to the open top end 5. In the wall 7 provision is made so as to cause that the wall 7 is expandable and the open top end 5 can be given different dimensions. To this end the wall 7 comprises at least one fold 8 which preferably extends from the open top end 5 to a position near the closed bottom 6. This is clearly shown in Fig. 5. These folds 8 will allow the circumferential dimensions of the container 1 to reduce when it is placed into a waste bin or trash can 2. This is schematically shown in Figs. 6 and 7 respectively.

[0023] Another embodiment of the container 1 is characterized in that the wall 7 of the container is made of a plastic material with elastomeric properties over the entire circumference or only over part 9 thereof, as shown schematically in the detail of Fig. 8.

[0024] Although in the above drawings reference is made primarily to a cylindrical container it should be noted that the invention is not limited to this type of container and that any form of container may be employed to realize the benefits of the invention. Consequently, the invention is not limited to the given examples and the scope of protection of the invention is therefore entirely determined by the appended claims.

Claims

1. Container for a disposable trash or bin bag, arranged for placement in a waste bin or trash can, having a closed bottom, an open top end and a wall extending from the bottom to the top end, **characterized in that** the wall is expandable so as to cause

that the open top end has variable dimensions.

2. Container according to claim 1, **characterized in that** the wall comprises at least one fold.
3. Container according to claim 2, **characterized in that** the fold extends from the open top end to a position near the closed bottom.
4. Container according to claim 1, **characterized in that** the wall is made of a plastic material with elastomeric properties.

Amended claims in accordance with Rule 86(2) EPC.

1. Container (1) for a disposable trash or bin bag (3), arranged for placement in a waste bin or trash can (2), having a closed bottom (6), an open top end (5) and a wall extending from the bottom (6) to the top end (5), wherein the wall (7) is expandable so as to cause that the open top end (5) has variable dimensions, **characterized in that** when the trash or bin bag (3) filled with refuse (4) together with the container (1) is lifted from the waste bin or trash can (2), pressure on the disposable trash or bin bag (3) is released allowing said trash or bin bag (3) to be removed from the container (1).

2. Container according to claim 1, **characterized in that** the wall (7) comprises at least one fold (8).

3. Container according to claim 2, **characterized in that** the fold (8) extends from the open top end (5) to a position near the closed bottom (6).

4. Container according to claim 1, **characterized in that** the wall (7) is made of a plastic material with elastomeric properties.

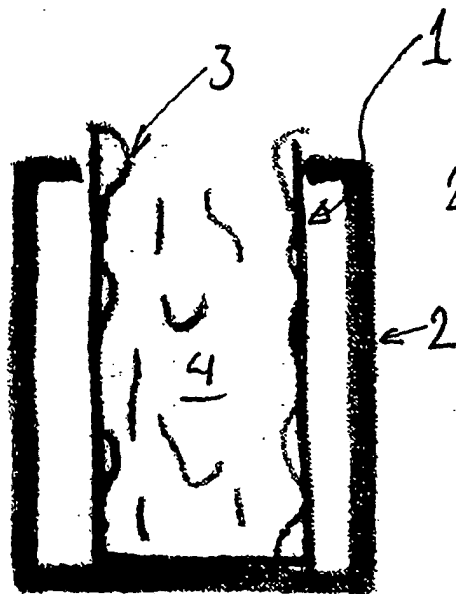


FIG. 1

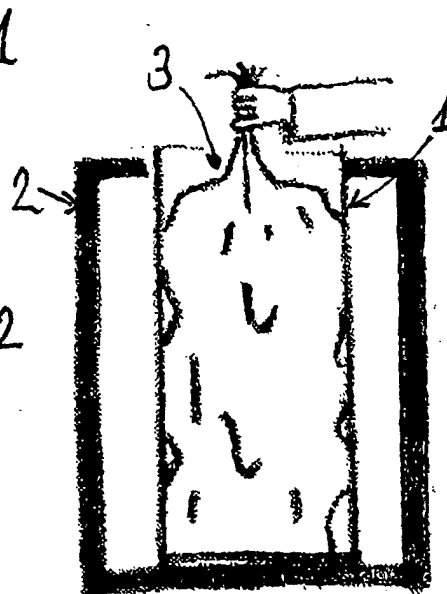


FIG. 2

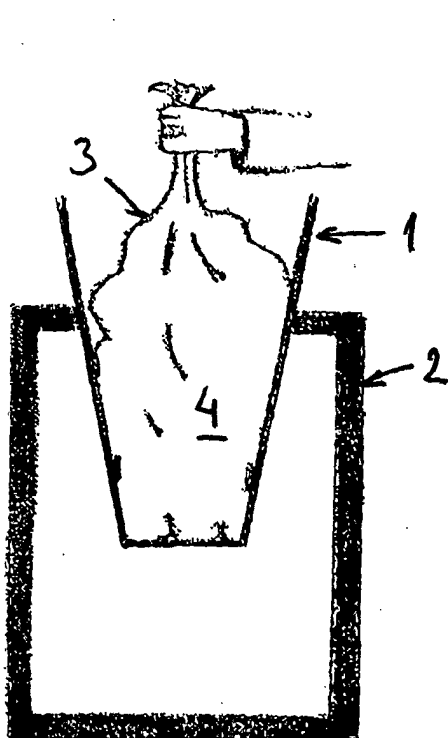


FIG. 3

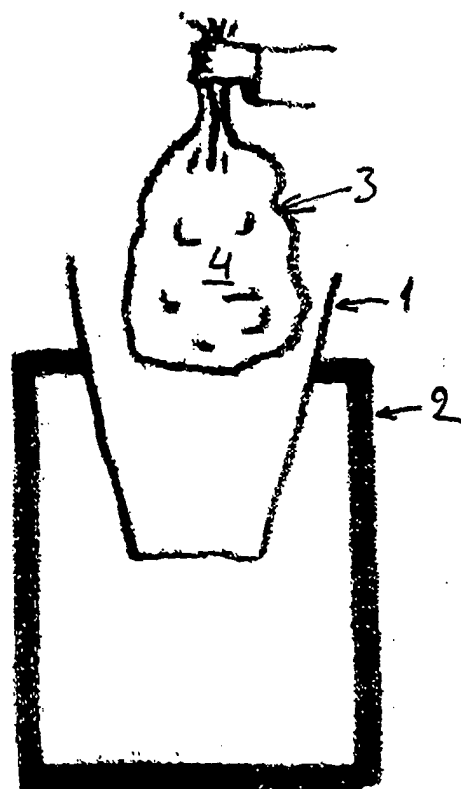
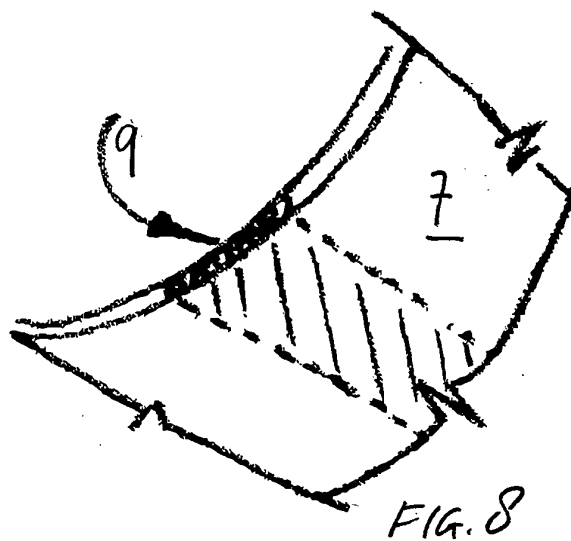
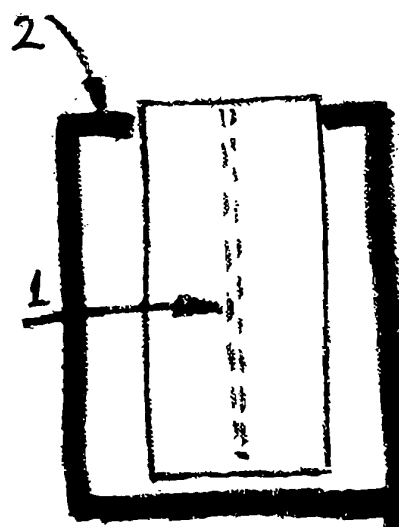
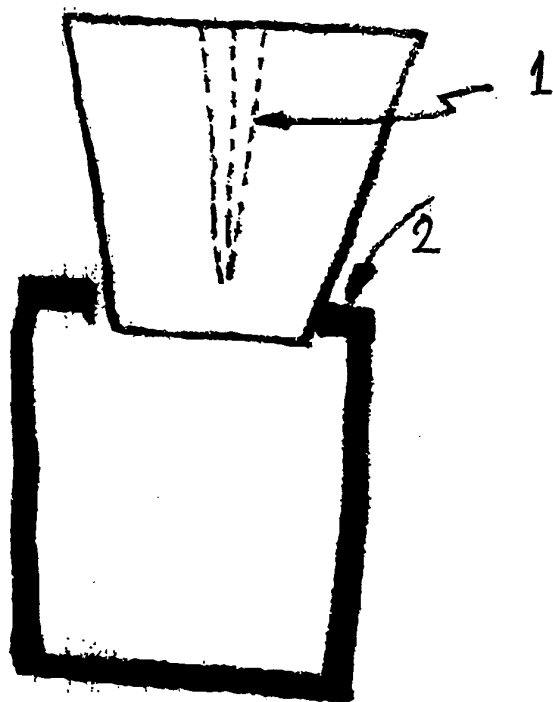
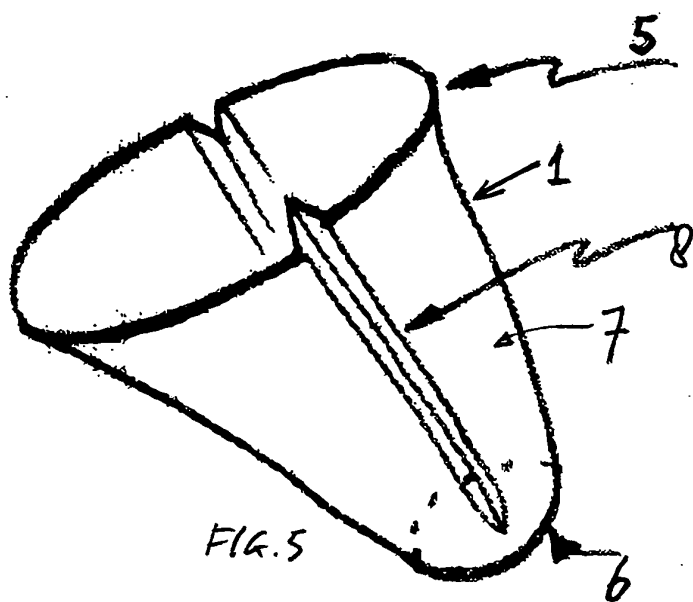


FIG. 4





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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 6656

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	WO 00/56635 A (REYNOLDS CONSUMER PRODUCTS, INC.) 28 September 2000 (2000-09-28) * page 4, line 22 - page 6, line 14 * * figures 1-5 * -----	1-4	B65F1/06
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A	GB 2 386 826 A (S. CASTLE) 1 October 2003 (2003-10-01) * the whole document * -----	1	
D,A	US 4 054 225 A (TH. FRECH) 18 October 1977 (1977-10-18) * the whole document * -----	1	
D,A	GB 2 388 013 A (G. COOK) 5 November 2003 (2003-11-05) * the whole document * -----	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65F B65D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 October 2004	Examiner Smolders, R
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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EPO FORM 1503 03.82 (P04C01)

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

EP 04 07 6656

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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28-10-2004

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