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(54) **Tubular Bag**

(57) The present invention relates to a bag (1) made of a flexible packaging material by folding a sheet of material and comprising:

- a sidewall (2), a top area (3) and a bottom area (4),
- two cross seams (5,6),

- a longitudinal seal (7),
- at least three edge seals (8) and
- an opening area (9), which is located in the top or in the bottom area (3,4) and which is preferably reclosable by closing means (15).

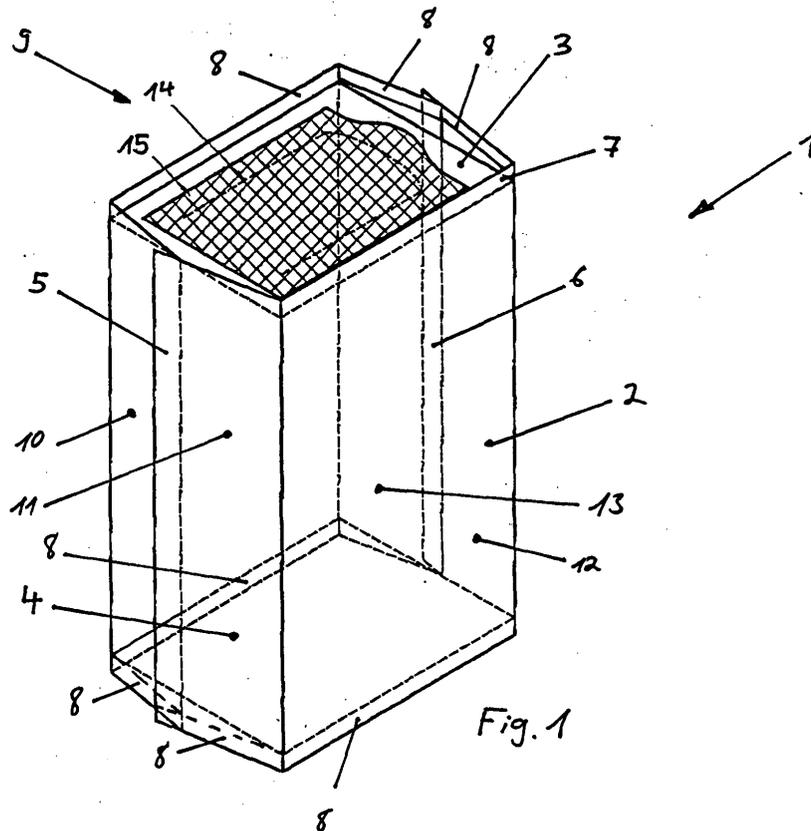


Fig. 1

Description

[0001] The present invention relates to a bag made of a flexible packaging material by folding a sheet of material and comprising:

- a sidewall, a top area and a bottom area,
- two cross seams,
- a longitudinal seal,
- at least three edge seals and
- an opening area, which is located in the top or in the bottom area and which is reclosable by closing means.

[0002] The present invention also relates to a process to produce the inventive bag.

[0003] Foodstuff, especially sweets and snacks are nowadays merchandised in packaging items made of a plastic material. These packaging items must be manufactured cost-efficiently and must be appealing in order to present the packaged product appropriately. Furthermore, the package must be opened easily, stackable and preferably reclosable.

[0004] It is therefore the objective to provide a bag that has the above mentioned features

[0005] This problem is solved with a bag made of a flexible packaging material by folding a sheet of material and comprising:

- a sidewall, a top area and a bottom area,
- two cross seams,
- a longitudinal seal,
- at least three edge seals and
- an opening area, which is located in the top or in the bottom area and which is preferably reclosable by closing means.

[0006] It was totally surprising and could not have been expected by a person skilled in the art that the inventive bag can be cost-efficiently produced, is appealing and is opened easily, stackable and reclosable.

[0007] According to the present invention, the bag comprises an opening area, through which the packaged items can be removed from the bag and which is reclosable by a closing means. This closing means can be any means known by a person skilled in the art. Preferably the closing mean is a sticker and/or a hot melt so that the opening area, for example a flap, can be reattached to the bag.

[0008] Preferably, the inventive bag comprises four side folds, which are located in the sidewall, whereas two side folds are sealed together by a cross seam, respectively. Due to this feature, the bag has the form of a cuboid.

[0009] In a preferred embodiment of the present invention, the bag comprises opening means, which are located in the vicinity of the opening area. Preferably, these opening means facilitate the controlled tear of the

packaging material. Preferably this means is an indentation and/or a scoring of the packaging material. In another preferred embodiment of the present invention the packaging material is an oriented material, preferably a plastic film, so that it tears along a certain path.

[0010] Preferably, the opening area has the form of a flap.

[0011] In a preferred embodiment of the present invention are the cross seams attached to the sidewalls.

10 The attachment is preferably accomplished by bending the cross seams towards the sidewall, preferably the side folds and attaching them with an adhesive material for example hot melt and/or an adhesive layer, which is applied between the sidewall and the cross seam. This embodiment of the present invention has the advantage that the appearance of the bag as a cuboid is improved. It has an improved stability to stand up and it is stackable. In general, the presentation of the bag in the shelf is improved.

20 **[0012]** The inventive bag can be produced of any packaging material. Preferably, the material is plastic film, more preferred an oriented plastic film, which facilitates the controlled opening of the inventive bag.

[0013] An other subject matter of the present invention is a process for producing the inventive bag, whereas packaging material is formed and sealed and the opening means is inserted prior or after the forming and the sealing.

25 **[0014]** According to the inventive process, the opening means are inserted into the packaging material prior or after the forming and sealing of the bag. The opening means which is preferably an indentation and/or a scoring of the packaging material can be in the original packaging material or can be applied to the packaging material on the flow wrapper. The indentation and/or scorings can be incorporated for example by a knife, a laser and/or a punch.

30 **[0015]** In a preferred embodiment of the inventive process, the closing means are applied after the insertion of the opening means. If, for example, the closing means is a sticker, the sticker can be applied after the opening means have been incorporated into the packaging material.

35 **[0016]** Preferably, at least one cross seam, preferably both, is(are) bent towards the sidewall, preferably the side folds, and is more preferably attached to the sidewall. This is preferably accomplished by applying an adhesive material, for example hot melt between the cross seal and the sidewall and placing the filled bag on the cross seam. Due the gravity of the bag, one cross seam is pushed against the sidewall an permanently attached to the sidewall due to the adhesive material for example the glue. If a second cross seam is attached to the sidewall, this has to be accomplished by an external force, for example a pusher.

50 **[0017]** In a preferred embodiment of the present invention, the atmosphere in the bag is at least partial removed prior and/or during bending and attaching of at

least one cross seam. The removal of the atmosphere can be accomplished by producing for example cross seams which are prior to the bending not gas tight or by inserting holes into the bag, which are closed after the bending of the cross seams is completed.

[0018] The invention will be described in greater detail hereinafter in connection with the drawings which illustrate exemplary embodiments of the present invention and in which:

Figure 1 shows a perspective view of the inventive bag,

Figure 2 shows the inventive bag from the top and

Figure 3 shows a different embodiment of the inventive bag.

[0019] **Figure 1** shows a perspective view of the inventive bag. The bag 1 is made of a plastic film and comprises a sidewall 2 and a top area 3 and a bottom area 4. The bag 1 has four side folds 10-13 whereby two side folds are sealed together by cross seams 5, 6 respectively. At the top and at the bottom the inventive bag comprises welded edges 8 in order to improve the cuboid form. A longitudinal seam 7 extends or is aligned with one of the welded edges 8. At the top the bag comprises an opening area 9 which allows to open the bag and remove the packaged items from the bag. The opening area has opening means 14 which facilitate the opening of the bag. In the present case, the opening means is a U-shaped scoring, so that the bag is opened by a flap. Additionally, the inventive bag comprises a sticker which sticks to the flap as well as to the surrounding area, while the attachment of the sticker to the flap is stronger than to the surrounding area. When the sticker 15 is removed from the inventive bag, it sticks to the flap and due to the scoring 14 the packaging material tears along the U-shaped scoring, so that a flap is created. The sticker 15 can also be used to reclose the bag after some of the packaged items have been removed. The persons skilled in the art understands, that the inventive bag can also be opened without the sticker 15.

[0020] The inventive bag is produced for example on a vertical flow wrapper by forming a flat foil wrap into a rectangular shape, applying the longitudinal seal 7 and the welded edges 8. The scoring of the film can be either applied before or after the forming of the web and the application of the longitudinal weld 7 and the edge welding 8. The same is true for the sticker 15, if present.

[0021] After the application of the longitudinal weld 7 and the edge weldings 8, the side folds 10 and 11 are formed and the cross seam 5 is applied. Afterwards, the bag is filled and subsequently the side folds 12 and 13 and weld 6 are manufactured. In order to achieve that cross seams 5 and 6 are attached to the side wall 2, the inventive bag is deposited on a belt or the like with the cross seam 5 facing downwards. Due to the gravity of

the bag and its content and due to a glue (not depicted) which is applied between the sidewall 2 and the cross seam 5, the cross seam 5 is permanently attached to the sidewall 2. Cross seam 6 is attached to the sidewall 2 by applying an adhesive material (not depicted) between the sidewall 2 and the cross seam 6 and folding seam 6 towards the sidewall 2 for example with a pusher. Due to the adhesive material, seam 6 remains in its bended position. However, before the attachment of seam 6 at least some of the atmosphere in the bag has to be removed. The removal of the atmosphere in the bag can be achieved by for example by a cross seam 6, which is not gas tight before its attachment to the sidewall and/or small holes which are closed after the seam 6 has been attached to the sidewall 2. The person skilled in the art understands, that the seams 5, 6 need not be attached to the sidewall 2

[0022] **Figure 2** shows a top view of the inventive bag. It can be seen that the sticker 15 has a flap 16, which is not glued to the top portion of the bag in order to facilitate the removal of the sticker 15 and thus the opening of the bag.

[0023] **Figure 3** shows another embodiment of the inventive bag. In the present case, the longitudinal weld 7 is not aligned with one of the edge weldings 8. In the longitudinal seams there are indentations 14 which facilitate the rupture of the packaging film. In the present case the packaging film is an oriented material so that the bag tears open essentially along straight lines.

Reference numbers:

[0024]

35	1	bag
	2	sidewall
	3	top area
	4	bottom area
	5, 6	cross seams
40	7	longitudinal seal
	8	edge seals
	9	opening area
	10 - 13	side folds
	14	opening means
45	15	closing means
	16	flap

Claims

1. A bag (1) made of a flexible packaging material by folding a sheet of material and comprising:
 - a sidewall (2), a top area (3) and a bottom area (4),
 - two cross seams (5, 6),
 - a longitudinal seal (7),
 - at least three edge seals (8) and

- an opening area (9), which is located in the top or in the bottom area (3, 4) and which is preferably reclosable by closing means (15).

- 2. Bag according to claim 1, **characterized in that** the closing means (15) is a sticker and/or a hot melt. 5

- 3. Bag according to anyone of the preceding claims, **characterized in, that** it comprises four side folds (10 - 13), whereas two side folds are sealed together by the cross seams (5, 6), respectively, 10

- 4. Bag according to anyone of the preceding claims, **characterized in, that** it comprises opening means (14) which are located in the vicinity of the opening area. 15

- 5. Bag according to claim 4, **characterized in, that** the opening means (14) is a scoring. 20

- 6. Bag according to anyone of the preceding claims, **characterized in, that** the cross seams (5, 6) can be attached to the sidewall (2), preferably by an adhesive material. 25

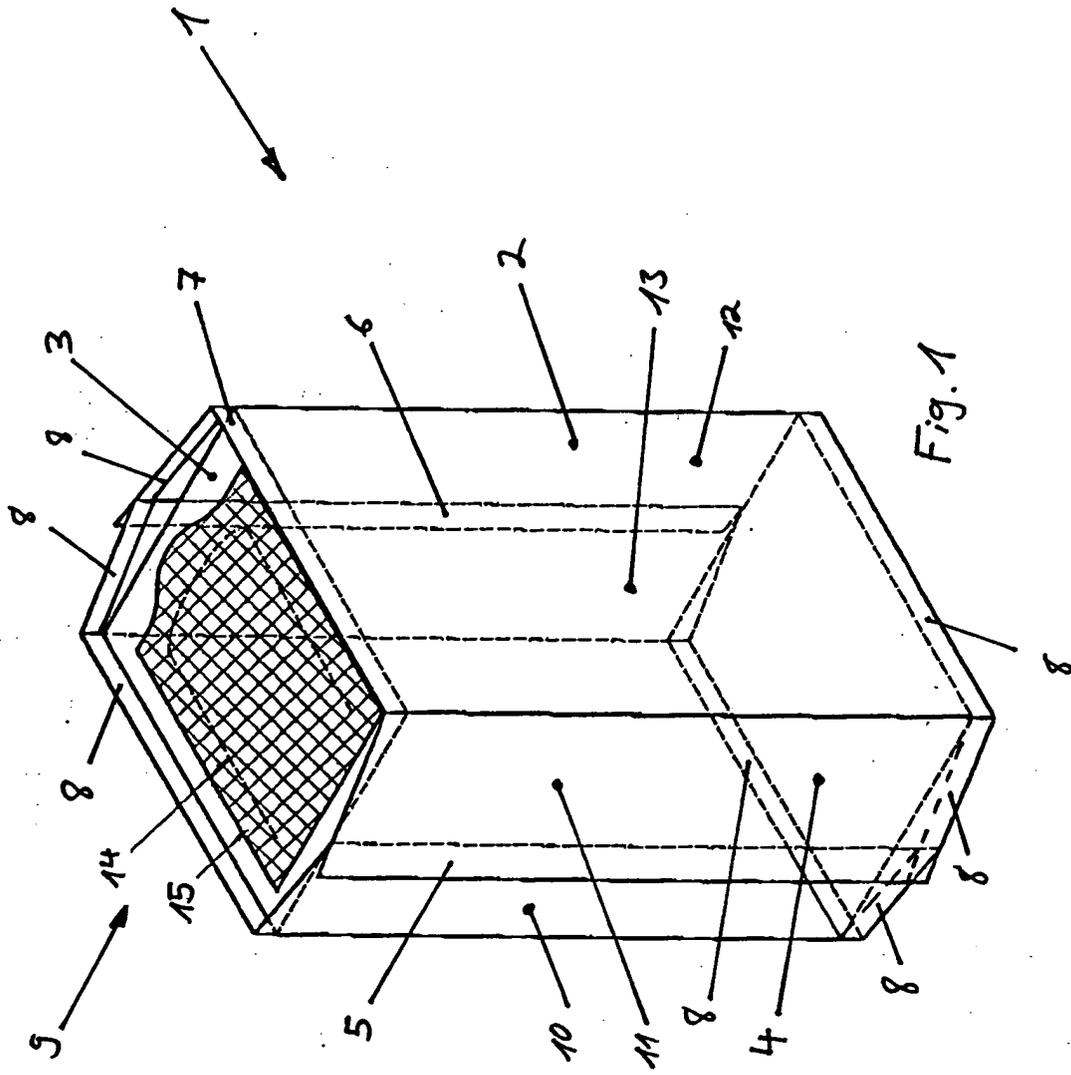
- 7. Bag according to anyone of the preceding claims, **characterized in, that** the packaging material is a oriented material.

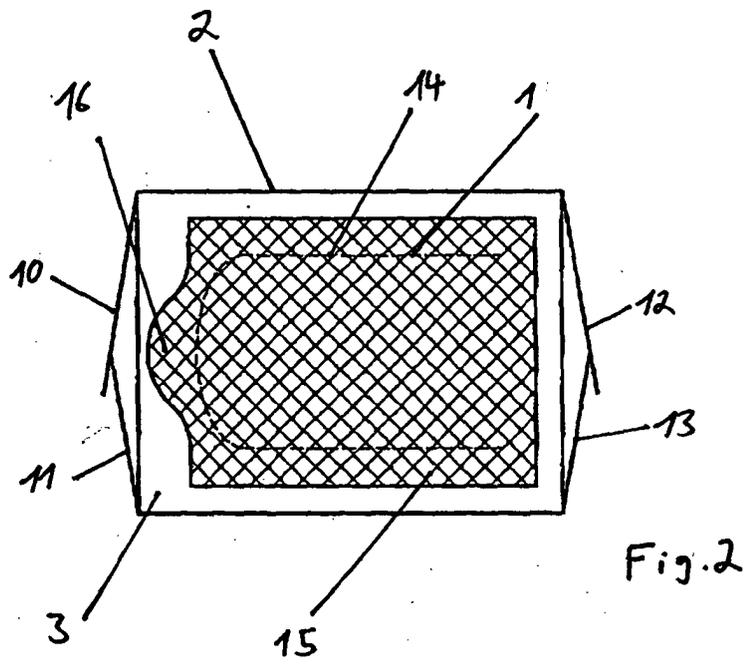
- 8. Process for producing a bag according to claims 1 - 7, **characterized in, that** the packaging material is formed and sealed and that the opening means (9) is inserted prior or after the forming and the sealing. 30
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- 9. Process according to anyone of the preceding claims, **characterized in, that** the closing means are applied after the insertation of the opening means (9). 40

- 10. Process according to anyone of the preceding claims, **characterized in, that** at least one cross seam (5, 6) is bent towards the sidewall (2) and preferably attached to the sidewall (2). 45

- 11. Process according to claim 10, **characterized in, that** the atmosphere in the bag is at least partial removed prior and/or during bending and attaching of the cross seams. 50
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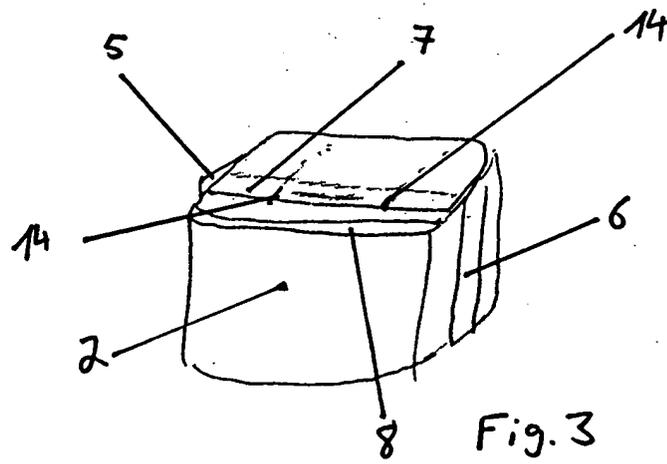


Fig. 3



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 02 1013

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 03/051730 A (MCGREGOR JAMES R) 26 June 2003 (2003-06-26)	1,3-6, 8-10	B65D75/58
Y	* claim 42; figures 1,3,9,12 *	2,7,11	
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 11, 30 September 1998 (1998-09-30) -& JP 10 152146 A (DAINIPPON PRINTING CO LTD), 9 June 1998 (1998-06-09) * abstract; figure 1 *	1,4,6,8, 9	B65D
X	EP 1 078 861 A (DAIWA GRAVURE CO LTD) 28 February 2001 (2001-02-28) * column 13, line 35 - line 47; figures 8,9 *	1,3,6,8, 10	
Y	US 4 420 080 A (NAKAMURA KENJI) 13 December 1983 (1983-12-13) * figure 11 *	2	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Y	EP 0 573 782 A (EASTMAN KODAK CO) 15 December 1993 (1993-12-15) * page 2, line 41 - line 43; figure 7 *	7	B65D
Y	US 5 352 466 A (DELONIS MICHAEL E) 4 October 1994 (1994-10-04) * column 1, line 31 - line 35 *	11	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 1 December 2004	Examiner Bridault, A
CATEGORY OF CITED DOCUMENTS		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	
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			

EPO FORM 1503 03.02 (P4/C01)

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

EP 03 02 1013

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-12-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03051730	A	26-06-2003	CA 2470310 A1	26-06-2003
			EP 1467918 A1	20-10-2004
			WO 03051730 A1	26-06-2003

JP 10152146	A	09-06-1998	NONE	

EP 1078861	A	28-02-2001	JP 2001130598 A	15-05-2001
			EP 1078861 A2	28-02-2001
			US 6419393 B1	16-07-2002

US 4420080	A	13-12-1983	JP 56173109 U	21-12-1981
			JP 58030495 Y2	05-07-1983
			JP 1270669 C	25-06-1985
			JP 57037560 A	01-03-1982
			JP 59046862 B	15-11-1984
			JP 1160295 C	25-07-1983
			JP 57045809 A	16-03-1982
			JP 57053727 B	15-11-1982
			JP 1190481 C	13-02-1984
			JP 56084205 A	09-07-1981
			JP 58022411 B	09-05-1983
			JP 56084942 U	08-07-1981
			JP 59002696 Y2	25-01-1984
			AU 555436 B2	25-09-1986
			AU 2688984 A	02-08-1984
			AU 536262 B2	03-05-1984
			AU 6473480 A	11-06-1981
			DE 3069237 D1	25-10-1984
			DE 3072193 D1	25-07-1991
			DE 3072208 D1	18-11-1993
			DE 3072208 T2	19-05-1994
			EP 0030348 A1	17-06-1981
			EP 0119314 A2	26-09-1984
			EP 0420301 A1	03-04-1991
			GR 72501 A1	15-11-1983
			HK 60485 A	23-08-1985
			MY 102185 A	31-12-1985
SG 79684 G	26-04-1985			
US 4538396 A	03-09-1985			
US 4616470 A	14-10-1986			
US 4651874 A	24-03-1987			
US 4739879 A	26-04-1988			

EP 0573782	A	15-12-1993	CA 2093170 A1	14-11-1993
			EP 0573782 A2	15-12-1993
			JP 6047858 A	22-02-1994

EPO FORM P0459

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

EP 03 02 1013

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-12-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5352466	A	CA 2078793 A1	16-04-1993
		JP 3335676 B2	21-10-2002
		JP 5213348 A	24-08-1993

EPO FORM P0459

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