



(11) **EP 2 006 215 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
24.12.2008 Bulletin 2008/52

(51) Int Cl.:
B65D 65/14 (2006.01) B65D 85/10 (2006.01)

(21) Application number: **07110699.1**

(22) Date of filing: **20.06.2007**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE
SI SK TR**
Designated Extension States:
AL BA HR MK RS

(72) Inventor: **The designation of the inventor has not yet been filed**

(74) Representative: **Bohest AG
Postfach 160
4003 Basel (CH)**

(71) Applicant: **Philip Morris Products S.A.
2000 Neuchâtel (CH)**

(54) **Wrapped bundle of smoking articles**

(57) The invention is directed to a wrapped bundle of smoking articles comprising at least one inner liner (3), wherein the inner liner (3) comprises an inner surface (320, 330, 340) with a top side, a bottom side (320) and at least one long side (330, 340) which is provided with an adherent section (37) for making tobacco shorts (4) stick to that adherent section (37)..

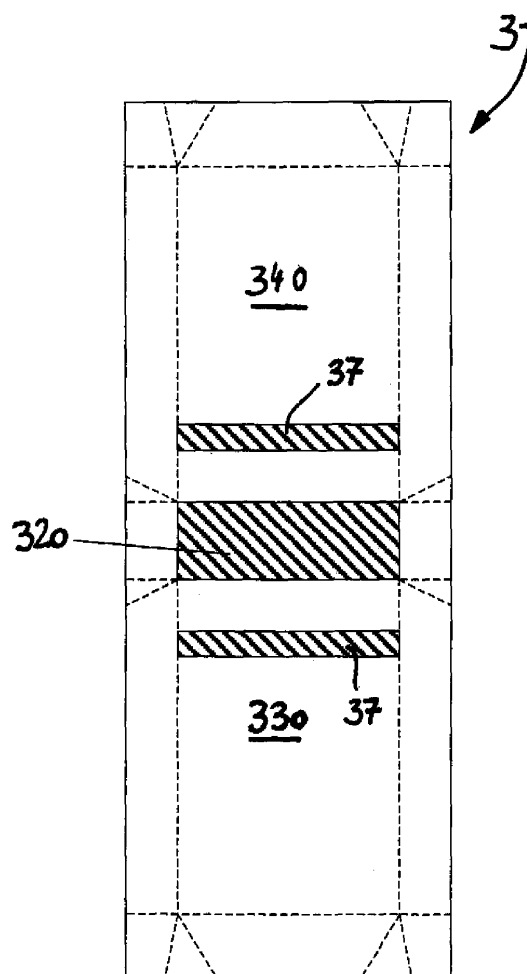


Fig. 3

Description

[0001] The invention relates to a wrapped bundle of smoking articles such as cigarettes and in particular of smoking articles comprising a filter such as filter cigarettes.

[0002] For the purpose of packaging, a predetermined collation of a plurality of smoking articles is wrapped tightly into an inner liner to form a wrapped bundle.

[0003] Typically an inner liner used to wrap a bundle of smoking articles is made either from a single packaging material for example paper or aluminum foil or from a combination of packaging materials for example paper, aluminum foil and a plastic material.

[0004] After the bundle of smoking articles is wrapped in the inner liner the bundle is closed for example by gluing or sealing the inner liner flaps along the sides of the bundle as well as on the bottom and the top of the bundle. Typically, the wrapped bundle is then inserted into an outer pack for example a hinge lid pack or the hinge lid pack is assembled around the wrapped bundle.

[0005] Alternatively, the wrapped bundle may be the outer package of the cigarettes. In that case, the inner liner is the outer wrapper of the pack of smoking articles.

[0006] Smoking articles comprising a filter typically comprise a tobacco rod section containing cut filler and a filter section comprising one or more filter segments. As such, the filter cigarette comprises a filter end and a tobacco rod end.

[0007] During the packaging process and subsequent pack transportation and handling tobacco particles may fall out of the tobacco rod. These tobacco particles are often referred to as "tobacco shorts". Because of the handling, the tobacco shorts tend to move inside the wrapped bundle. Even before the wrapped bundle is opened, the tobacco shorts may have migrated to the outside of the smoking articles, to the filter end of the smoking articles if a filter is present, and to the surface of the inner liner. Visible tobacco shorts give an undesirable appearance to a pack of smoking articles and to the smoking articles themselves, and are particularly undesirable on the filter of a smoking article.

[0008] In order to reduce the number of visible tobacco shorts the tobacco rod is compressed in the region of the tobacco rod end of the smoking article during the manufacturing of the smoking article. The compressed section is referred to as "high density end". The compression of the tobacco rod at the open tobacco rod end serves as a plug to keep smaller tobacco particles from falling out. Nevertheless, the high density ends do not completely avoid the occurrence of tobacco shorts.

[0009] Accordingly, it is an object of the invention to provide a wrapped bundle of smoking articles that reduces the movement of the tobacco shorts inside the wrapped bundle and in particular to prevent the tobacco shorts from reaching the filter end if a filter is present.

[0010] In order to further reduce the number of visible tobacco shorts, a wrapped bundle of smoking articles

according to the invention comprises an inner liner, the inner liner comprising an inner surface, wherein the inner surface is provided with at least one adherent section for making tobacco shorts stick to said adherent section. The at least one adherent section avoids or at least reduces the movement of tobacco shorts away from the open end of the smoking article.

[0011] The term "inner surface" of the inner liner is used throughout the specification to denote the surface of the inner liner that faces the smoking articles in the bundle. Depending on the shape of the bundle, the inner surface has two or more long sides, a bottom side and a top side. The long sides are parallel to the longitudinal direction of the smoking articles inside the bundle.

[0012] The term "top side" of the bundle of smoking articles is used throughout the specification to denote the side of the bundle that is opened to remove a smoking article from the bundle. Typically, a smoking article with a filter is arranged inside the inner liner of the bundle such that the filter end of the smoking article is close to the top side of the bundle.

[0013] The term "bottom side" of the bundle of smoking articles is used throughout the specification to denote the side of the bundle that is distant from the top side. Typically, a smoking article with a filter is arranged inside the inner liner of the bundle such that the high density end of the smoking article is close to the bottom side of the bundle.

[0014] Preferably, the at least one adherent section is of low tack, sufficiently tacky to make the tobacco shorts stick to the at least one adherent section but at the same time not tacky enough for smoking articles to strongly adhere to the at least one adherent section. A suitable adhesive is a low tack adhesive, for example a synthetic semi-pressure sensitive hotmelt adhesive such as PRIMAGRIP 38-638 or for example a water based polyethylene adhesive such as TOBACOLL ZD 4404-01, both available from HENKEL AG or a removable acrylic based adhesive.

[0015] Preferably, the at least one adherent section is provided on at least one long side of the inner surface of the inner liner. Preferably, the at least one adherent section on the at least one long side is arranged closer to the bottom side of the bundle.

[0016] Alternatively or in addition, the at least one adherent section, or an additional adherent section, is provided on the inner surface of the bottom side of the inner liner, facing the tobacco rod ends of the smoking articles.

[0017] It is preferred that the at least one adherent section is in the form of one or more stripes. Preferably, one to a hundred stripes are arranged on the long surface sides of the inner liner. In embodiments with three to ten stripes of adhesive, the stripes may be arranged either with similar spacing and width or with varying spacing and varying width. Where the three to ten adhesive stripes have a varying spacing or width, preferably the spacing is lower and the width of the adhesive stripes is greater near the bottom side of the bundle. Depending

on the width and spacing of the stripes a larger number of stripes, for example twenty, fifty or one hundred stripes, may be arranged on the long sides of the inner surface of the inner liner.

[0018] Alternatively or in addition, the at least one adherent section is covered only partially with adhesive, for example with a dotted, striped or grid pattern or with any other design of adhesive coverage.

[0019] For example the one or more stripes have a width of between about 0.1 mm to about 10 mm, preferably, between about 1 mm to about 5 mm. If more than two stripes are present, the stripes preferably have a distance of between about 0.1 mm to about 10 mm, preferably, between about 1 mm to about 5 mm.

[0020] It is further preferred that the one or more stripes of the at least one adherent section are arranged in a substantially horizontal direction. Preferably, one to ten stripes are arranged substantially horizontal on the long surface sides of the inner liner.

[0021] Alternatively, the one or more stripes on the at least one long side inner surface are arranged in a substantially vertical direction.

[0022] Alternatively, or in addition the at least one adherent section has for example the form of zigzag or wavy lines, dots, letter types, a grid, geometrical shapes like triangles, semicircles or other, combinations thereof or may cover the entire inner surface of the inner liner.

[0023] The at least one adherent section may be produced by application of an adhesive or glue to the respective inner surface section. The glue is applied, for example, by a glue nozzle system in a glue application unit during the manufacturing process of the inner liner. Alternatively, the glue may be applied during the packaging process of the wrapped bundle.

[0024] Another aspect of the present invention relates to a pack for smoking articles comprising an outer pack and a wrapped bundle inside the outer pack, wherein the wrapped bundle is a wrapped bundle as described above.

[0025] In one embodiment the pack for smoking articles is a hinge lid pack, while in another embodiment the pack for smoking articles is a soft pack. Alternatively, the wrapped bundle according to the present invention is the final pack. In that case the inner liner is the outer and only wrapper of the bundle of smoking articles.

[0026] Further advantageous embodiments or aspects become apparent from the following description of embodiments of the wrapped bundle according to the invention with the aid of the drawings in which:

Fig. 1 shows a perspective view of a hinge lid pack comprising a wrapped bundle with tobacco shorts being visible on the inner bottom side surface,

Fig. 2 shows a perspective view of the wrapped bundle of Fig. 1, and

Fig. 3 shows an embodiment of an inner liner blank for a wrapped bundle according to the inven-

tion, provided with adherent sections on the inner bottom surface and with horizontally running adherent sections on each of the larger side surfaces.

[0027] In Fig. 1 shows a so-called hinge lid pack 1 comprising an outer pack 2 and a wrapped bundle inside the outer pack 2. The wrapped bundle comprises an inner liner 3, tightly wrapped round a collation of smoking articles 5. The wrapped bundle has overlapping flaps 30 and 31 at its top side. In the broken away portion of Fig. 1 the tobacco shorts 4 are visible at the bottom side of the inner surface of the inner liner 3 where the tobacco rod ends of the smoking articles 5 point to.

[0028] Fig. 2 shows the wrapped bundle in greater detail. It comprises two overlapping flaps 30 and 31 at its top side, a bottom side 32, two larger long side surfaces forming a front surface 33 and a back surface 34, as well as two smaller long side surfaces 35 and 36.

[0029] In Fig. 3 an embodiment of the blank of the inner liner 3 according to the invention is shown. On the inner surface of the inner liner 3 adherent sections 37 are provided with horizontally running adherent stripes 37, marked with a diagonally striped background in the figures. In the embodiment shown in Fig. 3, one adherent section is arranged on each of the larger long sides of the inner surfaces 330 and 340 of the inner liner. In addition, the bottom inner surface 320 is fully coated with a low tack adhesive or glue. Tobacco shorts 4 that may fall out of the high density ends of the smoking articles 5 are trapped by sticking to the adherent bottom side of the inner surface 320. In addition, further tobacco shorts 4 may be trapped by the adhesive stripes 37 provided on the long sides 330 and 340, respectively. This keeps the tobacco shorts at the lower end of the wrapped bundle. Accordingly, fewer or no tobacco shorts will appear at the top side of the wrapped bundle or on the filters of a smoking article. The adherence between the smoking articles 5 and any adherent section 37 is such that the smoking articles within the wrapped bundle stick to the adherent sections 37 only very lightly or not at all.

[0030] In an alternative embodiment (not shown) the blank of the inner liner 3 is provided with two separate horizontally running stripes 37 on each of the larger and smaller long side surfaces 330 and 340.

[0031] In a further alternative embodiment (not shown) the blank of the inner liner 3 is provided with five separate horizontally running stripes 37 on each of the larger and smaller long side surfaces 330 and 340 but not on the bottom surface.

[0032] In a further alternative embodiment (not shown) the blank of the inner liner 3 is provided with four vertically running adherent stripes 37 on each of the larger inner side surfaces 330 and 340.

[0033] Generally, the adhesive may be applied in any suitable way. For example, the adhesive is applied by an embossed or debossed roller similar to gravure or flexography printing processes, or through a nozzle. The dis-

closed stripes are only exemplary for the pattern of the adherent section. Other patterns such as dots, combinations of dots and lines, combinations of horizontal, diagonal and vertical lines forming a grid or even one, two, three, four five or all fully coated inner liner surfaces are conceivable. The adhesive is applied either on-line, that is as an additional process step of the packing machine, or off-line, for example before the inner liner is fed into the packing machine.

5

10

Claims

1. Wrapped bundle of smoking articles (5) comprising at least one inner liner (3), wherein the inner liner (3) comprises an inner surface (320, 330, 340) with a top side, a bottom side (320) and at least one long side (330, 340) wherein the inner surface (320, 330, 340) is provided with at least one adherent section (37) for making tobacco shorts (4) stick to that adherent section (37). 15 20
2. Wrapped bundle according to claim 1, wherein the at least one adherent section (37) is provided on the at least one long side (330, 340) of the inner surface (320, 330, 340). 25
3. Wrapped bundle according to claim 1 or claim 2, wherein the at least one adherent section (37) is provided on the bottom side (320). 30
4. Wrapped bundle according to any one of the preceding claims, wherein the at least one adherent section has the form of one or more stripes (37). 35
5. Wrapped bundle according to claims 2 and 4, wherein the one or more stripes (37) on the at least one inner side surface (330, 340) are arranged in a substantially horizontal direction. 40
6. Wrapped bundle according to claims 2 and 4, wherein the one or more stripes (37) on the at least one inner side surface (330, 340) are arranged in a substantially vertical direction. 45
7. Wrapped bundle according to any one of the preceding claims, wherein the adherent section is produced by application of an adhesive to the respective inner surface (320, 330, 340). 50
8. Pack (1) comprising an outer pack (2) and a wrapped bundle of smoking articles, wherein the wrapped bundle is a wrapped bundle according to any one of the preceding claims. 55
9. Inner liner (3) for a wrapped bundle of smoking articles according to any one of the claims 1 to 7.

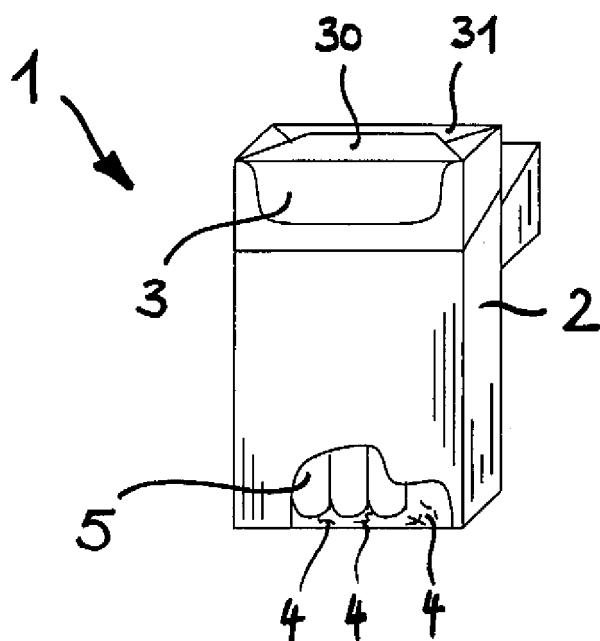


Fig. 1

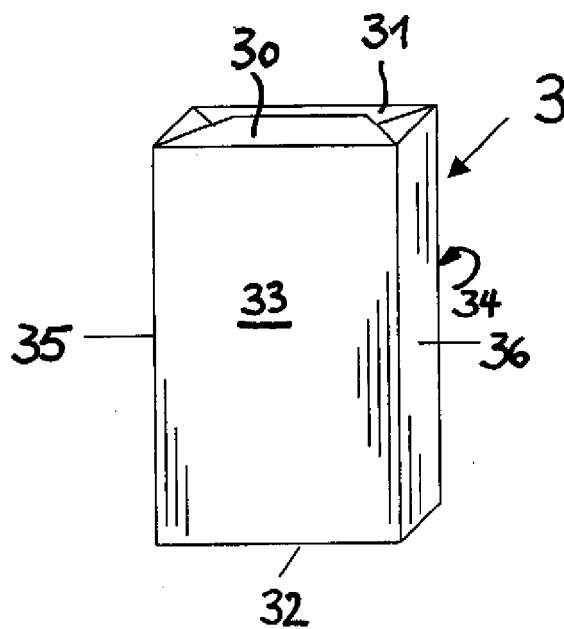


Fig. 2

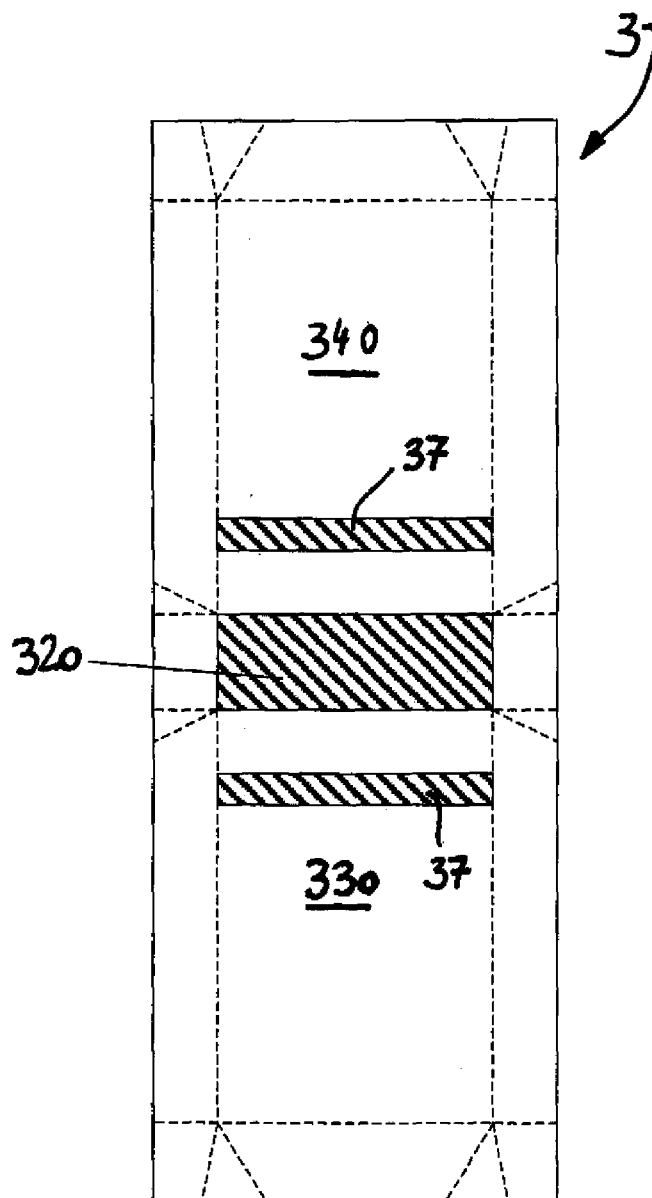


Fig. 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 11 0699

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	W0 03/070601 A (RATH JOSEF [AT]) 28 August 2003 (2003-08-28)	9	INV. B65D65/14 B65D85/10
A	* page 4, line 26 - page 5, line 25; figures 1,2,7 *	1-8	
X	EP 1 595 807 A (JAPAN TOBACCO INC [JP]) 16 November 2005 (2005-11-16)	9	
A	* paragraph [0042] - paragraph [0055]; figures 3,5 *	1-8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
Place of search		Date of completion of the search	Examiner
Munich		23 November 2007	Vesterholm, Mika
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			

2
EPO FORM 1503 03.82 (P04C01)

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

EP 07 11 0699

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.

23-11-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03070601	A	28-08-2003	AT 411246 B	25-11-2003
			AT 2602002 A	15-04-2003
			AU 2003206489 A1	09-09-2003
			CN 1635973 A	06-07-2005
			DE 50301096 D1	06-10-2005
			EP 1478583 A1	24-11-2004
			US 2005130822 A1	16-06-2005

EP 1595807	A	16-11-2005	CA 2513119 A1	05-08-2004
			CN 1738746 A	22-02-2006
			WO 2004065235 A1	05-08-2004
			KR 20050094038 A	26-09-2005
			RU 2295485 C2	20-03-2007
			TW 235040 B	01-07-2005
			UA 79675 C2	10-07-2007
US 2005236283 A1	27-10-2005			
