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(54) **BEVERAGE CAN WITH A PROTECTIVE COVER IN THE AREA OF THE TOP CONSISTING OF A THIN ALUMINIUM SHEET**

(57) A beverage can provided in the area of the top with a protective cover formed of a thin smooth die-cut aluminium sheet constituting the protective cover, which has a slip paint spread on at least one side thereof. This

slip paint is a two-component paint comprising a mixture of an overlacquer for protecting the print colours with a component having slipping properties.

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Description

[0001] The present invention concerns cylindrical beverage cans, and more specifically cans provided with opening means on one end to allow extemporary consumption of the liquid contained inside said can.

[0002] In order to maintain said opening clean and as far as possible sterile, these cans are provided with a die-cut lid consisting of a thin sheet of aluminium.

[0003] Said die-cut lids are fed to the magazine of the packaging machine in the form of piles of lids typically containing 500 to 1000 lids per pile.

[0004] These lids generally have an adhesive surface which allows closing of the end of the container by means of heat sealing or similar.

[0005] The packaging machines feed the lids at very high speeds to the ends of the cans to be protected. The problem encountered during extraction of these aluminium lids at high speed consists in the fact that a lid can drag with it by suction effect the following lid of the pile, with the risk of clogging the machine.

[0006] So far, in order to ensure an easy extraction of the individual lids from the pile, either a relatively low feeding speed was adopted, with a consequent loss of productivity, or, to aid rapid feeding of die-cut aluminium caps or discs from the capping machines, it was deemed not only necessary but essential to provide these caps with an embossing, as described for example in the European patent No. 1 135 304 B1 of the company KRONES AG or in the French Patent No. 2 731 986 of the company Pechiney Emballage Alimentaire, or with a rough covering on one side as described in the document PCT/AT 97/00091 of the company TEICH AG.

[0007] It has been surprisingly discovered that it is possible to obtain the same if not superior results, both in terms of feeding speed of the individual die-cut discs from a pile of discs, and in terms of the number of discs that can be stacked while maintaining the same pile height, due to elimination of the greater thickness determined by the embossing or by the roughening paint, with evident saving of time and working phases, by the application of a slip paint on said discs.

[0008] The slip paint produced by the company SIEGWERK, type SF 2114, has proved particularly suitable for the purpose, but in general also other slip paints can be used for the purpose.

[0009] From the United States patent application No. 2002/0062922 A1, it is known to provide the end of beverage cans featuring the opening for pouring the contents with a protective cover consisting of a thin disc of transparent plastic material that has undergone a chemical anti-static treatment, to prevent the discs of plastic material sticking together in the feeding machines.

[0010] According to said patent application, the cap adheres to the can by pressure only, exploiting the elasticity of the plastic.

[0011] In accordance with the present invention, said adhesion is obtained by plastic deformation of the alu-

minium sheet against the end edges of the can and/or by heat sealing, so that the adhesive effect on the can is sealing, thus providing an anti-tampering feature and ensuring greater product safety for the consumer.

[0012] Furthermore, given that both the sealing sheet and the can are made of aluminium, this favours recycling of these elements. Therefore the subject of this prior art document differs completely from the subject of the present patent application.

[0013] A typical protective cover according to the present invention will have the following layers, from the inside to the outside:

Heat sealing lacquer, 6.0 to 8.0 g/square metre
Aluminium sheet, thickness 38 µm
Primer 0.9-1.3 g/square metre
Colour printing (up to 8 colours)
Layer of slip paint

[0014] Due to elimination of the embossing on the aluminium sheet, the wording printed on the lids, which in the case of embossed aluminium lids was often difficult to read if not totally illegible, it will now be perfectly legible, even if in very small characters.

[0015] Due to elimination of the thickness of the embossing, the piles of lids can contain many more lids, while the height of the pile remains the same, and this constitutes an undoubted advantage as it reduces the insertion times of the new piles of lids into the packaging machines.

[0016] Naturally the present invention is not limited to the above description, but comprises all the variations and modifications falling within the scope of the present invention, as claimed below.

Claims

1. A beverage can provided in the area of the top of a protective cover formed from a die-cut aluminium sheet which completely covers the upper surface of the can, **characterized in that** the die-cut aluminium sheet constituting the protective cover has a slip paint spread on at least one side.
2. The beverage can according to claim 1, wherein said aluminium sheet is smooth.
3. The can according to claim 1, wherein said slip paint is a two-component paint applied by printing roller.
4. The can according to claim 2, wherein said slip paint comprises a mixture of an overlacquer for protecting the print colours with a component having slipping properties.



EUROPEAN SEARCH REPORT

Application Number
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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	US 2002/062922 A1 (JOHN CALI ST [US]) 30 May 2002 (2002-05-30) * paragraph [0070]; figures *	1-4	INV. B65D17/00 B65H3/46
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D B65H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 November 2017	Examiner Fournier, Jacques
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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- EP 1135304 B1 [0006]
- FR 2731986 [0006]
- AT 9700091 W [0006]
- US 20020062922 A1 [0009]