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(54) **Improved label for stretch wrapped stacks**

(57) The invention relates to labels which are adhesively attached to the outside of a stack of packages or articles which packages or articles are combined on a pallet typically by a stretch wrapped film. Such stretch wrapped stacks are highly stable but due to the stretch in the film used for holding the stack together and depending on the compressibility of the packages or articles, the stack will shrink by a certain amount during fur-

ther handling and shipment. Such stretch wrapped stacks are usually provided with labels, which have to allow the stretch wrapped stack to shrink and be deformed to a certain extent during handling and shipment. The present invention relates to labels, which are designed, to achieve a substantial improvement in stability after having been applied to a stretch wrapped stack of packages or articles.

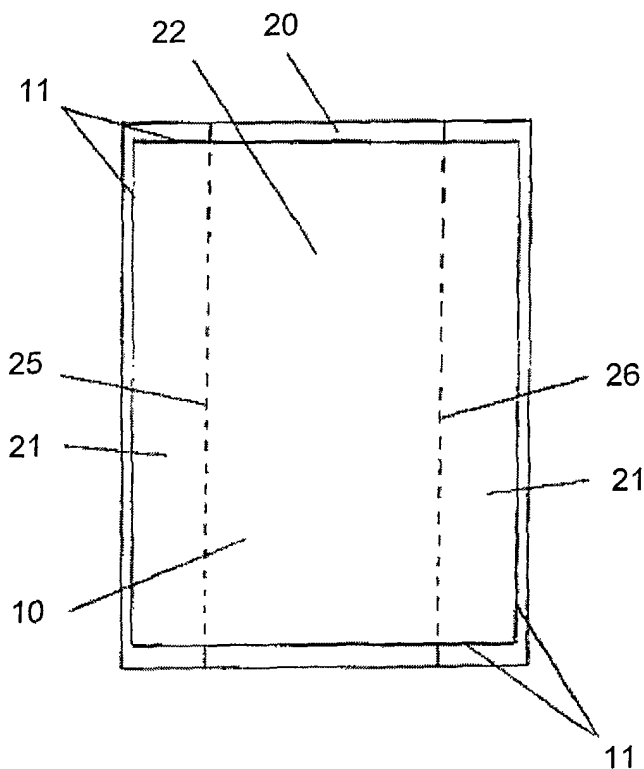


Fig. 1

Description

Field of the invention

[0001] The present invention relates to labels which are adhesively attached to the outside of a stack of packages or articles which packages or articles are combined on a pallet typically by a stretch wrapped film. Such stretch wrapped stacks are highly stable but due to the stretch in the film used for holding the stack together and depending on the compressibility of the packages or articles, the stack will shrink by a certain amount during further handing and shipment. Such stretch wrapped stacks are usually provided with labels, which have to allow the stretch wrapped stack to shrink and be deformed to a certain extent during handing and shipment. The present invention relates to labels, which are designed, to achieve a substantial improvement in stability after having been applied to a stretch wrapped stack of packages or articles.

Background all the invention

[0002] Especially for handing and shipment of such stacks it has become usual to provide them with large and easily identifiable labels, which are machine-readable. The most common label indications are bar codes. Of course these labels, if provided prior to shrinking of the stack, will have to allow shrinking or else they will crumple and wrinkle. This may cause the bar code to become unreadable by a machine reader and cause the further handing and shipment to become more difficult if not impossible, as the indications on the label can no longer be used.

[0003] Hence there exists a problem of providing labels for shrink wrapped stacks or otherwise combined articles which labels improve that indications on the labels remain readable throughout the handing and shipping and in particular which labels are indifferent to the potential shrinking of the stack or other deformation which may occur during handing and shipment.

Brief description of the Figures

[0004]

Fig. 1 shows an individual label in accordance with the present invention.

Fig. 2 shows a continuous band of a multitude of labels also in accordance with the present invention.

Summary over the invention

[0005] The present invention relates to a label for adhesive application to a stack of articles which stack is combined with an exterior substrate such as a stretch wrapped film. The label has a signal surface with indi-

cations, for example about the content of the stack, and on its opposed side an adhesive surface for the attachment to the exterior substrate of the stack of articles. The adhesive surface is provided with a protective release cover which is releasably attached to the adhesive on the adhesive surface and the release cover has two separating lines, e.g. cuts, which generate two outer regions of the release cover and one center region intermediate the two outer regions. Each separating line divides one region of the release cover from the adjacent region of the release cover. This allows the release cover in the outer regions to be removed without having to remove the release cover in the center region. In accordance with the present invention the combination of the label and the release cover has a higher resistance against wrinkling than the label material alone, due to the additional release cover material.

[0006] In an alternative and preferred embodiment, according to the present invention, a band of a multitude of labels as defined above is provided on a continuous release cover where only the outer regions are connected, preferably continuous, but the adjacent intermediate regions of the release cover of the adjacent labels are separated from each other. In preferred embodiments the labels are provided by polymeric material. The release cover is preferably provided by a continuous release cover, preferably a release coated paper strip. The release coating can for example be a silicon coating. Preferably the release cover is divided into regions by a micro cut process where the cutting is done after the label and the release cover are combined and the cutting only extends through the thickness of the release cover but does not cut into the label material.

[0007] Finally, in another alternative and preferred embodiment according to the present invention a stack of articles is claimed, which is combined by a stretch film for protection and stability of the stack. The stack has attached on the outside of the stretch film a label as defined above in which only the outer regions of the release cover are removed from the label to attach the label to the stretch film while maintaining the release cover in the central region on the label.

Detailed description of the embodiments of the present invention.

[0008] According to the present invention a label for adhesive application to a stack of articles is shown in Figure 1. A stack of articles can for example be a number of small packages of products, such as plastic bags, comprising smaller quantities of products than the whole stack. Such stacks of articles are typically created on a pallet such that they are easy to handle for shipment and transport. The products inside each article, for example a carton or a plastic bag, can be any kind of product that are subdivided into smaller quantities for further distribution, sale or handling. A good example in this respect are absorbent products, such as diapers or sani-

tary napkins or adult incontinence products which are packed together in a small number, being reasonable for those purchasing such products. The package in which these products are provided is typically a plastic bag. The bags are intended to provide esthetics and protection from the environment of the product. In the context of the present invention, such packages are referred to as articles and they are combined in a stack to form a larger shipment unit. The most frequently used way of combination of such stacks into a unitary transportable and easy-to-handle unit is to palletize them and to wrap the whole pallet including the packages with a stretch wrapp film. Such stacks of articles in accordance with the present invention are provided with the label according to the present invention in order to identify the content and possibly indicate other information about the content of such a stack.

[0009] In the context of such stacks which are combined by use of a stretch wrapped film or more generally an exterior substrate, it is necessary that the label attached on the outside of the substrate be readable during the whole transportation and handling process. In particular stretch wrap film has a tendency to continue to shrink during such handling because empty spaces and voids inside the stack are gradually shaken out and the strength of the film allows further compression of the unified stack of articles. For a label, this however requires that the label be able to either follow such deformation or prevent the deformation to that part of the label which carries the signals of the label.

[0010] The present invention addresses this problem by providing the label in accordance with Fig. 1 in which the label (10) is shown from its signaling surface. No signals are indicated on the label, but typically bar codes would be provided with the bars extending between line 25 and line 26 for reading e.g. by a laser scanner. The label has four sides (11) and is provided with an adhesive surface on the reverse side of the signaling surface. Preferably the adhesive extends across the whole label on the adhesive surface, but is not required to be co-extensive with the whole label. The adhesive has to be selected such that the attachment to the exterior substrate of the stack is safely provided and releases from the release cover (20), is facilitated without problems.

[0011] In Fig. 1 the release cover (20) is shown to extend beyond the side edges (11) of the label on all four sides. This, however, is not necessary if the adhesive surface on the label does not extend to the side edges (11) of the label (10). In a practical embodiment the side edges of the release cover (20) may be co-extensive with and aligned with the side edges (11) of the label.

[0012] The release cover (20) has two separating lines (25, 26), which in the preferred embodiment shown in Fig. 1, are provided by cutting the label along the lines (25, 26). These separating lines provide the release cover with two outer regions (21) and a center region (22). The release cover in each region can be removed from the label (10) individually without interfering with the re-

mainder of the release cover. This then allows to remove the release cover from the label in an outer region (21) and maintain the release cover in a center region (22) on the label. If such a label is attached to a stack, its central region substantially coextensive with the central region (22) of the release cover will be provided with additional strength withstanding the wrinkling, which is otherwise possible when attaching the label across its whole surface to an exterior substrate on a stack of articles.

[0013] The separating lines (25,26) do not need to divide the outer regions (22) from the center region (22) such that these regions are immediately adjacent. However for all practical purposes, the easiest construction is that wherein the separating lines (25,26) are provided by a micro cut that is run through the release cover while the label has already been joined by its adhesive to the release cover.

[0014] In another preferred embodiment the same label and release cover construction as shown in Fig. 1 is combined to a band of labels on a release cover (20). The continuous part of the release cover shown in Fig. 2 is that portion which continuously extends in the outer region (21) where the adjacent outer regions of one label and another label are not separated. In principle labels as shown in Fig. 1 could be made continuously by joining the adjacent outer regions (21) of the release cover (20) between two labels, for example with a tape tab. However, the preferred embodiment as shown in Fig. 2 simply uses a continuous band of release cover material cut by micro-cutting along the separating lines (25, 26) in a continuous fashion and also provided with a center region separating line (27) where adjacent center regions between labels are disconnected. Also this line (27) preferably is provided by the same cutting mechanism as the separating lines (25, 26). Again, the labels on such an endless band can be separated between labels and from the peripheral edges of the band as shown in Fig. 2. However, this is not necessary since the labels could in principle be provided immediately adjacent to each other so that front and end edges (11) of the adjacent labels (10) touch.

[0015] The labels according to the present invention are preferably made from a polymeric film. The film needs to allow easy provision of the signal indications. Usually such films are provided as a role that can be unwound and be combined with the release cover material. The release cover material is preferably provided by a release-coated paper again provided as a role. Such roles can be combined by providing the adhesive for the label onto the release coated release cover surface, joining the release cover surface with the polymeric film of the label in which step also the adhesive transfers from the release cover surface to the label material. The next step is cutting the label on one side of the laminate formed between the film, adhesive and release cover system in order to shape the labels. This cutting step can be such that no part of the polymeric film ma-

terial needs to be removed. When considering the design shown in Fig. 2 or Fig. 1 of the label the rim of the label material needs to be removed from such a system. This, on one hand, creates additional costs while it on the other hand creates clear definition of where the label is and allows easy access to remove the label from the release cover. As a second step in the process of creating labels in accordance with the present invention the release cover needs to be cut along the separating lines (25, 26) and a further cut along line (27) separating adjacent center regions of the release cover between labels. This can be provided by micro cutting extending only into the depth of a material so it does not create a cut in the adhesive surface of the label.

[0016] The labels created in such a system may also be provided in shapes and designs other than simple rectangular as shown in the figures. For example rounded edges have found wide spread use in the field of labels which the present invention does of course also support. In principle the present invention allows combination with all those aspects of modern labeling technology usual in the art without removing any of the characteristic features of the present invention.

[0017] The experienced practitioner will however readily recognize that the embodiments discussed herein above are those most preferred for use in a commercial environment since they do not generate any additional cost or material usage or create complexity in handling the labels, other than additional cuts along the lines (25, 26, 27) versus the label systems of the prior art. Thereby the benefit from creating the added wrinkle resistance in the center region of the label adjacent the release cover region (22) can be achieved without additional cost, complexity for labeling system or burden in material consumption on the disposal system of a manufacturer.

Claims

1. A label (10) for adhesive attachment to a stack of articles which stack is combined by an exterior substrate, said label (10) having four sides (11), a signal surface comprising indications and an adhesive surface for attachment to a stack,

said adhesive surface being provided with a protective release cover (20),

said release cover (20) being releasably attached to said adhesive on said adhesive surface of said label (10),

said label (10) being **characterized in that**

said release cover (20), comprises at least two separating lines (25, 26) each of said separating lines (25, 26) divides one region of said re-

lease cover (20) from an adjacent region of said release cover (20) thereby dividing the release cover into two outer regions (21) and one center region (22) which center region (22) separates the two outer regions (21) and further **characterized in that** the resistance to wrinkling of the combination of said label (10) and said release cover (20) is higher than the resistance to wrinkling of the label (10) alone and further **characterized in that** the release cover (20) in said outer regions (21) can be removed without removing the release cover (20) in said central region (22).

2. A band of a multitude of labels (10) as defined in claim 1 wherein the release cover (20) of adjacent labels (10) connects said adjacent labels (10) by being connected in said outer regions (21) and said release cover (20) is disconnected between adjacent labels (10) in said center region (22).
3. A band of labels (10) according to claim 2 where said release cover (20) is provided from a continuous release cover strip and said labels (10) are combined with said release cover (20) and said release cover (20) is cut into said center region (22) and said outer regions (21) by a micro-cut process after the labels (10) and the release cover (20) have been combined.
4. A stack of articles which stack is combined by a stretch wrap film for protection and stability, said stack having attached on the outside of said stretch wrap film a label (10) as defined in claim 1, said label (10) being attached in both said outer regions (21) of said release cover (20) by removal of said release cover (20) while said release cover (20) in said center region (22) remains on said label (10).

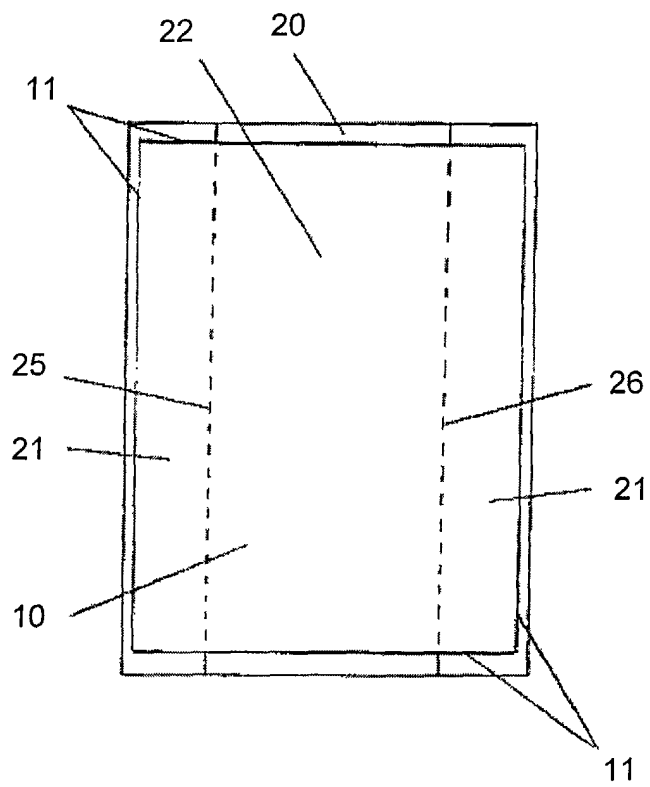


Fig. 1

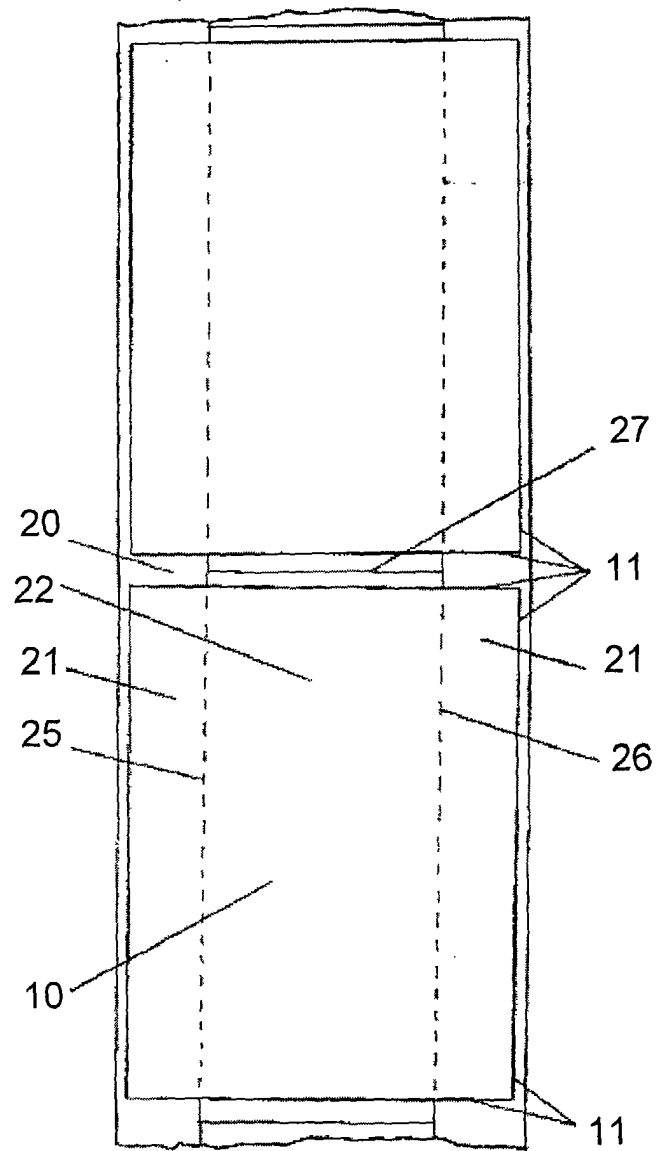


Fig. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 01 12 3429

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	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 09, 31 July 1998 (1998-07-31) & JP 10 111654 A (EE R C KK), 28 April 1998 (1998-04-28) * abstract *	1,4	G09F3/02 G09F3/10
X	US 4 995 641 A (LANDRY JOHN C ET AL) 26 February 1991 (1991-02-26) * column 3, line 6 - line 23 * * figures 1-4 *	1,4	
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 07, 29 September 2000 (2000-09-29) & JP 2000 122555 A (TOPPAN FORMS CO LTD), 28 April 2000 (2000-04-28) * abstract *	1-4	
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 19, 5 June 2001 (2001-06-05) & JP 2001 034171 A (GUNZE LTD), 9 February 2001 (2001-02-09) * abstract *	1-4	TECHNICAL FIELDS SEARCHED (Int.CI.7) G09F B42D
A	US 6 133 195 A (MURPHY SHARON M) 17 October 2000 (2000-10-17) * column 4, line 11 - line 54 * * figures 1,2 *	1-4	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 May 2002	Examiner Pantoja Conde, A
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			

EPO FORM 1503 03/82 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 01 12 3429

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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21-05-2002

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