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(54) Method for stacking discrete items like bags

(57) The present invention is related to a method for stacking discrete items comprising the following steps

- putting a first layer of items on a surface,

- putting sticks containing on both sides a double-sided adhesive on top of said items,
- adding a next layer of items.

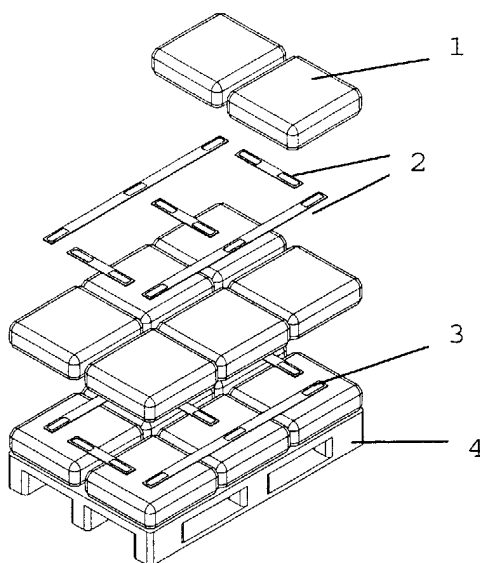


Fig. 1

EP 1 484 257 A1

Description

Field of the invention

[0001] The present invention is related to a method for stacking discrete items like bags of semi-liquid products.

State of the art

[0002] Solidifying semi-liquid products like margarines and shortening butter oils are usually packed in cardboard cases, in which a plastic bag is put. As a consequence of new standards imposed (HACCP) many companies want to avoid the carton dust produced in this way of packing.

[0003] As an alternative a bag somewhat different from the abovementioned plastic bag is used, which is brought into a certain shape before being filled with the product. Next the bag is sealed, removed from the filling device and almost immediately palletized. As the filled bags are not solidified yet, it is not straightforward to stack them.

[0004] Prior art document US 5,678,389 discloses a method and apparatus for stabilizing palletized stacks of discrete items, that also uses an adhesive layer between one or more layers of the discrete items. However it needs top, bottom and side members of relatively rigid material for stabilizing the stack. The items must further be stacked in alternating pattern. The tacky adhesive layer is applied directly on the items by spraying, brushing, rolling or any other suitable application method which is relatively quick, such that, when stacked, the discrete items adhere directly to adjacent discrete items.

Aims of the invention

[0005] The present invention aims to provide a method for stacking discrete items like bags of semi-liquid products that overcomes the problems of the prior art solution.

Summary of the invention

[0006] The invention relates to a method for stacking discrete items, comprising the following steps :

- putting a first layer of items on a surface,
- putting sticks containing on both sides a double-sided adhesive on top of said items,
- adding a next layer of items.

In a most preferred embodiment the second and the third step are repeated a number of times.

[0007] Advantageously the surface is a pallet. The adhesive is typically a double-sided tape.

[0008] Preferably, the sticks have a width adapted to the items to be stacked and a length that depends on

the size of the items to be stacked.

[0009] In a specific embodiment the sticks are used over the full length of said surface. Alternatively, the sticks can be used over a part of the length of the surface.

Short description of the drawings

[0010] Fig. 1 represents the stacking method of the invention.

[0011] Fig. 2 represents two embodiments of the adhesive strips.

[0012] Fig. 3 shows a pallet being stacked with 25 kg bags.

Detailed description of the invention

[0013] The invention discloses a method to stack items 1 in a secure and stable way. It is illustrated in Figure 1. The key element in the method is the use of so called 'sticks' 2. By 'sticks' is meant adhesive strips with a width adapted to the items to be stacked and a length that depends on the size of the items to be palletized. Said sticks can be produced in a variety of materials. They can easily be removed and are recyclable. The stick comprises on both sides a double-sided adhesive. The adhesive 3 can be applied over the full length or only partially. Typically, double sided tape is used as adhesive. Figure 2 shows two examples of the adhesive strips.

[0014] When stacking a layer of items on a pallet 4 the sticks are put on top of said layer according to a certain pattern. This depends for example on the number of items per layer. Next the following layer is put on top. As the sticks contain adhesive on both sides, the items are secured in place and they cannot be shifted or laterally moved. As a matter of fact the palletized stack almost forms a mono-block, as can also be noticed from Fig.3, where a pallet being stacked with 25 kg bags is shown. Note that in Figure 1 smaller, 10 kg items were used to illustrate the method of the invention.

[0015] The method for stacking discrete items comprises the following steps :

- putting a first layer of items 1 on a surface (e.g. pallet 4),
 - putting sticks 2 containing an adhesive 3 on both sides on top of said items,
 - adding a next layer of items.
- The steps can be repeated until a height of e.g. 7 or 8 layers is reached. However, depending on the product more layers can be stacked.

[0016] The advantage of the invention also lies in that by using the sticks one prevents one layer from sliding into another. In this way the pallet can be completely filled. The number of layers also depends on the product's liquidity and on the solidification speed.

Claims

1. A method for stacking discrete items comprising the following steps :
 - putting a first layer of items on a surface,
 - putting sticks containing on both sides a double-sided adhesive on top of said items,
 - adding a next layer of items.
2. The method of claim 1, wherein the second and the third step are repeated a number of times.
3. The method of claim 1, wherein said surface is a pallet.
4. The method of claim 1, wherein said adhesive is a double-sided tape.
5. The method of claim 1, **characterised in that** said sticks have a width adapted to the items to be stacked and a length that depends on the size of the items to be stacked.
6. The method of claim 1, wherein said sticks are used over the full length of said surface.
7. The method of claim 1, wherein said sticks are used over a part of the length of said surface.

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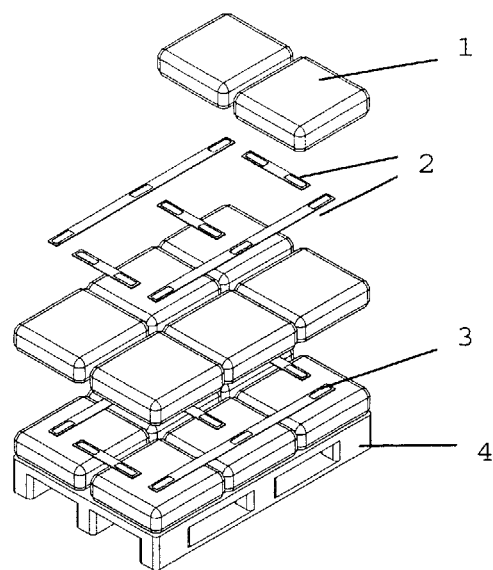


Fig. 1

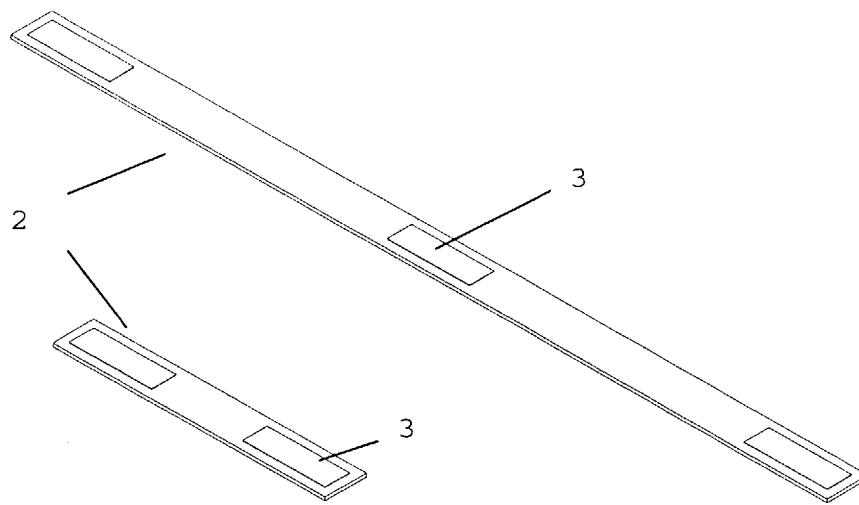


Fig. 2

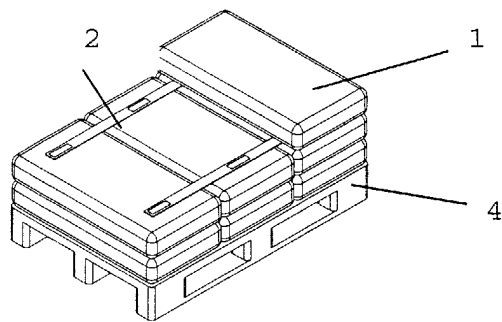


Fig. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 03 44 7139

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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 11 September 2003	Examiner Jervelund, N
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 03 44 7139

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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