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(54) **Easy-opening packaging for folded and stacked sheet-like articles**

(57) The invention relates to an easy-opening packaging for sheet-like articles (10) folded and arranged in a pile (12), which comprises a wrapping (13) surrounding the said pile of articles, the wrapping (13) defining a given perimeter (P) and being formed by a sheet cut to size and closed around the said pile of articles (11) along said

perimeter (P), and which comprises a tape (14) for favouring tearing and opening of the said wrapping (13), at least along a certain section of its perimeter (P), this tape being applied on the inner side of the wrapping (13), i.e. the side directed towards the pile of articles packaged inside it.

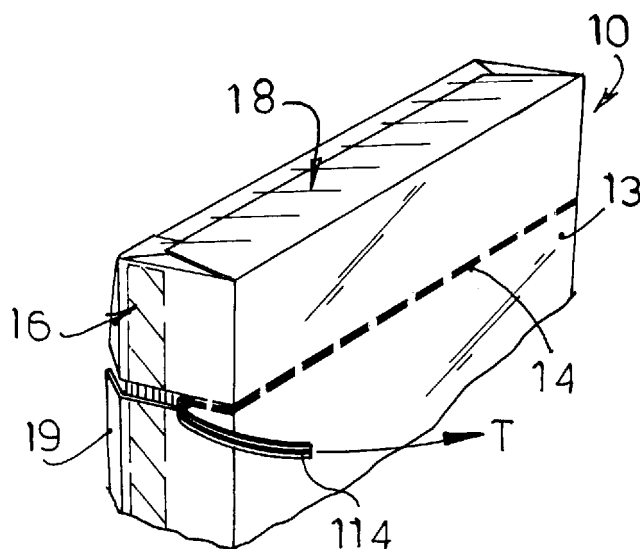


Fig.5

Description

[0001] The invention relates to an easy-opening packaging for folded and stacked sheet-like articles such as, for example, disposable napkins made of paper and/or any other material, or other disposable products, which are increasingly common because of their limited cost, the obvious advantages in terms of practicality and hygiene and the fact that they do not pollute the environment.

[0002] In the case of disposable napkins these are usually folded, arranged on top of each other in a certain number so as to form a pile and are surrounded by a packaging wrapping obtained from a sheet which is folded in tubular form around the pile and then fixed in this form and the free ends of which are then folded over, arranged on top of each other and fixed together. In order to package the said articles, generally a transparent plastic wrapping is used, for example in the form of a sheet made of polypropylene, polyester or cellulose-derived materials and the like.

[0003] An example of embodiment of a packaging according to the prior art is shown in a perspective view in Figure 1 where the known packaging is indicated by the number 1. In order to open the wrapping it is usual to provide at least one line L for tearing the said wrapping, for example oriented in the direction of the length of the sheet which forms the said wrapping and obtained for example by means of a linear succession of small holes formed on the sheet when the latter is still arranged flat and is about to be fed to the packaging station, so as to obtain easy opening of the packaging 1 along this line L.

[0004] The known solution according to Figure 1 has the following limitations and drawbacks:

Perforation of the materials at present most commonly used to form the said wrappings 1, such as polypropylene for example, is not performed properly because of the considerable toughness of the abovementioned material, even when the wrapping is formed with a very small thickness. Consequently, even the operation of opening the wrapping along the said tear line L may be difficult precisely because the material does not tear or break easily.

[0005] In order to overcome the said drawback, often the said tear line is formed with well-defined openings, something which, however, may give rise to the following additional drawbacks. During transportation or storage of the packaged products, some of these, even though packaged inside a further plastic packaging or inside cardboard boxes, may open spontaneously along the abovementioned tear line L, especially following mechanical and/or compressive actions which affect the part of the wrapping on which the said perforated tear line L is situated. Following opening of the wrapping, the articles contained inside the packaging are no longer protected from the point of view of hygiene or appearance,

so that they may be contaminated by polluting and infectious agents and may be altered so as to have folds, stains and/or other imperfections.

[0006] Moreover, even though the wrapping remains intact, dirt and contaminating agents may pass through the holes of the tear line L, altering in this case also the articles which are contained inside the packaging and no longer comply with hygiene standards or may have an unattractive appearance owing to the presence of dust, stains and other negative factors.

[0007] One object of the invention is therefore to provide an easy-opening packaging for sheet-like articles folded and arranged in a pile, which is of the improved type, is easy to manufacture, prevents contamination and alteration of the packaged articles and may be easily opened in a safe and precise manner.

[0008] These and other objects are achieved by means of an easy-opening packaging for sheet-like articles folded and arranged in a pile, as per the accompanying Claim 1 and following dependent claims, comprising a wrapping surrounding said articles, said wrapping defining a given perimeter and being formed by a sheet cut to size and closed around the articles along said perimeter, characterized in that it comprises a tape which is applied to the inside of the wrapping and is designed to favour tearing and opening of the said wrapping, at least along a certain section of its perimeter.

[0009] Further objects and advantages of invention will appear more clearly from the following detailed description provided with reference to the accompanying drawings in which, in addition to the already considered Figure 1:

- Figure 2 shows a perspective view of a stage involving preparation of the packaging according to the invention;
- Figure 3 shows a cross-sectional view of the packaging according to Figure 2 during completion of the said packaging;
- Figure 4 shows a perspective view of the packaging according to Figures 2 and 3, finished and ready for use;
- Figure 5 shows a perspective view of the packaging according to Figures 2 to 4 during opening;
- Figure 6 shows a perspective view of the packaging according to the invention, after the package has been opened.

[0010] In Figures 2 to 6, 10 denotes an easy-opening packaging for sheet-like articles 11 folded and arranged in a pile 12, such as, for example, disposable napkins made of paper and/or other material.

[0011] According to packaging methods which do not form the subject of the present invention, the sheet-like

articles 11 are folded and arranged on top of each other so as to form the abovementioned pile 12 of articles 11 which consist of any predetermined number also different from that shown by way of example in the drawings. The pile 12 is then positioned on a wrapping 13 in the form of a sheet, for example obtained from a reel (not shown) of material suitable for forming the wrapping such as, for example, polypropylene or polyethylene and/or other suitable materials. The wrapping 13 may be transparent, semi-transparent or translucent so as to facilitate identification of the sheet-like articles 11 packaged inside it.

[0012] In the example of embodiment shown in Figure 2 a tape 14 made of flexible and suitably resistant material is applied onto the wrapping sheet 13 in the longitudinal direction of unwinding from the reel. For example, the tape 14 may be made of polyester, i.e. polyethylene terephthalate, more commonly known as PET. The tape 14 may also be coloured so as to favour identification and gripping thereof by the user.

[0013] According to another version of the invention (not shown) the tape 14 may be applied transversely with respect to the direction of unwinding of the wrapping sheet 13 from the reel.

[0014] During manufacture of the packaging, the tape 14 may be unwound from a reel (not shown) and fixed continuously onto the wrapping 13, for example by means of heat-sealing or using a cold adhesive already applied beforehand to the tape 14 which therefore has self-adhesive properties or by means of a thin double-sided adhesive strip inserted between the tape 14 and the wrapping sheet 13.

[0015] In order to favour tearing of the wrapping 13 during opening, the tape 14 is applied onto the surface of the wrapping sheet 13 which is situated on the inside when the said sheet 13 is wrapped and closed around the pile 12 of articles 11, so that, when the tape 14 is pulled, the opening force will act on the inside of the wrapping 13, ensuring effective and guided tearing of the said wrapping.

[0016] Owing to the longitudinal arrangement of the tape 14 in the direction of unwinding of the wrapping 13, when the wrapping 13 is cut from the reel in order to obtain a sheet of suitable dimensions, the tape 14 is also cut together with the sheet.

[0017] The wrapping sheet 13, together with the tape 14, is then wrapped in tubular form along a given perimeter P around the pile 12 of sheet-like articles 11 and the last outer edge portion of the wrapping in tubular form is then fixed onto the underlying wrapping, for example by means of a heat-sealing operation performed by a welder 15 (Figure 3) which preferably acts on the surface of the pile 12 which is formed by the perimetral sides of the sheet-like products 11 and which, for this reason, is less prone to deformation by the pressure exerted by the said welder 15.

[0018] Figure 4 shows a packaging 10 containing a complete and finished pile of sheet-like articles 11, on which two fixing zones 16 and 17 are visible. The first

fixing zone 16 is that where initial closure in tubular form of the packaging wrapping 13 is performed by the said welder 15, while the second fixing zone 17 is that where projecting free edge portions of the said tubular wrapping are folded onto each other. This second fixing zone 17 is formed with welders of the static or dynamic type, not shown as they are also of the known type.

[0019] Figure 5 shows a third fixing zone 18 which is situated opposite the aforementioned fixing zone 17 and which is also formed on the other projecting free edge portions of the tubular wrapping which are then folded onto each other.

[0020] From Figures 2 to 5 it can be seen that the wrapping 13 has an end edge portion 19 which projects from the said sealing zone 16 and which is preferably arranged so as to project from a corner zone of the wrapping 13 so that it may be easily identified and gripped by the user along the section where the end 114 of the tape 14 is situated, the said edge portion 19 having along the sides of the latter incisions or cuts 20 with the aim of favouring initial tearing and therefore ensuring always easy and precise opening of the said wrapping 13. The incisions 20 not adversely affect the sealed closure and therefore the hygienic condition of the packaging in that they involve only the section of the end edge portion 19 which is situated outside of the said seal 16.

[0021] From Figure 5 it can be seen that, during opening of the wrapping 13, the end section 114 of the tape 14 is folded on top of the following tape and is pulled longitudinally in the direction T so as to cause the gradual removal of this tape and consequent tearing of the wrapping 13 over part or all of the perimeter P until the desired or complete opening of the packaging 10 is obtained, as shown, for example, in Figure 6. From this same figure it can be seen how opening of the packaging 10 is performed in a perfect and precise manner and how most of the said packaging remains intact so that it is also able to perform the function of a container/dispenser for the articles 11 which may be gradually used without having to find a new container for storing them and keeping them in an orderly pile. Owing to precise opening of the wrapping, performed by the tape 14, the packaging 10 does not have to be destroyed at the time of opening.

[0022] The easy-opening tape 14 may be advantageously arranged in the vicinity of one end of the packaging 10 so that, even after opening, the said packaging is able to contain in an optimum manner the articles 11 packaged inside it. It is understood, however, that the tape 14 may also be arranged in any position on the packaging 10, also because the operating function of this tape when opening the packaging is not influenced or favoured by vicinity thereto of one end of the said packaging 10.

[0023] In the embodiment shown in figures, even though the tape 14 extends along the entire perimeter P of the packaging 10, opening of the said packaging may be performed only over a part of its perimeter P so as to form in the said packaging a pocket which allows removal

of the products 11 but which may then be hygienically closed. In order to obtain such a partial opening of the packaging 10, the easy-opening tape 14 may be provided differently on only a part of the perimeter P, for example only on a portion approximately equal to half of the said perimeter of the packaging. In this way, the articles 11 are extracted from the side where the opening is formed by pulling the tape 14 and the packaging may be partially closed again, ensuring also greater protection for the said products. In this last version of the invention, the tape 14 is applied to the wrapping 13 only over a certain section of the said wrapping in a discontinuous manner. Also in this version, the tape 14 may be applied longitudinally in a similar manner to that shown in Figure 2, or transversely, according to a version of the invention not shown in the figures, but also falling within the scope of the invention.

Claims

1. Easy-opening packaging (10) for sheet-like articles (11) folded and arranged in a pile (12), comprising a wrapping (13) surrounding said pile (12) of articles (11), said wrapping (13) defining a given perimeter (P) and being formed by a sheet cut to size and closed around the pile articles along the said perimeter (P), and being provided with at least one tear line for easy opening, **characterized in that** this tear line is obtained by fixing a flexible and suitably resistant tape (14) to the wrapping so that, by removing this tape with a pulling force exerted on its free end section, preferably oriented so as to be arranged on top of the following tape section, it is possible to tear and open the said wrapping (13) in a precise manner, at least along a certain section of its perimeter (P).
2. Packaging according to Claim 1, in which said tape (14) is applied onto the inner surface of said wrapping (13), i.e. the surface directed towards the pile (12) of articles (11) packaged inside the said wrapping.
3. Packaging according to one or more of the preceding claims in which said sheet-like articles (11) are disposable articles, for example napkins made of paper and/or other material or similar products.
4. Packaging according to any one of the preceding claims, in which said tape (14) is applied onto the wrapping (13) in the same direction as the longitudinal direction of unwinding of the reel from where the sheet forming the said wrapping (13) is obtained.
5. Packaging according to Claim 1, in which said tape (14) is applied onto the wrapping (13) in a transverse direction with respect to the direction of unwinding of the reel from where the sheet forming the wrapping (13) is obtained.
6. Packaging according to Claim 1, in which said tape (14) is applied onto the sheet forming the wrapping (13) in a continuous manner so as to obtain partial or also complete opening of the said wrapping along the entire perimeter (P).
7. Packaging according to Claim 1, in which said tape (14) is applied onto the sheet forming the wrapping (13) in a partial and discontinuous manner, so as to obtain partial opening along a section of the perimeter (P) of the said wrapping.
8. Packaging according to Claim 1, in which said tape (14) is applied onto the wrapping (13) by means of heat-sealing.
9. Packaging according to Claim 1, in which said tape (14) is applied onto the wrapping (13) by means of cold gluing.
10. Packaging according to Claim 1, in which it said tape (14) is applied onto the wrapping (13) by means of a thin double-sided adhesive strip.
11. Packaging according to Claim 1, in which said tape (14) is made of polyester or PET.
12. Packaging according to Claim 1, in which said wrapping (13) is transparent, semi-transparent or translucent and said tape (14) is coloured so as to favour identification and gripping thereof by the consumer.
13. Packaging according to any one of the preceding claims, in which said tape (14) has one end (114) which is glued to a respective free end zone (19) of the wrapping (13), provided with lateral through-incisions or cuts (20), these cuts favouring initial tearing and therefore easy and always precise opening of the wrapping (13).
14. Packaging according to Claim 13, in which said through-incisions or cuts (20) are situated on a free edge portion (19) of the wrapping (13) situated after the seal (16) which closes annularly the said wrapping around the pile of products in such a way as to maintain the sealed closure of the packaging (10) formed by this wrapping.
15. Packaging according to Claim 14, in which the said free edge portion (19) is situated so as to project from a corner zone of the wrapping (13) so that it may be easily identified and gripped by the user along the part where the end (114) of the tearing tape (14) is situated and which has the said lateral incisions (20).

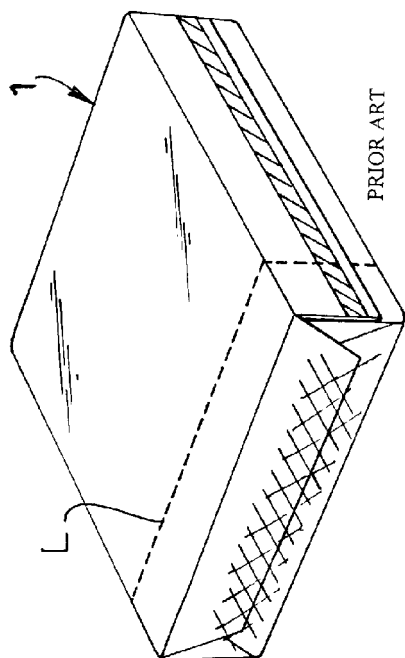


Fig.1

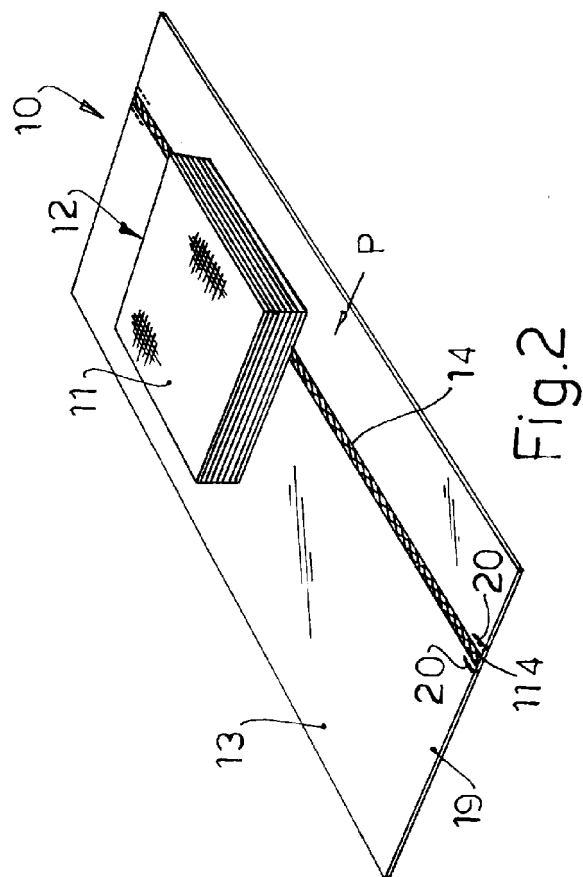


Fig.2

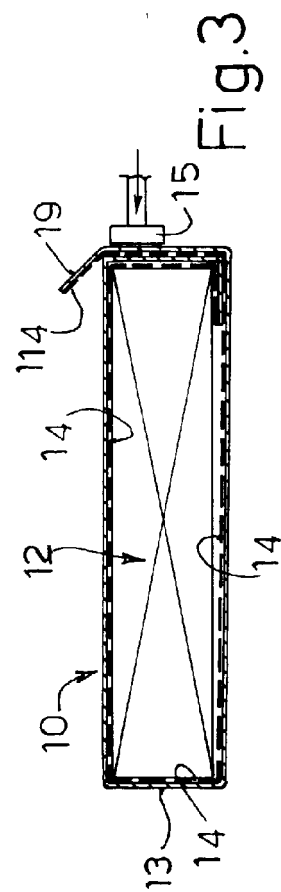
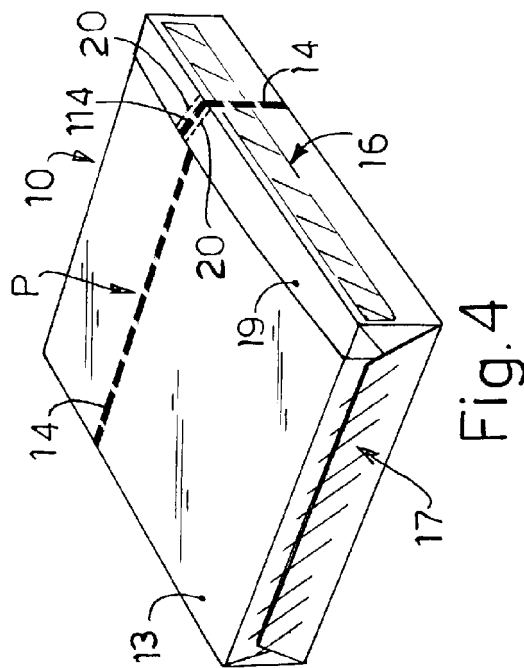
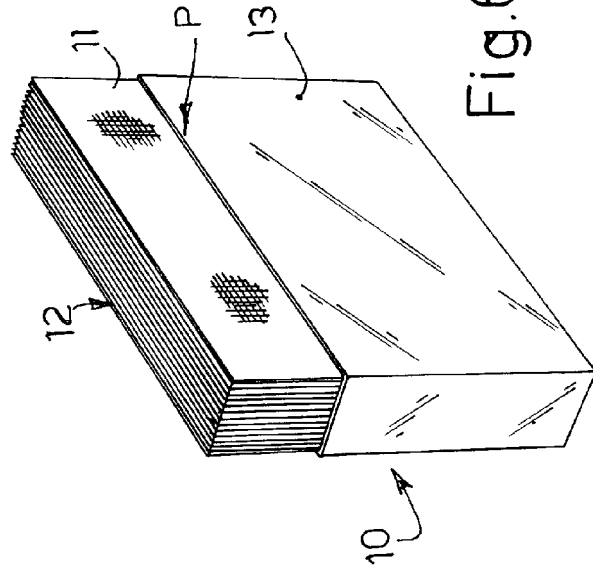
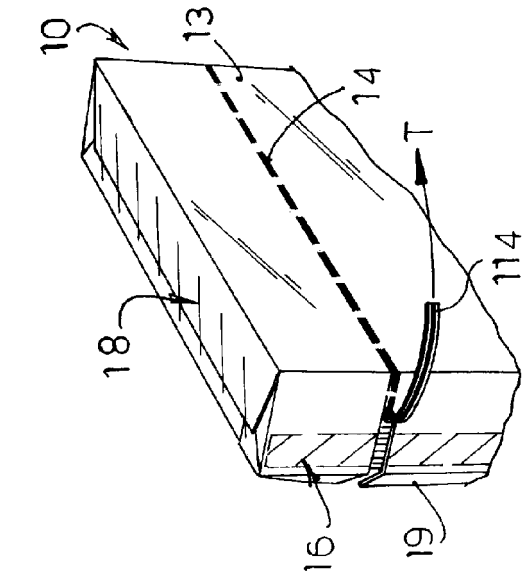


Fig.3





EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 November 2008	Examiner Leijten, René
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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EUROPEAN SEARCH REPORT

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<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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
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