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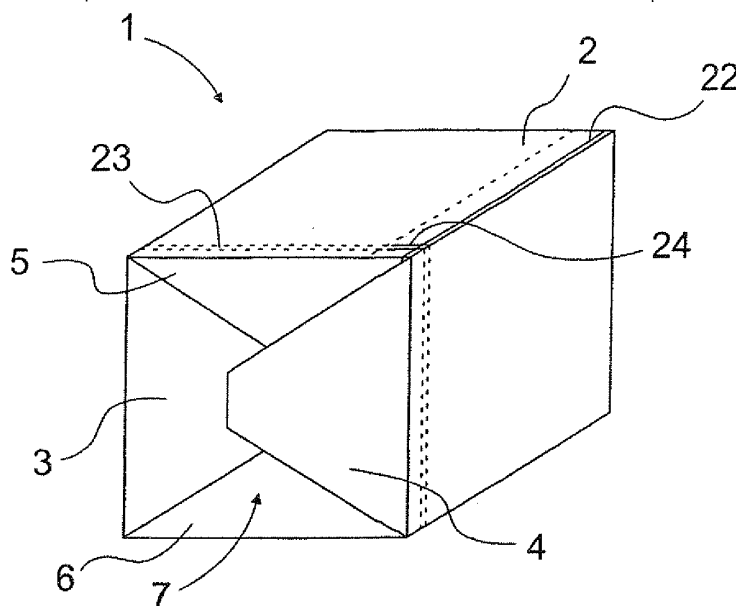
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(54) **A method for manufacturing a group package**

(57) The object of the invention is a method for manufacturing a group package (1). The group package (1) is composed of an essentially uniform protective wrap, which is wrapped around the office papers to be pack-

aged, and at whose ends of the group package are formed folds (3,4,5,6) from the edges of the protective wrap such that at least one outer fold (3,4) is attached to at least one inner fold (5,6).



**Fig. 1**

## Description

**[0001]** The invention relates to a group package for sheet material such as office paper intended for use in printing or copying according to the preamble of claim 1 and a method for manufacturing a group package according to the preamble of claim 11.

**[0002]** Office paper delivered in sheets, such as A4-sized copier and printer paper, is according to known art generally packaged in corrugated cardboard boxes, wherein each box contains five packages of paper, each separately wrapped in protective paper. In each one of these paper packages, called rice, is 500 A4-sheets. The corrugated cardboard provides the office paper good protection during transportation, but disadvantages are the high price of the box and the space taken up by the empty box prior to its being destroyed or returned for recycling. Additionally, the lid of the box is bound to the box by a thin plastic ribbon, which also functions in practise as a carrying handle. The disadvantages of using the plastic ribbon are its disposal as well as that the thin plastic ribbon is extremely unpleasant when carrying the box, because the five rice of paper inside the box weigh a great deal.

**[0003]** The object of this invention is to obviate the above-mentioned disadvantages and to achieve a group package for office paper that is as inexpensive as possible and nonetheless highly protective of paper sheets. Additionally, the object is to achieve an easily portable group package, which when carried will distribute its weight equally, for example, to both hands. Additionally, the object of the invention is to achieve an inexpensive, fast and reliable method for manufacturing a group package for office paper. A group package according to the invention is characterized in what is presented in the characterising part of claim 1. Correspondingly, a method according to the invention is characterized in what is presented in the characterising part of claim 11. Other embodiments of the invention are characterized in what is presented in the other claims.

**[0004]** The advantage of a solution according to the invention is that a group package according to the invention is very inexpensive and quick to manufacture. Additionally, an advantage is that the packaging material of the group package is durable in its strength against bursting and ripping, so the group package protects well the paper packages, each separately wrapped in protective paper, contained in the group package. An advantage is also that the invention makes it easily possible to also carry the group package with two hands, wherein the load is evenly distributed to both hands and due to the suitably formed carrying handles or their equivalent the weight of the group package does not strain the hands, as did the previously used thin plastic ribbon. An advantage is also that when packaging material in rollstock is used, very few waste bits of packaging material are created. An advantage is also that when protective wraps coated with plastic film or protective wraps entirely of

plastic are used, the group package withstands moisture well. Additionally, protective wraps composed entirely of plastic can be transparent. An advantage is also that when protective wraps coated with a suitable layer are used, the seams can easily be attached using heat sealing or ultrasound. An advantage is also that the protective wrap is provided with an opening ribbon, which makes opening the protective wrap easier. Additionally, an advantage of a group package provided with an opening ribbon is that an empty package, which has been ripped open, can be used in the manner of a bag, as a neat package for other collapsible packaging or other material to be thrown away. Similarly, an advantage is that when the opening ribbon is located a suitable distance from the head of the group package, after the group package is opened the heads of the individual packages within the group package are highly visible, wherein the individual packages are easy to remove from the group package.

**[0005]** In the following the invention is described in greater detail with the aid of an embodiment example with reference to the accompanying drawings, in which

Fig. 1 shows a group package according to the invention, viewed diagonally from the side,

Fig. 2 shows a group package according to Fig. 1, viewed diagonally from the side prior to gluing of the end folds,

Fig. 3 shows one embodiment of the invention, viewed diagonally from the side,

Fig. 4 shows a carrying manner of group packages according to Fig. 1 and 3, viewed diagonally from the side,

Fig. 5 shows a second embodiment of the invention, viewed diagonally from the side,

Fig. 6 shows a third embodiment of the invention, viewed diagonally from the side,

Fig. 7 shows yet another embodiment of the invention, viewed diagonally from the side,

Fig. 8 shows yet another different embodiment of the invention, viewed diagonally from the side,

Fig. 9 shows a simplified and magnified view of one typical layered structure of the protective wrap according to the invention,

Fig. 10 shows a simplified and magnified view of a second layered structure of the protective wrap according to the invention,

Fig. 11 shows a simplified and magnified view of a

third layered structure of the protective wrap according to the invention.

**[0006]** In Fig. 1 is shown a simple group package 1 that embodies the invention. Sheet-type office papers, for example A4-sized papers packed in separate protective papers, and packages in number, for example, the size of rice are packaged in a group package 1 made of strong protective wrap. The group package is manufactured from the protective wrap 2 existing as rollstock, wherein the protective wrap 2 is pulled directly from the roll in conjunction with packaging and cut to the correct measurement, after which the protective wrap 2 is wound around, for example, five individual packages laying flat on their sides stacked one on top of the other such that the upper- and lower portions of the group package as well as both long sides are as a uniform continuous protective wrap layer, in which the rearward end 22 of the protective wrap 2 overlaps the forward end of the protective wrap for a suitable distance and is glued shut on its inner surface to the outer surface of the forward end. The forward end hidden inside the protective wrap is presented here and in other corresponding figures as a dashed line. The rearward end 22 of the protective wrap is suitably located at the top of the group package essentially close to the other long corner. At each end of the group package are at least the outer folds 3 and 4 and the inner folds 5 and 6, wherein the folds are located at least partially on top of one another. The folds at the ends form a strengthened protection for the heads of the office paper within the package, in which even a small accident can easily cause many sheets of paper to be ruined.

**[0007]** In the group package according to Fig. 1, the outer folds 3 and 4 at the ends of the package are glued together, for example, with hot-setting adhesive and at least to the outer surface of the upper inner fold 5 such that at least the lower edges of the outer folds 3 and 4 are free from the outer surface of the inner folds 5 and 6. In this case, between the outer folds 3 and 4 and the inner folds 5 and 6 remains a lifting space 7, which can be expanded outward from the end of the group package 1 such that the fingers of a person lifting the package fit into the lifting space 7 and that the lower edges of the outer folds 3 and 4 function as a carrying support.

**[0008]** In Fig. 1 can additionally be seen, drawn with a dashed line, an opening ribbon 23, which is glued to the inner surface of the protective wrap 2 prior to cutting of the protective wrap. In this case, the opening ribbon 23 is essentially as long as or suitably longer than the protective wrap 2. The opening ribbon 23 is located a suitable horizontal distance from the end of the group package 1. A suitable distance is e.g. 1 to 2 cm, wherein the head of rice within the group package 1 remains suitably visible after opening of the protective wrap 2. This makes it easier to remove the rice from the group package. Additionally, at the head of the opening ribbon 23, at the site of the rearward end 22 of the protective wrap 2, the edge of the protective wrap 2 is cut open such that on either

side of the opening ribbon 23 is a suitably long cut 24 in the longitudinal direction of the opening ribbon 23. In this case, the head of the opening ribbon 23 is easy to take hold of and the protective wrap 2 can be ripped open by rotating the entire group package 1. The ribbon material of the opening ribbon 23 may vary, but what is common to the materials is that the material must be adequately strong and essentially inelastic, or it must stretch only very slightly. In Fig. 1 the opening ribbon 23 hidden on the inside of the protective wrap 2 is shown with a dashed line. By contrast, in the other figures the opening ribbon is shown only by the head of the ribbon provided with cuts 24.

**[0009]** In Fig. 2 is shown one manner for manufacturing a group package 1 according to the invention that implements a method according to the invention. As the beginning of the work cycle can be considered the situation, where the products to be packaged together in a group package are situated ready for the making of the group package, i.e. for example the sheet paper packages are set one on top of the other in a stack five rice high. According to the invention, the width of protective wrap 2 to be used for making a group package is fitted to be a desired amount larger than the length of the sheet paper packages. The protective wrap 2 is taken directly from the wrapping roll and pulled in a lateral direction centrally under the sheet paper packages and initial wrapping is performed by wrapping the protective wrap 2 around the sheet paper packages such that on at least one of the long sides of the group package 1 the rearward end of the protective wrap 2 used in the group package is overlapping with the forward end of the protective wrap 2. The rearward end of the protective wrap 2 is located preferably on the edge between the two long sides, for example on the edge between the upper side and the front side, as for example is shown in Fig. 2. The front side in the figures is, for example, the right side of the group package.

**[0010]** When the protective wrap 2 taken from the roll as rollstock is cut to its correct measurement and wrapped around the sheet paper packages to be packaged, the end folds are formed by pressing the more upwardly located inner fold 5 downward against the end of the group package 1. In the same manner the downwardly located inner fold 6 is pressed upward against the end of the group package 1. When pressing the inner folds 5 and 6 against the end of the group package at the same time the outer folds 3 and 4 are formed by folding the portions of the protective wrap, locating on the sides, on the vertical edges of the group package and exceeding the length of the sheet paper packages, on each side edge doubly on top of each other essentially as two folds in the shape of a triangle. In order that the outer folds 3 and 4 will in the final position reach to overlap one another, the portion of the protective wrap exceeding the length of the sheet paper packages must be on each side of the group package larger than one half of the width of the sheet paper packages. By length is in this

connection meant, for example, the vertical direction of an A4-sheet and by width is meant the lateral direction of an A4-sheet.

**[0011]** After making the folds the outer folds 3 and 4 are glued at each end of the group package to at least one of the inner folds 5, 6 and if necessary also to one another.

**[0012]** In packages without carrying handles, at each end of the group package 1 from the outer folds 3 and 4 with the aid of adhesive a lifting space 7 is formed, which at the same time enables lifting and carrying of the group package 1 and whose lower edge functions as a support surface, i.e. carrying support for lifting and carrying.

**[0013]** In the solution shown in Fig. 2, near the lower edge of the inner fold 5, located above, on the outer surface of the inner fold 5 is spread at each end of the group package an essentially horizontal adhesive seam functioning as an attaching seam 8 essentially along the entire length of the inner fold 5. Correspondingly, on the inner surface of the uppermost remaining outer fold 4 is spread an essentially vertical adhesive seam functioning as an attaching seam 9 near the outer end of fold 4. After the spreading of the adhesive first the innermost remaining outer fold 3 is pressed against the inner folds 5 and 6, after which the uppermost remaining outer fold 4 is pressed against both the outer fold 3 and the inner folds 5 and 6. In this manner a group package 1 according to Fig. 1 is formed, in which at the lower edge of the outer folds 3 and 4 remains a lifting space 7 for lifting and carrying the group package. Due to this manner of gluing there also remains at the upper edge of the outer folds 3 and 4 an essentially corresponding lifting space, such that the group package can also be lifted when turned in an upside down position.

**[0014]** In Fig. 3 is shown another type of gluing manner of end folds that is contained in the idea according to the invention. In this solution, the innermost remaining outer fold 3 is glued after making the fold by its inner surface to the outer surface of the upper inner fold 5 by the adhesive seam functioning as an attaching seam 10 that is essentially near the upper edge of the fold 3 and follows the direction of the upper edge. Correspondingly, the uppermost outer fold 4, which is folded on top of the outer fold 3, is glued after making the fold by its inner surface to the outer surface of both the upper inner fold 5 and the outer fold 3 by the adhesive seam functioning as an attaching seam 11 and by the adhesive seam extending after the adhesive seam and functioning as an attaching seam 12. This manner of gluing enables a lifting space 7 only at the lower edge of the outer folds 3 and 4, so that the group package must always be right side up before the package is lifted.

**[0015]** In Fig. 4 is shown a manner of lifting and carrying a group package 1 manufactured in the manner described above from the lower edge of the outer folds 3 and 4, where the lifting space 7 contained therein makes it possible for fingers to be inserted between the outer folds 3, 4 and the inner folds 5, 6. Due to attaching seams

8 and 9 or 10 to 12 the protective wrap 2 of the group package withstands the lifting and carrying of the package.

**[0016]** In Figs. 5 to 8 are shown different carrying handle solutions for a group package 1 according to the invention. Although the group package can be lifted with two hands from its ends in the manner described above, sometimes it is easier to handle the package with the aid of carrying handles intended for this purpose. Likewise sometimes there arises a situation, where it would be necessary to be able to handle the package with one hand.

**[0017]** In Fig. 5 is shown a group package 1 according to the invention having a separate carrying handle 13 at each end of the package. The ribbon-like, suitably reinforced carrying handle 13 is glued at each end of the package between both the outer folds 3 and 4 and inner folds 5 and 6.

**[0018]** Correspondingly, in Fig. 6 is shown a group package 1 according to the invention having a separate carrying handle 14 on the upper surface of the package. The carrying handle 14 is made, for example, of fabric-reinforced paper laminate and glued at its ends to each end of the group package 1, for example, such that the adhesive seam is located between the inner surface of the carrying handle and the outer surface of all end folds 3-6. Additionally, the carrying handle 14 can be glued for a short distance on the upper surface of the group package 1 at the end edges of the group package. In this manner a durable and easy-to-use carrying handle solution is achieved.

**[0019]** Figure 7 shows a carrying handle solution comparable to Fig. 6, but in this embodiment the ribbon-like carrying handle 15 is located crosswise on the top of the group package 1 and is glued at its ends to the sides of the group package. In order to achieve added durability, the carrying handle 15 can also be glued to the protective wrap on the upper surface of the package for a portion of the distance starting from the upper edges of the package.

**[0020]** Carrying handles 14, 15 according to Figs. 6 and 7 can also be made to go around the group package 1 and can be glued, for example, from the bottom to the group package such that the carrying handle never disappears. In this case, the carrying handle also carries load, due to which the protective wrap 2 can be thinner than in those solutions, where the carrying handle is glued to the protective wrap or where the package is lifted directly from the fold of the protective wrap.

**[0021]** In Fig. 8 is shown a carrying handle solution embodying the invention, in which a ribbon-like carrying handle 16 is located crosswise on top of the group package 1 and is glued at its ends to the upper surface of the group package. Attachment is reinforced by a reinforcement patch 17, which has an opening at its centre for the carrying handle 16 to go through. The reinforcement patch 17 is glued to the upper surface of the group package such that it also covers the ends of the carrying han-

dle 16.

**[0022]** A protective wrap 2 according to the invention must meet certain requirements regarding at least protectiveness, bursting resistance, tearing resistance, adhesiveness of the adhesive and also printability. Acceptable for the protective wrap 2 are, for example, laminated strong kraftliner-type paper, such as white top liner, white top coated, bleached kraft or other similar types of paper quality. Ordinary or bleached kraft paper is also acceptable for the protective wrap. The protective wrap can also be one of the above-mentioned paper qualities coated on at least one side with plastic film. Plastic films suitable for this purpose are, for example, polyethylene films, i.e. PE-films, and polypropylene films, i.e. PP-films.

**[0023]** In Fig. 9 is shown the layered structure of one protective wrap 2 according to the invention simplified such that only the essential layers are visible. Additionally, the layer thicknesses are not drawn to scale. The base of the protective wrap 2 is formed by the paper layer 19, which is, for example, one of the above-mentioned paper qualities. Depending on paper quality the paper layer 19 may be composed of one or more layers. For the sake of clarity only one layer has been drawn in the figure. On the surface of the paper layer 19 is a printing ink layer 18, which at least partially covers the surface of the paper layer 19. Correspondingly, on the other side of the surface of the paper layer 19 is a plastic layer 20, such as a PE-film, that protects and strengthens the protective wrap 2 as well as prevents moisture from passing through the protective wrap 2.

**[0024]** In Fig. 10 is shown a structure in layers similar to that in Fig. 9, where the plastic layer 20 is however located between the printing ink layer 18 and the paper layer 19. In this case then, printing is done to the plastic layer 20, which must be of a quality suitable for printing. The plastic layer 20 shown in Figs. 9 and 10 improves the moisture resistance of the protective wrap 2 when compared to a protective wrap of only paper.

**[0025]** The ability of the sheet paper packages inside the group package 1 to withstand knocks and blows coming from the outside can be adjusted by layering of the protective wrap 2 and in particular by its thickness. The thickness of the protective wrap 2 should at least be such that the basis weight of the protective wrap is in the range of 60 to 200 g/m<sup>2</sup>. Depending on the material used one suitable thickness range is a basis weight of 80 to 160g/m<sup>2</sup>. The thickness can also suitably be such that the basis weight is in the range of 120 to 150 g/m<sup>2</sup>.

**[0026]** In a paper-base protective wrap 2 coated on at least one side with plastic film the thickness of the plastic layer 20 is in this case, for example, such that its basis weight is in the range of 5 to 30 g/m<sup>2</sup>, suitably in the range of 7-20 g/m<sup>2</sup>.

**[0027]** In order that the protective wrap 2 would withstand handling of group packages adequately well, the bursting resistance of the material of the protective wrap must be adequate and its tearing resistance should be at least 1200 mN, preferably even greater. Correspond-

ingly, adhesiveness of the adhesive should be at least 15 Dennisons or greater.

**[0028]** The protective wrap 2 can also be mere plastic film, in which case suitable films are, for example, PE-film, PP-film, PET-film and mono- or biaxially oriented films, such as for example biaxially oriented PP-film, i.e. BOPP-film. On the part of durability and protectiveness the thickness of said plastic films is suitably such that the basis weight of the plastic film is in the range of 10 to 100 g/m<sup>2</sup>, preferably in the range of 15 to 60 g/m<sup>2</sup> or 20 to 50 g/m<sup>2</sup>. The thickness of the protective wrap 2 to be used depends on the characteristics of the material of the protective wrap, of which strength is an exceptionally important characteristic. The advantage of plastic film is its high durability, protection against moisture and also transparency, which can in some cases be an important matter.

**[0029]** In Fig. 11 is shown the layered structure of a third protective wrap 2 according to the invention simplified such that only essential layers are visible. Additionally, the layer thicknesses are not drawn to scale. The layered structure is similar to the layered structure shown in Fig. 9. In this structure, the paper layer 19 functioning as the base has on its surface a surface layer 21 meltable by heat or ultrasound. In this case, in place of a separately used adhesive, all previously mentioned seams made by gluing are made by heat sealing or ultrasound. Although the figure does not show a printing ink layer, it is normally on top of the meltable surface layer 21. At the sites of meltable seams there is not necessarily any printing ink. Also in case of protective wraps 2 composed entirely of plastic film, all previously mentioned adhesive seams can be made by heat sealing or ultrasound instead of by gluing.

**[0030]** To the person skilled in the art it is clear that the invention is not limited to the above-described embodiment example, but it may vary in the scope of the claims as appended below. Accordingly, the protective wrap can in conjunction with the making of the group package also be taken from a stack of pre-cut sheets rather than from a paper roll.

**[0031]** To the person skilled in the art it is also clear that the wrapping of protective wrap around the group package can also be implemented in many different ways, as can the gluing of the folds at the ends. The idea in embodiments of the invention is however that a package of corrugated cardboard or similarly made package is replaced by lighter-weight recyclable protective wrap or something similar, which is fast and easy to wrap around the sheet paper packages.

**[0032]** Additionally, it is clear to the person skilled in the art that to a group package according to the invention can be attached many different types of carrying handles, which will differ from the solutions presented in the above. For example, the entire group package can be surrounded with a separate reinforced paper ribbon, which is wound around the group package in the manner of the plastic ribbon currently used. A wider paper ribbon ena-

bles however more pleasant handling of the group package. In this solution, the protective wrap can be thinner and weaker than in other solutions presented above, because the protective wrap itself does not receive forces due to load when the package is lifted or carried. The carrying handle can be of paper and/or plastic.

**[0033]** It is also clear that in place of the protective wrap other types of thin protective structures can be used, as has been presented above. For example, in the implementation of an idea according to the invention, different protective wraps based on non-woven fabric or other similar thin and protective wraps can be used.

**[0034]** To the person skilled in the art it is also clear that a group package according to the invention is also suitable for other types of packages than group packages composed of five individual packages. The individual packages can, for example, be 2 to 5 in number, which are wrapped by protective wrap to form one group package.

#### Preferred Items of the Invention

#### **[0035]**

1. A group package (1) for sheet material such as office paper intended for use in printing or copying, characterized in that the group package (1) is composed of protective wrap (2) that is essentially uniform, existing as rollstock and cut to the correct measurement at the beginning of the packaging stage, of a basis weight of greater than 10 g/m<sup>2</sup>, wherein the protective wrap is wrapped around the office papers to be packaged, and at the ends of the group package (1) folds (3-6) are formed from the edges of the protective wrap (2) such that at least one outer fold (3, 4) is attached to at least one inner fold (5, 6).

2. A group package according to item 1, characterized in that the basis weight of the protective wrap (2) is essentially in the range of 60 to 200 g/m<sup>2</sup>, and that the material of the protective wrap (2) is kraft paper, kraftliner, kraft paper coated with plastic film (20), kraftliner coated with plastic film (20), and that the plastic film (20) used as the coating is PE-film or PP-film, the basis weight of whose plastic film (20) is essentially in the range of 5 to 30 g/m<sup>2</sup>.

3. A group package (1) according to item 1 or 2, characterized in that the basis weight of the protective wrap (2) is in the range of 80 to 160 g/m<sup>2</sup>, suitably in the range of 120 to 150 g/m<sup>2</sup>, and that the basis weight of the plastic film (20) used as a coating is in the range of 5 to 30 g/m<sup>2</sup>, suitably in the range of 7 to 20 g/m<sup>2</sup>.

4. A group package (1) according to item 1, characterized in that the protective wrap (2) is entirely of

plastic film, such as PE-film, PET-film, or mono- or biaxially oriented film, such as for example biaxially oriented PP-film, i.e. BOPP-film, and that the basis weight of the plastic film is in the range of 10 to 100 g/m<sup>2</sup>, suitably in the range of 15 to 60 g/m<sup>2</sup> and preferably in the range of 20 to 50 g/m<sup>2</sup>.

5. A group package (1) according to anyone of the preceding items, characterized in that in conjunction with wrapping of the group package (1) the protective wrap (2) is taken directly from the roll and wrapped at least once around the long sides of the group package (1), and that on the inner surface of the protective wrap (2), near the other end of the group package (1) is an opening ribbon (23), which is essentially as long as the protective wrap and in the longitudinal direction of the protective wrap.

6. A group package (1) according to anyone of the preceding items, characterized in that the outer folds (3, 4) are attached by their inner surface to at least one of the inner folds (5, 6), and that the uppermost outer fold (4) is attached by its inner surface also to the outer surface of the inner outer fold (3).

7. A group package (1) according to anyone of the preceding items, characterized in that the outer folds (3, 4) are attached by their inner surface to at least one of the inner folds (5, 6) by an essentially horizontal attaching seam (8), and that the uppermost outer fold (4) is attached by its inner surface also to the outer surface of the inner outer fold (3) by an essentially vertical attaching seam (9).

8. A group package (1) according to anyone of the preceding items, characterized in that the outer folds (3, 4) are attached by their inner surface to at least one of the inner folds (5, 6) by a slanted attaching seam (10, 11) travelling near the upper edge of the outer folds (3, 4), and that the uppermost outer fold (4) is attached by its inner surface also to the outer surface of the inner outer fold (3) by an attaching seam (12).

9. A group package (1) according to anyone of the preceding items, characterized in that between the outer folds (3, 4) and the inner folds (5, 6) a lifting space (7) is formed, and that the lower edges of the outer folds (3, 4) are arranged to function as a carrying support.

10. A group package (1) according to anyone of items 1 to 5, characterized in that to the protective wrap (2) is attached at least one separate carrying handle (13, 14, 15, 16).

11. A method for manufacturing a group package (1) for sheet material such as office paper intended for

use in printing or copying, characterized in that the group package is made of essentially tough and strong protective wrap (2) existing as rollstock and cut to the correct measurement at the beginning of the packaging stage, which is placed in its lateral direction essentially centrally on top of the office papers to be packaged and initial wrapping is performed by wrapping the protective wrap (2) around the office papers, after which the end folds are formed by pressing the inner folds (5, 6) against the end of the group package (1) formed by the end surface of the office papers, as well as the outer folds (3, 4) are formed by folding the portions of the protective wrap (2), locating on the sides, on the vertical edges of the group package and exceeding the length of the office papers, on each side edge doubly on top of each other essentially as two folds in the shape of a triangle, and that after making the folds the outer folds (3, 4) are attached at each end of the group package (1) to at least one of the inner folds (5 or 6) and if necessary also to one another.

12. A method according to item 11, characterized in that the group package (1) is made from essentially tough and strong protective wrap (2) existing as rollstock, which is wrapped directly from the roll around the office papers to be packaged, and that from the folds (3, 4) at the ends of the group package carrying supports are formed, which function as carrying handles.

13. A method according to item 11, characterized in that the group package (1) is made from essentially tough and strong protective wrap (2) existing as sheet stock, which is wrapped around the office papers to be packaged, and that from the folds (3, 4) at the ends of the group package carrying supports are formed, which function as carrying handles.

14. A method according to item 11, characterized in that on the group package (1) a separate carrying handle (13, 14, 15, 16) is made by attaching a carrying handle to the protective wrap (2).

15. A group package (1) or method according to anyone of the preceding items, characterized in that the said attachments are made/will be made either by gluing, heat sealing or ultrasound.

## Claims

1. A method for manufacturing a group package (1) for sheet material such as office paper intended for use in printing or copying, **characterized in that** the group package is made of essentially tough and strong protective wrap (2) cut to the correct measurement at the beginning of the packaging stage,

which is placed in its lateral direction essentially centrally on top of the office papers to be packaged and initial wrapping is performed by wrapping the protective wrap (2) around the office papers, after which the end folds are formed by pressing the inner folds (5, 6) against the end of the group package (1) formed by the end surface of the office papers, as well as the outer folds (3, 4) are formed by folding the portions of the protective wrap (2), locating on the sides, on the vertical edges of the group package and exceeding the length of the office papers, on each side edge doubly on top of each other essentially as two folds in the shape of a triangle, and that after making the folds the outer folds (3, 4) are attached at each end of the group package (1) to at least one of the inner folds (5 or 6) and if necessary also to one another.

2. A method according to claim 1, **characterized in that** the protective wrap (2) exists as rollstock, which is wrapped directly from the roll around the office papers to be packaged, and that from the folds (3, 4) at the ends of the group package carrying supports are formed, which function as carrying handles.
3. A method according to claim 1, **characterized in that** the protective wrap (2) exists as sheet stock, which is wrapped around the office papers to be packaged, and that from the folds (3, 4) at the ends of the group package carrying supports are formed, which function as carrying handles.
4. A method according to claim 1, **characterized in that** on the group package (1) a separate carrying handle (13, 14, 15, 16) is made by attaching a carrying handle to the protective wrap (2).
5. The method according to anyone of the preceding claims, wherein the separate carrying handle (13) is attached at each end of the group package (1) between the outer folds (3, 4) and the inner folds (5, 6).
6. The method according to anyone of claims 1 to 4, wherein the separate carrying handle (14) is attached at its ends to the end folds (3-6) of each end of the group package (1), and is preferably additionally partly attached on the upper surface of the group package (1).
7. The method according to claim 6, wherein the carrying handle (14) is attached by means of an adhesive seam which is located between the inner surface of the carrying handle (14) and the outer surface of all end folds (3-6).
8. The method according to anyone of claims 1 to 4, wherein the separate carrying handle (15) is attached at its ends to the sides of the group package

(1), and is preferably additionally partly attached on the upper surface of the group package (1).

9. The method according to one of claims 1 to 4 and 6 to 8, wherein the separate carrying handle (14, 15) is made go around the group package (1), and is preferably attached to the bottom of the group package (1) such that the carrying handle never disappears.
10. The method according to one of claims 1 to 4, wherein the separate carrying handle (16) is located on top of the group package (1) and is attached at its ends to the upper surface of the group package (1), wherein a reinforcement patch (17) is attached to the upper surface of the group package (1) such that it also covers the ends of the carrying handle (16), so that the attachment of the carrying handle (16) is reinforced, wherein the reinforcement patch (17) has an opening at its centre for the carrying handle (16) to go through.
11. A method according to anyone of the preceding claims, **characterized in that** the said attachments are made/will be made either by gluing, heat sealing or ultrasound.

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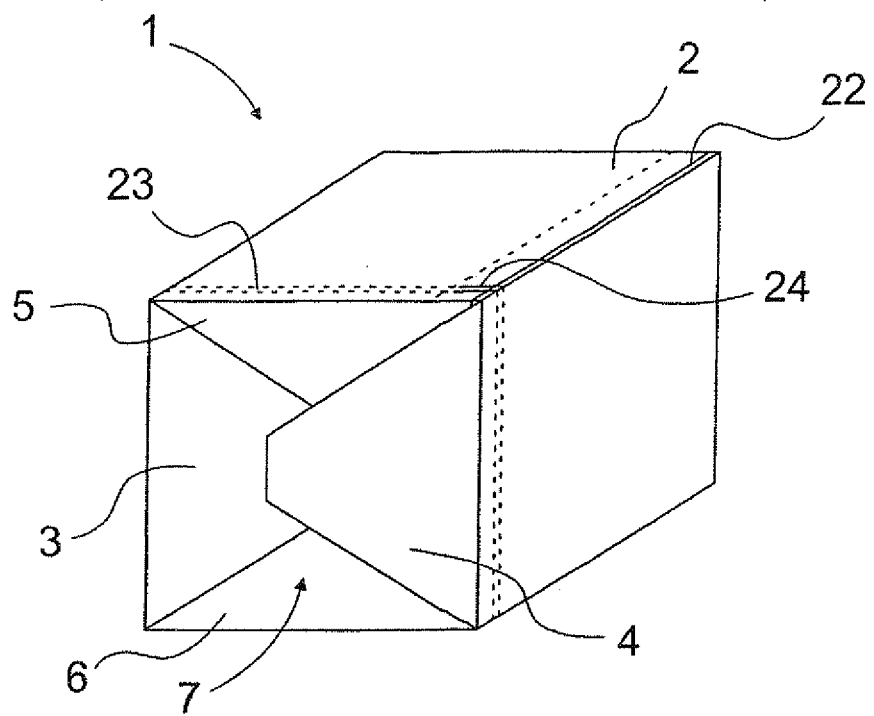


Fig. 1

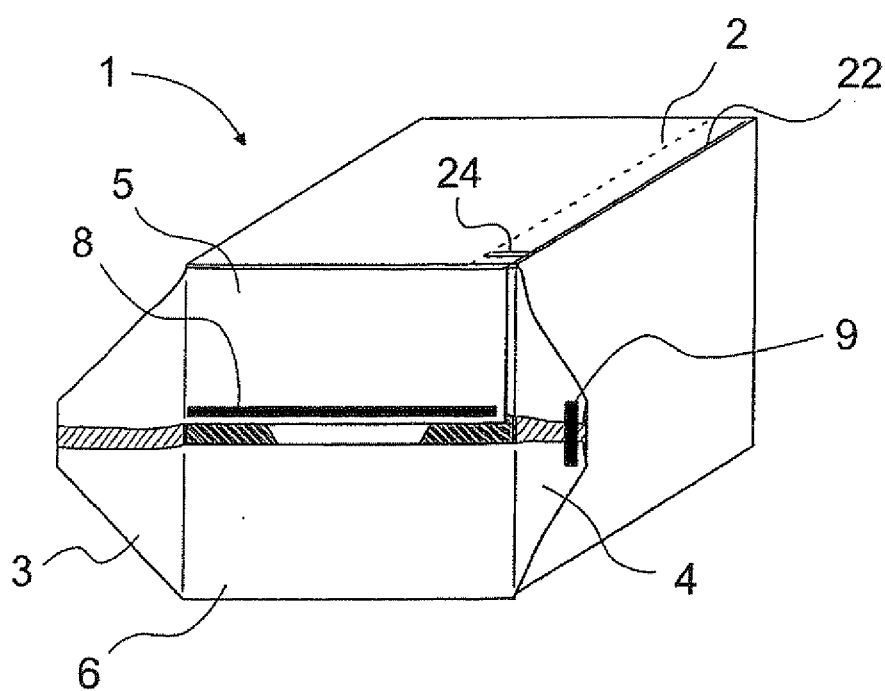


Fig. 2

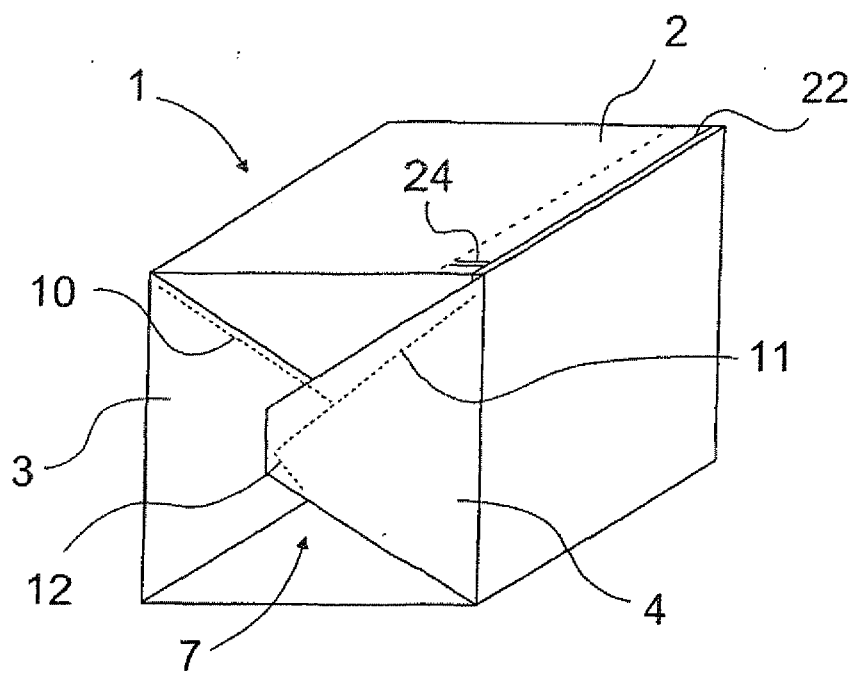


Fig. 3

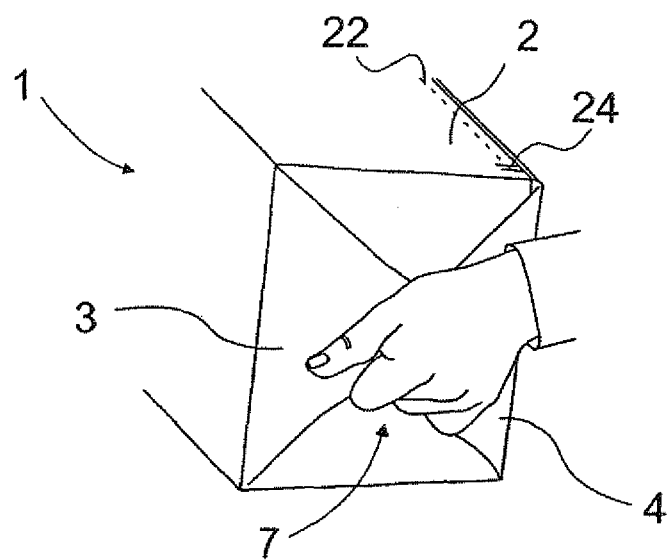


Fig. 4

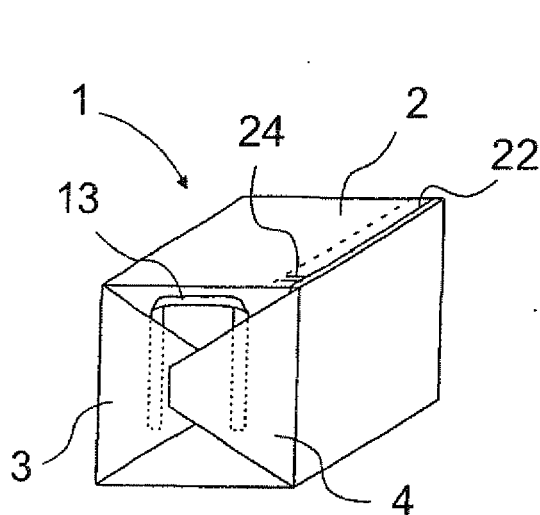


Fig. 5

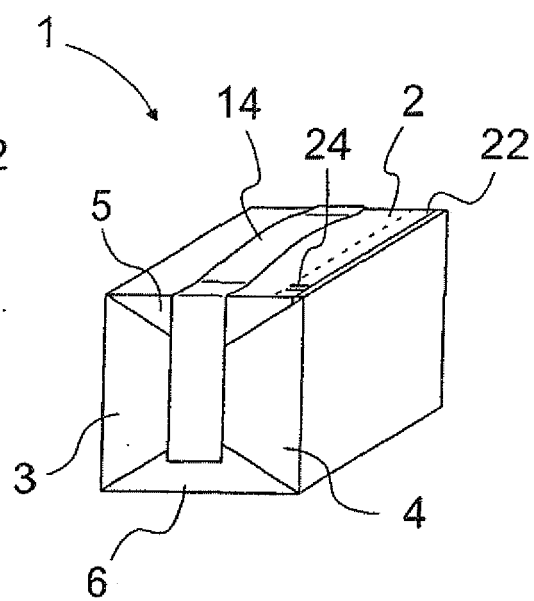


Fig. 6

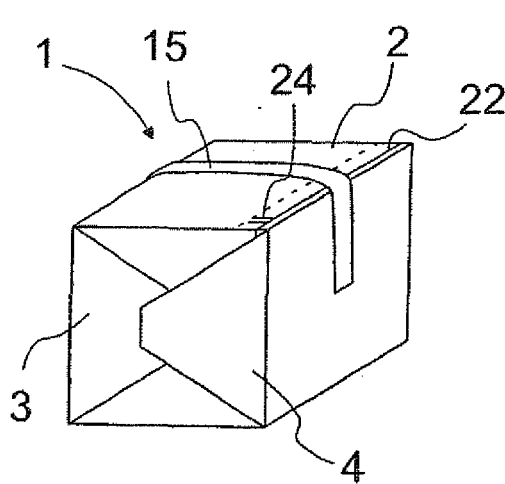


Fig. 7

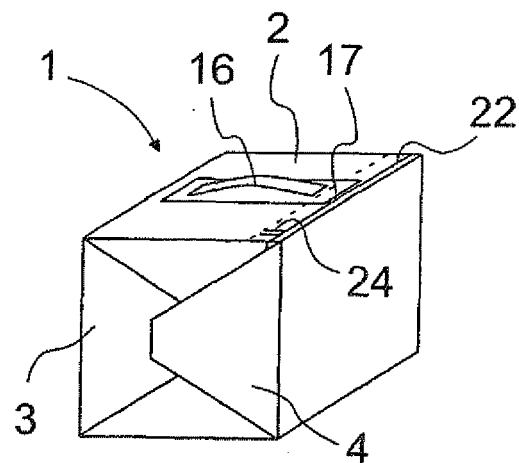
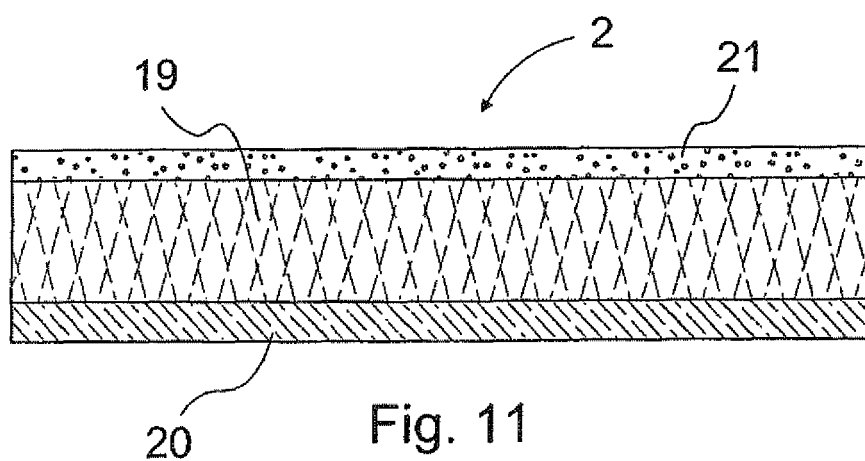
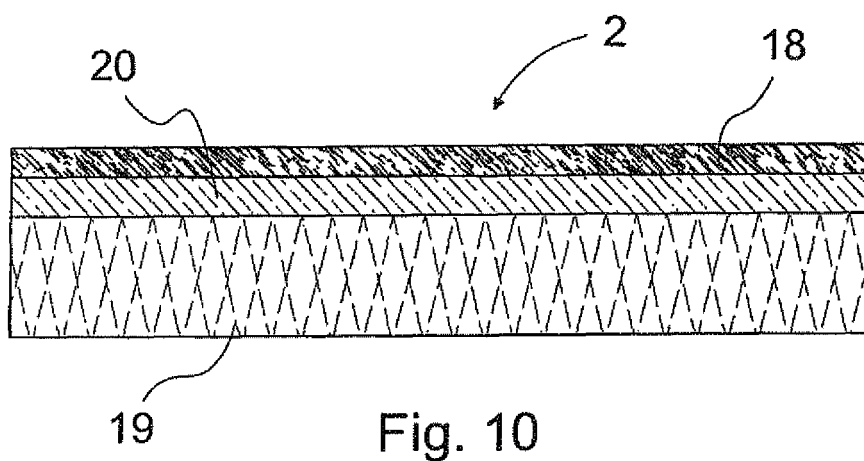
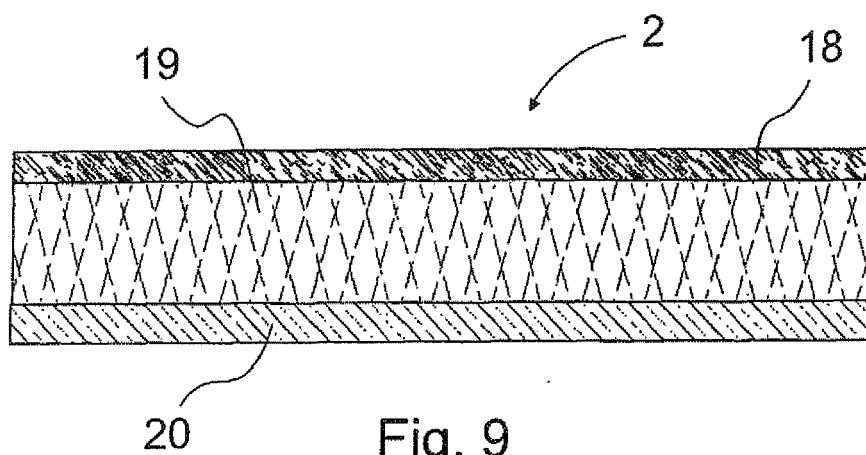


Fig. 8





## EUROPEAN SEARCH REPORT

Application Number  
EP 12 15 2070

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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.

09-03-2012

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