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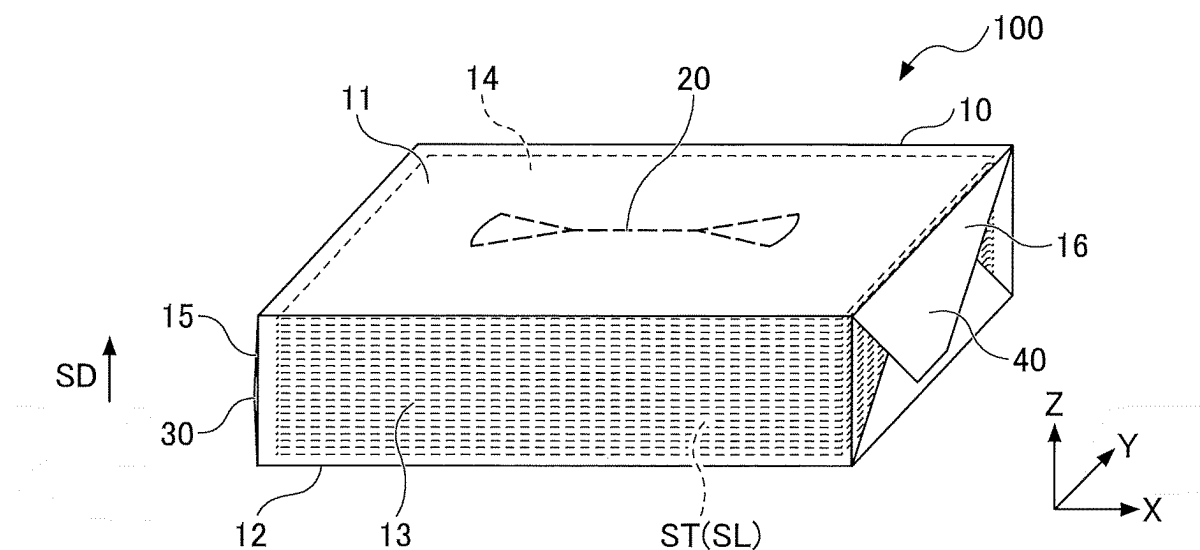
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(54) **SHEET PACKAGING BODY**

(57) A sheet package including a plurality of sheets stacked, a packaging bag containing the plurality of sheets, and a retrieval opening formed in an upper surface of the packaging bag to allow one of the plurality of sheets to be pulled through, wherein the retrieval opening

includes a slit extending in a first direction and an opening portion continuous with at least one end portion of the slit, and wherein, in a second direction crossing the first direction, a width of the opening portion is greater than a width of the slit.

FIG.1



Description

TECHNICAL FIELD

5 [0001] The present invention relates to a sheet package.

BACKGROUND OF THE INVENTION

10 [0002] Sanitary thin paper such as tissue paper contained in a carton (cardboard box) is widely used. However, carton-type sanitary thin paper is bulky when carried and stored, and has problems in disposal after use, environmental load, cost, and the like. Therefore, in recent years, there is an increasing demand for a sheet package in which sheets such as sanitary thin paper is contained in a flexible film packaging bag. For example, PTL 1 discloses a film package in which a slit (perforations) through which sanitary sheets are taken out is formed in a packaging bag of a flexible film containing the sanitary sheets (see FIG. 8).

RELATED-ART DOCUMENT

Patent Document

20 [0003] Patent Document 1: Japanese Patent Laid-Open No. 2016-188092

SUMMARY OF THE INVENTION

Problems to be Solved by the Invention

25 [0004] However, in the conventional sheet package, a retrieval opening formed by a slit (perforations) is narrow, and when thin paper (a sheet) is taken out from the inside of the packaging bag, the retrieval opening is difficult to open. When a sheet is taken out, the sheet may get caught by the retrieval opening, or the sheet may be torn (see FIG. 8). In the retrieval opening formed as a slit in the film packaging bag, the holding force for holding the sheets may decrease at the time of use, and the sheets may drop onto the inside of the packaging bag. Furthermore, the film packaging bag is lighter than the carton, and therefore, if the remaining sheets decrease at the time of use, the film packaging bag may be lifted up altogether when a sheet is taken out. In this manner, the conventional sheet package has problems in taking-out of sheets.

30 [0005] It is an object of the present invention to provide a sheet package that is excellent in taking-out of sheets.

Means for Solving the Problem

35 [0006] The first aspect of the present invention is a sheet package including a plurality of sheets stacked, a packaging bag containing the plurality of sheets, and a retrieval opening formed in an upper surface of the packaging bag to allow one of the plurality of sheets to be pulled through, wherein the retrieval opening includes a slit extending in a first direction and an opening portion continuous with at least one end portion of the slit, wherein, in a second direction crossing the first direction, a width of the opening portion is greater than a width of the slit.

Effects of the Invention

40 [0007] According to one aspect of the present invention, a sheet package that is excellent in taking-out of sheets can be provided.

BRIEF DESCRIPTION OF THE DRAWINGS

50 [0008]

FIG. 1 is a drawing illustrating a sheet package according to an embodiment (a first embodiment) of the present invention;

55 FIG. 2 is a drawing of the sheet package according to the first embodiment as seen from the above in the height direction;

FIG. 3 is an enlarged drawing of a portion of a retrieval opening in the sheet package as illustrated in FIG. 2;

FIG. 4 is a drawing illustrating a usage state of the sheet package according to the first embodiment;

FIG. 5 is an enlarged drawing of a portion of a retrieval opening of a sheet package according to a modified embodiment of the first embodiment;

FIG. 6 is a drawing of a sheet package according to the second embodiment as seen from above in the height direction;

FIG. 7 is an enlarged drawing of a portion of a retrieval opening of the sheet package as illustrated in FIG. 6; and

FIG. 8 is a drawing illustrating a conventional sheet package.

DETAILED DESCRIPTION OF THE INVENTION

[0009] The embodiment of the present invention will be described in detail with reference to the drawings. In the following description, portions common to respective drawings may be denoted by the same reference numerals and explanation thereabout may be omitted. Also, for ease of understanding, the scales of members in respective drawings may be different from the actual scales.

[0010] FIG. 1 is a drawing illustrating a sheet package according to the first embodiment from among the embodiments of the present invention. FIG. 2 is a drawing of the sheet package according to the first embodiment as seen from above in the height direction. FIG. 3 is an enlarged drawing of a portion of the retrieval opening of the sheet package as illustrated in FIG. 2. FIG. 4 is a drawing illustrating a usage state of the sheet package according to the first embodiment. With respect to the sheet package 100 as illustrated in FIG. 1 to FIG. 4, a longitudinal direction (a left-and-right direction) is defined as an X direction, a depth direction (a front-and-rear direction) is defined as a Y direction, and a height direction (an up-and-down direction) is defined as a Z direction. Hereinafter, the sheet package 100 according to the present embodiment is explained.

[0011] As illustrated in FIG. 1, the sheet package 100 according to the first embodiment includes sheets ST, a packaging bag 10, and a retrieval opening 20. The sheet package 100 is an example of a sheet package according to the present invention. The sheets ST, the packaging bag 10, and the retrieval opening 20 are examples of a sheet, a packaging bag, and a retrieval opening, respectively, constituting the sheet package according to the present invention.

[0012] The sheet ST is contained in the packaging bag 10 as a stacked body SL including multiple stacked sheets ST. The stacked body SL of the sheets ST is contained in the packaging bag 10 so that the stacking direction (an SD direction) of the sheet ST is in the height direction (the Z direction). The sheet stacked body SL is configured to allow a set of sheets ST to be pulled out through a retrieval opening 20 (OP) formed in the packaging bag 10 (see FIG. 4).

[0013] The stacked body SL of the sheets ST is not limited to a stacked body in which multiple sheets ST are simply stacked, and each sheet ST may be stacked in a folded state, or sheets ST may be stacked in an inter-folded state (what is termed as a pop-up type sheet stacked body SL). From the viewpoint of pulling sheets ST one set at a time, the stacked body SL of the sheets ST is preferably a stacked body SL that allows sheets ST to be pulled out in a pop-up manner.

[0014] The dimensions of the stacked body SL of the sheets ST are such that the length of the sheet package 100 in the longitudinal direction (the X direction) is about 80 to 250 mm, and in a plan view, the length of the sheet package 100 in the depth direction (the Y direction) orthogonal to the longitudinal direction (the X direction) is about 50 to 130 mm, and the length of the sheet package 100 in the height direction (the Z direction) is about 10 to 90 mm. Such stacked body of thin paper can be manufactured by, for example, rotary or multi-stand interfolders.

[0015] The purpose of the sheets ST is not particularly limited, and the sheets ST can be applied to sanitary thin paper such as, for example, tissue paper, toilet paper, kitchen paper, and paper towels. Such sanitary thin papers also include sanitary thin papers containing moisturizing ingredients (for example, lotion tissue and the like). The purpose of the sanitary thin paper constituting the sheets ST is not particularly limited, and the sanitary thin paper can be applied to any of the industrial, household, or portable uses. Among them, the sheet package 100 according to the present embodiment is suitably used as household tissue paper.

[0016] The number of plies of the sheet ST is not particularly limited, and the sheet ST may be of one ply or more, and preferably two plies (two layers). The shape of the sheet ST is not particularly limited, and the sheet ST preferably has, for example, a rectangular contour shape when two-ply sheets are folded.

[0017] The material of the sheets ST is not particularly limited, but for example, sheets such as paper, non-woven fabric, and cloth can be used as the sheets ST, and the sheets ST are preferably paper sheets. In a case where the sheets ST are paper sheets, base paper mainly made from pulp is used. Known composition for paper sheets may be used as the pulp composition. For example, the proportion of pulp is greater than or equal to 50 mass%, preferably greater than or equal to 90 mass%, and more preferably 100 mass%.

[0018] In the pulp composition of the sheets ST (paper sheets), for example, softwood pulp such as needle bleached kraft pulp (NBKP) or needle unbleached kraft pulp (NUKP) and hardwood pulp such as leaf bleached kraft pulp (LBKP) or leaf unbleached kraft pulp (LUKP) may be mixed at an appropriate ratio. Particularly, in the pulp composition, the proportion of softwood pulp is preferably greater than the proportion of hardwood pulp. The ratio of softwood pulp to hardwood pulp is preferably between 10:90 and 80:20. Recycled paper pulp may be used as pulp included in the pulp composition of the sheets ST (paper sheets).

[0019] The basis weight of the sheets ST is not particularly limited, but according to the number of plies, in a case of paper, preferably, the basis weight is greater than or equal to 10 g/m² and is smaller than or equal to 80 g/m², and in a case of non-woven fabric, the basis weight is greater than or equal to 20 g/m² and smaller than or equal to 100g/m². The basis weight is measured based on the standard of JIS P 8124.

[0020] The thickness of the sheet ST (paper sheet) is not particularly limited, but, for example, the paper thickness measured under the environment of JIS P 8111(1998) can be employed. For example, the paper thickness of the paper sheet constituting the sheet ST is preferably greater than or equal to 50 μm and smaller than or equal to 500 μm, and more preferably greater than or equal to 60 μm and smaller than or equal to 330 μm, per 2 plies.

[0021] After sufficiently adjusting the humidity of a specimen under conditions defined in JIS P 8111 (1998), the paper thickness is measured by using a dial thickness gauge (thickness measuring instrument) "PEACOCK model G" (manufactured by OZAKI MFG. CO., LTD) under the same conditions in the state of two plies. Specifically, after confirming that there is no dust or dirt between a plunger and a measurement table, the plunger is lowered onto the measurement table, and the scale of the dial thickness gauge is moved to adjust the zero point. The plunger is lifted to place the specimen on the measurement table, the plunger is slowly lowered, and then the gauge is read. In this process, the plunger is just placed on the specimen. The plunger has a circular end part that is made of a metal and has a diameter of 10 mm, and the plunger is placed on the specimen such that a flat surface of the circular end part perpendicularly contacts the paper surface. The load applied when measuring the thickness is about 70 gf. An average of ten measurements is adopted as the paper thickness.

[0022] An embossing process may be performed on the paper sheets constituting the sheets ST. Such embossing processing includes: processing for pressing an emboss, not illustrated, onto both ends of the paper sheets by a known contact embossing method, a known edge embossing method, and the like and stacking multiple paper sheets; processing for inserting pins, not illustrated, into paper sheets by a known pin embossing method to form a pin emboss on one of the surfaces of the paper sheets; processing for forming an emboss by heating and melting a water-soluble adhesive (starch and the like) and bonding stacked paper sheets (not illustrated) by a known embossing method; and the like.

[0023] The packaging bag 10 constituting the sheet package 100 is formed by a flexible film. The packaging bag 10 is manufactured by caramel packaging. Specifically, both ends of a tubular flexible film are formed by seal portions 30, 40 folded and bonded (sealed). The packaging of the sheet package 100 is not limited to such caramel packaging, and may be packaging in which both ends or any one of the ends of the tubular flexible film are sealed in a gusset shape with heat seals (packaging sealed by what is termed as a pillow packaging).

[0024] The material of the flexible film that forms the packaging bag 10 is not particularly limited, and for example, resins such as polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET), polystyrene (PS), polyvinyl chloride (PVC), ethylene-vinyl acetate copolymer body (EVA), and polyamide (PA) can be used.

[0025] Among these flexible films, polyethylene, polypropylene, polyethylene terephthalate, and the like are preferable, because, among flexible films, they are flexible, excellent in handleability, excellent in sealing property when heat-sealed, inexpensive, and the like. Also, polyethylene is preferable because polyethylene is odorless, has excellent water resistance and chemical resistance, and can be mass-produced at a low cost. As the polyethylene, high-density polyethylene, low-density polyethylene, and the like can be used. In addition, polypropylene is preferable because polypropylene is robust and easy to mold, achieves good color development at the time of printing, and can impart gloss.

[0026] The form of the flexible film forming the packaging bag 10 is not particularly limited, and may be a single-layer film in which the resin explained above is formed of a single layer, a laminated film in which the resins explained above are stacked, and a mixed film formed by a mixture of two or more kinds of resins explained above.

[0027] The thickness of the flexible film forming the packaging bag 10 is not particularly limited, and is preferably greater than or equal to 20 μm and smaller than or equal to 100 μm, and more preferably greater than or equal to 25 μm and smaller than or equal to 70 μm. When the thickness of the flexible film is greater than or equal to 20 μm, a sufficient rigidity as the packaging bag 10 containing the sheets ST can be ensured. When the thickness of the flexible film is smaller than or equal to 100 μm, the flexibility and lightness of the packaging bag 10 can be ensured, and the cost can be reduced.

[0028] The material forming the packaging bag 10 is not limited to the resin material such as the flexible film explained above, and a paper material may be used. As the material forming the packaging bag 10, biodegradable materials (biodegradable plastics, biodegradable paper, and the like) and biomass materials (renewable organic resources derived from living organisms, such as biomass films, excluding fossil resources) can be used.

[0029] In the present embodiment, the packaging bag 10 includes an upper surface 11, a lower surface 12, a front surface 13, a back surface 14, a side surface 15, and a side surface 16, and contains the stacked body SL of the sheets ST. As illustrated in FIG. 1, the sheet package 100 is such that the upper surface 11 and the lower surface 12 are opposite to each other in the up-and-down direction (the Z direction), the front surface 13 and the back surface 14 are opposite to each other in the front-and-rear direction (the Y direction), and the side surface 15 and the side surface 16 are opposite to each other in the left-and-right direction (the X direction).

[0030] In the packaging bag 10, the upper surface 11 is provided on the upper side in the up-and-down direction (the

Z direction), and the lower surface 12 is provided on the lower side in the up-and-down direction (the Z direction). The front surface 13 is provided on the front side in the front-and-rear direction (the Y direction), and the back surface 14 is provided on the rear side in the front-and-rear direction (the Y direction). The side surface 15 is provided on the left side in the left-and-right direction (the Y direction), and the side surface 16 is provided on the right side in the left-and-right direction (the Y direction). The side surface 15 and the side surface 16 are continuous with all of the upper surface 11, the lower surface 12, the front surface 13, and the back surface 14 (see FIG. 1).

[0031] The retrieval opening 20 is formed in the upper surface 11 of the packaging bag 10. The retrieval opening 20 is arranged at a center 11a of the upper surface 11 of the packaging bag 10 in the longitudinal direction (the X direction) of the sheet package 100, and extends in the first direction (the X direction). In the present embodiment, the first direction (the X direction) in which the retrieval opening 20 extends corresponds to the longitudinal direction (the X direction) of the sheet package 100.

[0032] The form of the retrieval opening 20 is not particularly limited, and, for example, as illustrated in FIG. 1 and FIG. 2, the form of the retrieval opening 20 is configured by forming perforations M in the upper surface 11 of the packaging bag 10. In the example as illustrated in FIG. 1 and FIG. 2, by tearing the retrieval opening 20 formed by the perforations M, the upper surface 11 of the packaging bag 10 is torn-opened in the first direction (the X direction), and the broken (torn-opened) retrieval opening 20 constitutes the retrieval opening OP for the sheets ST (see FIG. 4).

[0033] In the first direction (the X direction), the dimension (a length L2) of the retrieval opening 20 (the perforations M) can be determined appropriately according to the dimension (a length L1) of the sheet ST to be taken out. For example, a difference between the length L2 of the retrieval opening OP in the left-and-right direction (the X direction) and the width dimension (the length L1) of the sheet ST is greater than or equal to -100 mm and smaller than or equal to 0 mm, preferably greater than or equal to -80 mm and smaller than or equal to 0 mm, and more preferably greater than or equal to -70 mm and smaller than or equal to -10 mm. When this is converted to a ratio of the length L2 of the retrieval opening OP to the width dimension (the length L1) of the sheet ST in the left-and-right direction (the X direction), the ratio is smaller than or equal to 100%, preferably smaller than or equal to 80%, and more preferably greater than or equal to 10% and smaller than or equal to 75%.

[0034] In the sheet package 100 according to the present embodiment, the retrieval opening 20 includes a slit 21 and opening portions 22. The slit 21 and the opening portions 22 are formed by continuously formed perforations M. The continuously formed perforations M mean that cut portions C constituting the perforations M and tie portions T are alternately arranged. In this case, the cut portions C indicate intermittently cut portions of the upper surface 11 of the packaging bag 10, and the tie portions T indicate noncut portions between every two neighboring cut portions C (see FIG. 3).

[0035] In the perforations M, the lengths of the cut portions C and the lengths of the tie portions T are not particularly limited. For example, the length of each cut portion C may be greater than or equal to 0.8 mm and smaller than or equal to 5 mm, preferably greater than or equal to 1.5 mm and smaller than or equal to 4.5 mm, and more preferably greater than or equal to 2.5 mm and smaller than or equal to 3.5 mm. The length of each tie portion T may be greater than or equal to 0.3 mm and smaller than or equal to 5 mm, preferably greater than or equal to 0.4 mm and smaller than or equal to 2 mm, and more preferably greater than or equal to 0.5 mm and smaller than or equal to 1.5 mm.

[0036] As illustrated in FIG. 1 and FIG. 2, the slit 21 is constituted by a straight line extending in the first direction (the X direction). The shape of the slit 21 is not limited to a straight line, and may be in a shape of an elongated rectangle and the like. In a case where the slit 21 is a straight line, the slit 21 is formed by tearing a single line of perforations, and in a case where the slit 21 is in a shape of an elongated rectangle, the slit 21 is formed by tearing two lines of perforations arranged side by side in the second direction (the Y direction). The dimension of the slit 21 is not particularly limited, and, for example, on the upper surface 11 of the packaging bag 10, a length L3 of the slit 21 in the first direction (the X direction) is a length occupying about one third of the dimension (the length L1) of the sheet ST.

[0037] The opening portions 22 are continuous with (or in communication with) at least one of the end portions 21a of the slit 21. In the present embodiment, as illustrated in FIG. 1 and FIG. 2, the opening portions 22 are provided at both end portions 21a, 21a of the slit 21 to be continuous with the respective end portions 21a. The opening portions 22 continuous with at least one of the end portions 21a of the slit 21 are not limited to the above form, and the opening portions 22 may be provided at any one of the both end portions 21a, 21a of the slit 21 to be continuous with the any one of the both end portions 21a, 21a. The shape of the opening portion 22 is not particularly limited, and may be, for example, in a shape of a circle, a triangle, a quadrangle, a rhombus, a fan shape, a polygon, and the like.

[0038] In the present embodiment, in the second direction (the Y direction) crossing the first direction (the X direction), a width W3 of the opening portion 22 is greater than a width W2 of the slit 21. In this case, the second direction (the Y direction) corresponds to the depth direction (the Y direction) of the sheet package 100 (see FIG. 1, FIG. 2). Each of the widths W2, W3 of the slit 21 and the opening portion 22, respectively, constituting the retrieval opening 20 represents a width in the second direction (the Y direction) crossing the first direction (the X direction).

[0039] The width W2 of the slit 21 and the width W3 of the opening portion 22 are not particularly limited so long as the width W3 of the opening portion 22 is greater than the width W2 of the slit 21. For example, the width W2 of the slit

21 is smaller than or equal to 7%, preferably smaller than or equal to 6%, and more preferably smaller than or equal to 5% of the dimension (a width W1) of the sheet ST. The width W3 of the opening portion 22 is greater than or equal to 8% and smaller than or equal to 30%, preferably greater than or equal to 10% and smaller than or equal to 29%, and more preferably greater than or equal to 14% and smaller than or equal to 28% of the dimension (the width W1) of the sheet ST.

[0040] As illustrated in FIG. 1 and FIG. 3, the sheet package 100 according to the present embodiment is configured such that, in the retrieval opening 20, the width W3 of the opening portion 22 increases away from the slit 21 in the first direction (the X direction). In other words, the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10 becomes gradually wider from the center portion 20a (the slit 21) side of the retrieval opening 20 to the end portions 20b (the opening portions 22) side of the retrieval opening 20 (see FIG. 2 and FIG. 3). Specifically, the opening portion 22 includes two inclined portions 22a, and the distance in the second direction (the Y direction) between the two inclined portions 22a increases from the center portion 20a side of the retrieval opening 20 to the end portion 20b side of the retrieval opening 20.

[0041] Further, in the sheet package 100 according to the present embodiment, as illustrated in FIG. 2 and FIG. 3, the opening portion 22 of the retrieval opening 20 includes a curved portion 22b protruding in a direction away from the slit 21 in the first direction (the X direction). In other words, in the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10, the end portion 20b of the retrieval opening 20 provided with the opening portion 22 is curved in a protruding shape that protrudes from the center portion 20a (the slit 21) side of the retrieval opening 20 to the end portion 20b (the opening portion 22) side of the retrieval opening 20 (see FIG. 2 and FIG. 3). In the present embodiment, in the curved portion 22b of the opening portion 22, a portion of the opening portion 22 is curved in a protruding shape. However, the entirety of the opening portion 22 may be curved in a protruding shape.

[0042] In the present embodiment, the curved portion 22b of the opening portion 22 is cut by a continuous cut CC. In other words, the curved portion 22b of the opening portion 22 is formed by only a cut portion, and is not provided with any tie portion (see FIG. 3).

[0043] In the sheet package 100 according to the first embodiment, as explained above, in the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10, the opening portions 22, 22 are continuous with both end portions 21a, 21a of the slit 21, and are provided with a width W3 greater than the width W2 of the slit 21. For this reason, when the thin paper (the sheet ST) is pulled out from the inside of the packaging bag 10, the sheet ST is less likely to get caught by the retrieval opening 20 and the sheet ST is less likely to be torn (see FIG. 4).

[0044] Specifically, in a conventional sheet package 100 in which a retrieval opening 20 is constituted by only a slit 21, the retrieval opening 20 is narrow, and therefore, sheets ST are likely to be clogged in the end portions 20b of the retrieval opening 20, and the sheets ST are likely to be rubbed against the end portion 20b of the retrieval opening 20 (see FIG. 8). In contrast, in the sheet package 100 according to the present embodiment, the end portions 20b (the opening portions 22) are wider than the center portion 20a (the slit 21) side of the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10 (see FIG. 1 to FIG. 3).

[0045] Accordingly, even when the retrieval opening 20 is narrow, the sheets ST are less likely to be clogged in the end portion 20b of the retrieval opening 20, and rubbing of the end portions 20b of the retrieval opening 20 and the sheets ST can be alleviated. Therefore, in the sheet package 100 according to the present embodiment, when the sheets ST are pulled out, the sheets ST can be prevented from getting caught by the end portion 20b of the retrieval opening 20, and the sheets ST can be prevented from being torn (see FIG. 4).

[0046] Also, in the present embodiment, the opening portions 22 continuous with the end portions 21a, 21a of the slit 21 can constitute buffer portions of the retrieval opening 20. Accordingly, when the slit 21 of the retrieval opening 20 that has been torn-open is opened with a fingertip, the stress applied to the retrieval opening 20 and its surroundings can be released (or dispersed) to the opening portion 22 (the buffer portion). Therefore, in the sheet package 100 according to the present embodiment, the slit 21 that has been torn-open can be readily opened with a fingertip, and this makes it easier to take out the sheets ST from the inside of the packaging bag 10 (e.g. take out the first sheet ST contained in the packaging bag 10) (see FIG. 4).

[0047] Also, in the present embodiment, as explained above, the opening portion 22 (the buffer portion) continuous with at least one of the end portions 21a of the slit 21 is provided. For this reason, the surroundings of the slit 21 can be bent according to the weight of the sheet ST held in the center portion 20a (the slit 21) side of the retrieval opening 20 at the time of use (or the slit 21 can be deformed according to the weight of the sheet ST). Therefore, in the sheet package 100 according to the present embodiment, the holding force for holding the sheet ST in the retrieval opening 20 is maintained, and this can prevent the sheets ST from dropping onto the inside of the packaging bag 10 at the time of use (hereinafter referred to as "dropping of the sheets ST") (see FIG. 4).

[0048] Also, in the present embodiment, as explained above, rubbing of the end portions 20b of the retrieval opening 20 and the sheet ST is alleviated, so that the end portion 20b of the retrieval opening 20 of the sheet package 100 is less likely to be torn at the time of use. Accordingly, a reduction in the holding force for holding the sheet ST in the retrieval opening 20 can be alleviated, and therefore, this can prevent the sheets ST from dropping onto the inside of

the packaging bag 10 at the time of use (hereinafter referred to as dropping of the sheets ST) (see FIG. 4).

[0049] In the present embodiment, when the sheet ST is taken out (or pulled out) from the slit 21 of the retrieval opening 20 at the time of use of the sheet package 100, a friction force (or a resistance force) applied to the slit 21 can be released (or dispersed) to the opening portion 22 (the buffer portion). Accordingly, in the present embodiment, even when the remaining sheets ST decrease at the time of use (i.e., even when the weight of the sheet package 100 decreases), lift up of the film packaging bag 10 when the sheet ST is taken out (hereinafter referred to as lift up of the packaging bag 10) can be prevented (see FIG. 4).

[0050] In the present embodiment, the opening portions 22 wider than the slit 21 in the second direction (the Y direction) are formed in both end portions 21a, 21a of the slit 21, so that even when the length L2 (the forming area of the retrieval opening) of the retrieval opening 20 in the first direction (the X direction) is reduced, the dropping of the sheets can be further prevented while the lift up of the packaging bag is prevented (see FIG. 4).

[0051] Further, in the present embodiment, the opening portion 22 having the width W3 greater than the width W2 of the slit 21 is provided in the retrieval opening 20, and the state inside of the sheet package 100 can be visually observed through the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10. Accordingly, even in a case where sheets ST are contained in the packaging bag 10 as in the sheet package 100, the remaining quantity and the like of the sheets ST can be confirmed (see FIG. 4).

[0052] Also, in the sheet package 100 according to the present embodiment, the width W3 of the opening portion 22 increases away from the slit 21 in the first direction (the X direction), so that the stress applied to the center portion 20a (the slit 21) of the retrieval opening 20 and its surroundings can be gradually released (or dispersed) to the end portions 20b of the retrieval opening 20 (the opening portions 22) serving as the buffer portion. In such a configuration, the surroundings of the slit 21 can be adequately bent according to the stress applied to the center portion 20a (the slit 21) side of the retrieval opening 20 and the like. Therefore, in the sheet package 100 according to the present embodiment, while allowing the sheets ST to be readily taken out, the dropping of the sheets ST and the lift up of the packaging bag 10 can be prevented in a well-balanced manner (see FIG. 4).

[0053] Also, in the present embodiment, as explained above, the opening portions 22 provided in the retrieval opening 20 include curved portions 22b, so that this ensures that the sheets ST are less likely to be clogged in the end portions 20b of the retrieval opening 20, and rubbing of the end portions 20b of the retrieval opening 20 and the sheets ST can be alleviated more greatly. In the present embodiment, in the retrieval opening 20, portions formed with the opening portions 22 having the curved portions 22b can constitute grabbing margins. Therefore, in the present embodiment, even when the opening portion 22 is provided in at least one of the end portions 21a of the slit 21 of the retrieval opening 20, a grabbing margin corresponding to the opening portion 22 can prevent a reduction in the openability of the retrieval opening 20 (see FIG. 3).

[0054] Also, in the present embodiment, in a case where a portion in which the opening portion 22 is formed in the retrieval opening 20 constitutes the grabbing margin, a curved portion 22b can also be formed in the grabbing margin to correspond to the curved portion 22b of the opening portion 22 (see FIG. 3). In this case, when the retrieval opening 20 is torn-opened, the grabbing margin can be readily grabbed by grabbing the curved portion 22b of the grabbing margin. Therefore, in the present embodiment, in a case where the opening portions 22 continuous with the end portions 21a of the slit 21 are provided in the retrieval opening 20, the openability of the retrieval opening 20 can be improved (see FIG. 4).

[0055] Also, in the present embodiment, the curved portion 22b of the opening portion 22 is formed by the continuous cut, so that, when the retrieval opening 20 is torn-opened, the curved portion 22b of the grabbing margin that is formed to correspond to the curved portion 22b of the opening portion 22 can be readily grabbed with fingers of a hand (see FIG. 3). Therefore, in the present embodiment, in a case where the opening portions 22 continuous with the end portions 21a of the slit 21 are provided in the retrieval opening 20, the openability of the retrieval opening 20 can be further improved.

[0056] Further, in the sheet package 100 according to the present embodiment, as explained above, the slit 21 and the opening portions 22 of the retrieval opening 20 are formed by the continuous perforations M. In the present embodiment, by tearing the continuous perforations M, the retrieval opening 20 in which the slit 21 and the opening portions 22 are continuous can be readily formed (see FIG. 1 to FIG. 4).

[0057] FIG. 5 is an enlarged drawing of a portion of a retrieval opening 20 of a sheet package 100 according to a modified embodiment of the first embodiment. In the modified embodiment of the first embodiment, the curved portion 22b of the opening portion 22 is formed by a cut TC having a tie portion 22c. In the cut TC having the tie portion 22c, the cut is not continuously formed. Specifically, the curved portion 22b of the grabbing margin that is formed to correspond to the curved portion 22b of the opening portion 22 is connected via the tie portion 22c to an area of the upper surface 11 of the package other than the grabbing margin (see FIG. 5).

[0058] In the modified embodiment of the first embodiment, in the opening portion 22 of the retrieval opening 20, the tie portion 22c of the curved portion 22b is provided on an extension line of the slit 21 in the first direction (the X direction). Specifically, the tie portion 22c of the curved portion 22b is provided in a portion of the cut TC constituting the curved portion 22b of the opening portion 22 (an apex portion of the curved portion 22b of the grabbing margin) overlapping in

the first direction (the X direction) (see FIG. 5).

[0059] In a manner similar to the first embodiment, in a case where the curved portion 22b of the opening portion 22 is formed by the continuous cut CC, the curved portion 22b of the grabbing margin that is formed to correspond to the curved portion 22b of the opening portion 22 may be folded over, and the retrieval opening 20 may be torn-opened during manufacturing of or before the use of the sheet package 100 (see FIG. 3). In contrast, in the modified embodiment of the first embodiment, the cut TC constituting the curved portion 22b includes the tie portion 22c, and therefore, the curved portions 22b can be prevented from being folded over (see FIG. 5).

[0060] In the curved portion of the grabbing margin that is formed to correspond to the curved portion 22b of the opening portion 22, a portion (an apex portion of the curved portion 22b of the grabbing margin) overlapping in the first direction (the X direction) is most likely to be folded over. For this issue, in the modified embodiment of the first embodiment, the tie portion 22c of the cut TC constituting the curved portion 22b is provided on the extension line of the slit 21 in the first direction (the X direction), and therefore, such folding over of the curved portion 22b of the grabbing margin can be prevented.

[0061] Alternatively, the tie portion 22c of the cut TC may be provided at a position that does not overlap with the extension line of the slit 21 in the first direction (the X direction) (i.e., at a position that is shifted from the extension line of the slit 21). In this case, the curved portion of the grabbing margin that is formed to correspond to the curved portion 22b of the opening portion 22 can be readily grabbed with fingers of a hand, and therefore, even in a case where the cut TC has the tie portion 22c, the openability of the retrieval opening 20 is improved.

[0062] FIG. 6 is a drawing of a sheet package 100 according to a second embodiment as seen from above in the height direction. FIG. 7 is an enlarged drawing of a portion of a retrieval opening of the sheet package as illustrated in FIG. 6. In the sheet package 100 according to the second embodiment, in the second embodiment, a slit 21 and opening portions 22 of a retrieval opening 20 are enclosed by perforations M. In other words, the retrieval opening 20 is formed in an area enclosed by the continuous perforations M, and the slit 21 and the opening portions 22 are arranged in this area.

[0063] Specifically, the slit 21 enclosed by the perforations M, together with the opening portions 22, has a width W2 in the second direction (the Y direction) (see FIG. 6). The width W2 of the slit 21 is preferably greater than or equal to 1% of the dimension (the width W1) of the sheet ST. The slit 21 enclosed by the perforations M, together with the opening portion 22, has a width W3 greater than the width W2 and is continuous with the end portion 21a of the slit 21 (see FIG. 7).

[0064] In the sheet package 100 according to the second embodiment, the slit 21 and the opening portions 22 of the retrieval opening 20 are enclosed by the continuous perforations M, and therefore, by tearing the perforations M, a single grabbing margin can be formed for the retrieval opening 20. Therefore, in the second embodiment, after the retrieval opening 20 is torn-opened, an occurrence of multiple torn pieces can be prevented. In addition, the retrieval opening 20 can be torn-opened by just grabbing the single grabbing margin for the retrieval opening 20, and therefore, the retrieval opening 20 can be readily torn-opened (see FIG. 6 and FIG. 7).

[0065] Also, in the second embodiment, the slit 21 constitutes a portion of the retrieval opening 20 that has the width W2 in the second direction (the Y direction), so that the torn-opened retrieval opening 20 (OP) can be readily opened with less difficulty. Therefore, according to the second embodiment, this makes it still easier to take out the sheet ST from the retrieval opening OP (e.g., take out the first sheet ST (of the sheet stacked body SL) contained in the packaging bag 10).

[0066] Also, in the second embodiment, the friction force (or the resistance force) applied to (the slit 21) of the retrieval opening 20 decreases when a sheet ST is taken out (or pulled out) from the retrieval opening 20 (OP) at the time of use. Therefore, according to the second embodiment, even when the remaining sheets ST decrease at the time of use, the lift up of the packaging bag 10 can be prevented with a high degree of accuracy.

[0067] Also, in the second embodiment, as explained above, in the retrieval opening 20, the width W3 of the opening portion 22 is greater than the width W2 of the slit 21. In other words, in the retrieval opening 20, a portion for forming the opening portion 22 can form a grabbing margin of which an end portion 20b is wider than a center portion 20a of the retrieval opening 20. Therefore, in the second embodiment, even when the opening portions 22 are provided in the end portions 21a of the slit 21 of the retrieval opening 20, the retrieval opening 20 can be readily torn-opened by tear-opening the retrieval opening 20 while grabbing the grabbing margin corresponding to the opening portion 22.

Example

[0068] Hereinafter, the present invention is further explained in a more specific manner with reference to Examples. The Examples and the Comparative Examples were evaluated in the following test.

[Sheet package (sample)]

[0069] As a sample, a sheet package 100 in which a sheet stacked body SL including multiple stacked sheets ST were packed in a packaging bag 10 was prepared (see FIG. 1, FIG. 8). As the sheet stacked body SL, tissue paper (the

basis weight: 10.7 g/m², paper thickness: 110 μm, the number of plies: 2 plies, the number of sets: 150 sets (300 sheets), dimensions: a bulk (height) of about 40 mm, a width L1 (a horizontal direction) of about 179 mm, and a width W1 (a vertical direction) of about 101 mm) in which sheets ST are alternately folded and stacked in a pop-up manner to allow each set to be pulled out was used. Also, the sheet stacked body SL was contained in the packaging bag 10 so that the stacking direction (the SD direction) was in the height direction (the Z direction) of the sheet package 100 (see FIG. 1 and FIG. 8). As the material of the packaging bag 10, polyethylene (PE) with a thickness of 50 μm was used. The form of the package of the packaging bag 10 was such that both side surfaces 15, 16 of the sheet package 100 were sealed by caramel packaging (seal portions 30, 40 were formed). The dimensions of the packaging bag 10 constituting the sheet package 100 were about 181 mm in the longitudinal direction (the X direction), about 101 mm in the depth direction (the Y direction), and about 40 mm in the height direction (the Z direction). Also, a retrieval opening 20 (perforations M) extending in the first direction (the X direction) was formed in an upper surface 11 of the packaging bag 10.

[Pull-through resistance value]

[0070] Pull-through resistance values of the sheet package 100 were confirmed. In the confirmation of the pull-through resistance values, the above sample (the sheet package 100) was placed on a flat surface, and about half of the first set of tissue paper (sheets ST) was pulled out from the retrieval opening 20 (OP) of the packaging bag 10. The upper tip (the center portion in the longitudinal direction (the X direction) of the sheet package 100) of the pulled out sheets ST was pinched by a bulldog clip (manufactured by KOKUYO Co., Ltd., "Cli-17"). The hook of a push-pull gauge (manufactured by Imada Co., Ltd., model number: Z2-20) was passed through one hole of the handle portion of the bulldog clip, and a resistance force (unit: gf) was measured when tissue paper was pulled out in a direction perpendicular to the upper surface 11 of the packaging bag 10 (the Z direction) with a constant speed over a period of time of 0.4 to 0.6 seconds. The evaluation criteria of the pull-through resistance value were such that, in a case where the resistance force against tissue paper being pulled out was smaller than or equal to 200 gf, the sample in question was evaluated as "good" (the sheets ST could be taken out without difficulty), and in a case where the resistance force against tissue paper being pulled out was greater than 200 gf, the sample in question was evaluated as "poor" (it was difficult to take out the sheets ST).

[Initial take-out property]

[0071] The initial take-out property of the sheet package 100 was confirmed. In the confirmation of the (initial) take-out property, the ease of taking out the first sheet ST of the sheet stacked body SL through the torn-opened retrieval opening 20 (OP) of the packaging bag 10 from the sheet stacked body SL contained in the packaging bag 10 of the sheet package 100 was evaluated. The (initial) take-out property was evaluated according to the following criteria. In a case where the evaluation result of the (initial) take-out property was greater than or equal to 3, the sample in question was evaluated as "good" (sheets ST could be taken out without difficulty), and in a case where the evaluation result of the (initial) take-out property was smaller than 3, the sample in question was evaluated as "poor" (it was difficult to take out sheets ST).

- 5: The first set was very easy to grab.
- 4: The first set was easy to grab.
- 3: The first set could be grabbed.
- 2: The first set could be grabbed, but was difficult to grab.
- 1: The first set could be grabbed, but was very difficult to grab.

[Non-dropping property]

[0072] The non-dropping property of the sheets ST contained in the packaging bag 10 of the sheet package 100 was confirmed. In the confirmation of the non-dropping property, whether the sheets ST were prevented from dropping onto the inside of the packaging bag 10 (the non-dropping property) when the sheets ST were pulled out through the retrieval opening 20 of the packaging bag 10 from the sheet stacked body SL was evaluated. The non-dropping property was evaluated according to the following criteria. In a case where the evaluation result of the non-dropping property was greater than or equal to 3, the sample in question was evaluated as "good" (sheets ST were less likely to drop), and in a case where the evaluation result of the non-dropping property was smaller than 3, the sample in question was evaluated as "poor" (sheets ST easily dropped).

- 5: The sheets ST did not drop.
- 4: The sheets ST dropped once to three times, inclusive.

- 3: The sheets ST dropped four to six times, inclusive.
- 2: The sheets ST dropped seven to nine times, inclusive.
- 1: The sheets ST dropped 10 times or more.

[Non-lift up property]

[0073] The non-lift up property of the packaging bag 10 containing the sheets ST of the sheet package 100 was confirmed. In the confirmation of the non-lift up property, whether the packaging bag 10 was prevented from lifting up (the non-lift up property) when the sheets ST were pulled out through the retrieval opening 20 of the sheet package 100 from the sheet stacked body SL was evaluated. The non-lift up property was evaluated according to the following criteria. In a case where the evaluation result of the non-lift up property was greater than or equal to 3, the sample in question was evaluated as "good" (sheets ST were less likely to lift up), and in a case where the evaluation result of the non-lift up property was smaller than 3, the sample in question was evaluated as "poor" (sheets ST easily lifted up).

- 5: The packaging bag 10 did not lift up.
- 4: When the number of sets of sheets ST remaining was one to three, inclusive, the packaging bag 10 lifted up.
- 3: When the number of sets of sheets ST remaining was four to six, inclusive, the packaging bag 10 lifted up.
- 2: When the number of sets of sheets ST remaining was seven to nine, inclusive, the packaging bag 10 lifted up.
- 1: When the number of sets of sheets ST remaining was greater than or equal to ten, the packaging bag 10 lifted up.

[Openability]

[0074] The openability of the packaging bag 10 of the sheet package 100 was confirmed. In the confirmation of the openability, the ease of tearing the perforations M in the first direction (the X direction) by grabbing the end portion 20b of the retrieval opening 20 (the grabbing margin) was evaluated. The openability was evaluated according to the following criteria. In a case where the evaluation result of the openability was greater than or equal to 3, the sample in question was evaluated as "good" (the retrieval opening 20 was readily torn-opened), and in a case where the evaluation result of the openability was smaller than 3, the sample in question was evaluated as "poor" (it was difficult to tearopen the retrieval opening 20).

[0075] 5: The end portion 20b of the retrieval opening 20 (the grabbing margin) could be readily grabbed with fingers of a hand, and there was a single torn piece after the retrieval opening 20 was torn-opened.

[0076] 4: The end portion 20b of the retrieval opening 20 (the grabbing margin) could be grabbed with fingers of a hand, and there was a single fragment after the retrieval opening 20 was torn-opened.

[0077] 3: The end portion 20b of the retrieval opening 20 (the grabbing margin) could be grabbed with fingers of a hand, but there were two torn pieces after the retrieval opening 20 was torn-opened.

[0078] 2: The end portion 20b of the retrieval opening 20 (the grabbing margin) was difficult to grab with fingers of a hand.

[0079] 1: The end portion 20b of the retrieval opening 20 (the grabbing margin) could not be grabbed with fingers of a hand.

[0080] Hereinafter, Examples and Comparative Example are explained.

[Example 1]

[0081] In a sheet package 100, a slit 21 extending in the first direction (the X direction) and opening portions 22 (openings) provided continuously to both end portions 21a (both ends) of the slit 21 were provided in a retrieval opening 20. In the second direction (the Y direction), the width W3 of the opening portion 22 was greater than the width W2 of the slit 21. The shape of the slit 21 of the retrieval opening 20 was a straight line, and the shapes of the opening portions 22 were fan shapes. The dimensions of the retrieval opening 20 were such that the length L2 in the first direction (the X direction) was about 134 mm. The dimensions of the slit 21 were such that the length L3 in the first direction (the X direction) was about 114 mm and the width W2 in the second direction (the Y direction) was about 0.5 mm. Further, the dimensions of the opening portion 22 were such that the length in the first direction (the X direction) was 10 mm and the width W3 in the second direction (the Y direction) was about 15.5 mm at the maximum. The rate of the length L2 of the retrieval opening 20 with respect to the length L1 of the sheet ST was about 75% (see FIG. 1 and FIG. 2). The pull-through resistance, the (initial) take-out property, the non-dropping property, and the non-lift up property of this sample were evaluated. The results were shown in Table 1.

[Example 2]

[0082] This sample was evaluated in a manner similarly with Example 1 except that, with the sheet package 100, the

dimensions of the retrieval opening 20 were configured such that the length L2 in the first direction (the X direction) was about 116 mm, the dimensions of the slit 21 were configured such that the length L3 in the first direction (the X direction) was about 96 mm, and the rate of the length L2 of the retrieval opening 20 with respect to the length L1 of the sheet ST was about 65%. The results were shown in Table 1.

[Example 3]

[0083] This sample was evaluated in a manner similarly with Example 1 except that, with the sheet package 100, as illustrated in FIG. 6 and FIG. 7, the shape of the slit 21 of the retrieval opening 20 was a shape of an elongated rectangle, the opening portion 22 was in a fan shape, the dimensions of the slit 21 were configured such that the length L3 in the first direction (the X direction) was about 67 mm, the width W2 in the second direction (the Y direction) was about 5 mm, the dimensions of the opening portion 22 were configured such that the length in the first direction (the X direction) was about 67 mm, the width W3 in the second direction (the Y direction) was about 15.5 mm at the maximum, and the curved portion 22b of the opening portion 22 was formed by the continuous cut CC. The results were shown in Table 1.

[Example 4]

[0084] This sample was evaluated in a manner similarly with Example 3 except that, with the sheet package 100, the dimension of the retrieval opening 20 were configured such that the length L2 in the first direction (the X direction) was about 116 mm, the dimensions of the slit 21 were configured such that the length L3 in the first direction (the X direction) was about 49 mm, and the rate of the length L2 of the retrieval opening 20 with respect to the length L1 of the sheet ST was about 65%. The results were shown in Table 1.

[Example 5]

[0085] This sample was evaluated in a manner similarly with Example 3 except that, with the sheet package 100, as illustrated in FIG. 5, the curved portion 22b of the opening portion 22 was formed by the cut TC having the tie portion 22c, and the tie portion 22c (the curved portion tie) of about 0.5 mm was provided in a portion (an apex portion of the curved portion 22b of the grabbing margin) overlapping in the first direction (the X direction). The results were shown in Table 1.

[Comparative Example 1]

[0086] This sample was evaluated in a manner similarly with Example 1 except that, with the sheet package 100, as illustrated in FIG. 8, only the slit 21 was formed in the retrieval opening 20 in the straight line shape (i.e., the opening portion 22 was not formed), the dimensions of the retrieval opening 20 (the slit 21) were configured such that the length in the first direction (the X direction) was about 134 mm and the width in the second direction (the Y direction) was about 0.5 mm. The results were shown in Table 1.

[Reference Example 1]

[0087] This sample was evaluated in a manner similarly with Comparative Example 1 except that, with the sheet package 100, the dimensions of the retrieval opening 20 (the slit 21) were configured such that the width in the second direction (the Y direction) was about 5 mm. The results were shown in Table 1.

[Table 1]

	Example 1	Example 2	Example 3	Example 4	Example 5	Comparative Example 1	Reference Example 1
Slit	Straight line	Straight line	Rectangle	Rectangle	Rectangle	Straight line	Rectangle
Opening	Both ends	Both ends	Both ends	Both ends	Both ends	-	-
Length of retrieval opening (%)	75	65	75	65	75	75	75

(continued)

	Example 1	Example 2	Example 3	Example 4	Example 5	Comparative Example 1	Reference Example 1
Curved portion tie (mm)	-	-	-	-	0.5	-	-
Pull-through resistance value (gf)	116	154	150	144	132	211	121
(Initial) take-out property	4	3	5	4	5	1	3
Non-dropping property	4	5	4	5	4	1	4
Non-lift up property	4	3	5	4	5	1	4
Openability	3	3	5	5	4	1	2

[0088] As can be seen from Table 1, the sheet package 100 in which the retrieval opening 20 formed in the upper surface 11 of the packaging bag 10 includes the opening portions 22 that are continuous with both end portions 21a of the slit 21 and the width W3 of the opening portion 22 in the second direction (the Y direction) is greater than the width W2 of the slit 21 achieved good results in all of the pull-through resistance, the (initial) take-out property, the non-dropping property, the non-lift up property, and the openability (Examples 1 to 5).

[0089] In contrast, the sheet package 100 in which only the slit 21, of which the width in the second direction (the Y direction) was about 0.5 mm, was formed (i.e., the opening portion 22 was not formed) in the retrieval opening 20 achieved "poor results" in all of the pull-through resistance, the (initial) take-out property, the non-dropping property, the non-lift up property, and the openability (Comparative Example 1).

[0090] Also, the sheet package 100 in which only the slit 21, of which the width in the second direction (the Y direction) was about 5 mm, was formed (i.e., the opening portions 22 wider than the slit 21 were not formed in the end portions 21a of the slit 21) in the retrieval opening 20 achieved "poor results" in the openability (Reference Example 1).

[0091] Also, the opening portions 22 wider than the slit 21 were formed in the end portions 21a of the slit 21, so that even when the length L2 of the retrieval opening 20 in the first direction (the X direction) (the area where the retrieval opening 20 was formed) was reduced (i.e., the rate of the length L2 of the retrieval opening 20 with respect to the length L1 of the packaging bag 10 in the first direction (the X direction) decreases from about 75% to about 65%), the non-dropping property improved while the non-lift up property was maintained (Example 2, Example 4).

[0092] Further, since the curved portion 22b of the opening portion 22 was formed by the cut TC having the tie portion 22c, the curved portion 22b can be prevented from being folded over (i.e., the retrieval opening 20 is prevented from being torn-opened during manufacturing of or before the use of the sheet package 100) (Example 5).

[0093] From these results, it can be understood that the sheet package in which the retrieval opening formed in the upper surface of the packaging bag includes the slit extending in the first direction and the opening portion continuous with one of the end portions of the slit, wherein the width of the opening portion is greater than the width of the slit in the second direction crossing the first direction, is advantageous in allowing sheets to be taken out and allowing the retrieval opening to be torn-opened.

[0094] The embodiments of the present invention have been described above, but the present invention is not limited to specific embodiments, and various modifications and changes can be made within the scope of the invention described in the claims.

[0095] Hereinafter, preferred aspects of the present invention are supplementarily described.

[0096] A first aspect according to the present invention is a sheet package including a plurality of sheets stacked, a packaging bag containing the plurality of sheets, and a retrieval opening formed in an upper surface of the packaging bag to allow one of the plurality of sheets to be pulled through, wherein the retrieval opening includes a slit extending in a first direction and an opening portion continuous with at least one end portion of the slit, wherein, in a second direction crossing the first direction, a width of the opening portion is greater than a width of the slit.

[0097] In this specification, the opening portion continuous with one of the end portions of the slit includes: a case where the opening portion is provided in any one end portion of both end portions of the slit and is continuous with the any one end portion; or a case where the opening portions are provided in both end portions of the slit and are continuous with the both end portions. Also, any of the width of the slit and the width of the opening portion constituting the retrieval

opening means a width in the second direction crossing the first direction.

[0098] In the first aspect, in the retrieval opening formed in the upper surface of the packaging bag, the opening portion continuous with one of the end portions of the slit is provided to have a width greater than the width of the slit. For this reason, when the thin paper (the sheet) is pulled out from the inside of the packaging bag, the sheet is less likely to get caught by the retrieval opening and the sheet is less likely to be torn.

[0099] In particular, in a conventional sheet package in which a retrieval opening is constituted by only a slit, the retrieval opening is narrow, and therefore, the sheet tends to be clogged in the end portion of the retrieval opening, and the sheet tends to be rubbed against the end portion of the retrieval opening. In contrast, in the first aspect, at least one of end portions (opening portion) is wider than the center portion (the slit) of the retrieval opening formed in the upper surface of the packaging bag, and therefore, even when the retrieval opening is narrow, the sheets are less likely to be clogged in the end portion of the retrieval opening, and rubbing of the end portion of the retrieval opening and the sheets can be alleviated. Therefore, in the first aspect, when the sheet is pulled out, the sheet is prevented from getting caught in the end portion of the retrieval opening, and is prevented from being torn.

[0100] Also, in the first aspect, the opening portion continuous with one of the end portions of the slit can constitute the buffer portion of the retrieval opening. Accordingly, when the slit of the retrieval opening that has been torn-opened is opened with a fingertip, the stress applied to the retrieval opening and its surroundings can be released (or dispersed) to the opening portion (the buffer portion). Therefore, in the first aspect, the slit that has been torn-opened can be readily opened with a fingertip, and this makes it easier to take out sheets from the inside of the packaging bag (e.g. take out the first sheet contained in the packaging bag).

[0101] Also, in the first aspect, due to the presence of the opening portion continuous with one of the end portions of the slit (the buffer portion), the surroundings of the slit can be bent according to the weight of the sheet held in the center portion (the slit) of the retrieval opening (or the slit can be deformed according to the weight of the sheet) at the time of use. Accordingly, in the first aspect, the holding force for holding the sheets in the retrieval opening is maintained, and dropping of the sheets onto the inside of the packaging bag (hereinafter referred to as "dropping of the sheets") can be prevented at the time of use.

[0102] Also, in the first aspect, as explained above, rubbing of the end portion of the retrieval opening and the sheets is alleviated, so that the end portion of the retrieval opening of the sheet package is less likely to be torn at the time of use. Also from this point of view, the holding force for holding the sheet in the retrieval opening is inhibited from decreasing, and therefore, dropping of the sheets onto the inside of the packaging bag (hereinafter referred to as dropping of the sheets) can be prevented at the time of use.

[0103] Also, in the first aspect, the friction force (or the resistance force) applied to the slit when the sheets are taken out (or pulled out) from the slit of the retrieval opening at the time of use can be released (or dispersed) to the opening portion (the buffer portion). Therefore, in the first aspect, even when the remaining sheets decreases (i.e., the weight of the sheet package decreases) at the time of use, lifting up of the packaging bag altogether (hereinafter referred to as "lift up of the packaging bag") can be prevented when the sheets are taken out.

[0104] Also, in the first aspect, the opening portion wider than the slit is formed in at least one end portion of the slit, so that even when the length of the retrieval opening (the forming area of the retrieval opening) in the first direction is reduced, the dropping of the sheets can be prevented further more greatly while the lift up of the packaging bag is prevented.

[0105] Further, in the first aspect, the opening portion having a width greater than the width of the slit is provided in the retrieval opening, so that the state inside of the sheet package can be visually observed through the retrieval opening formed in the upper surface of the packaging bag. Therefore, even in a case where the sheets are contained in the packaging bag as in the sheet package, the remaining quantity and the like of the sheets can be confirmed.

[0106] A second aspect according to the present invention is a sheet package in which the width of the opening portion increases away from the slit in the first direction. In this specification, the increase in the width of the opening portion away from the slit in the first direction means that the retrieval opening formed in the upper surface of the packaging bag becomes gradually wider from the center portion (the slit) side of the retrieval opening to the end portion side of the retrieval opening (the opening portion).

[0107] In the second aspect, the width of the opening portion increases away from the slit in the first direction, so that the stress applied to the center portion (the slit) of the retrieval opening and its surroundings can be gradually released (or dispersed) to the end portion of the retrieval opening (the opening portion) serving as the buffer portion. Also, the surroundings of the slit can be adequately bent according to the stress applied to the center portion (the slit) and the like of the retrieval opening. Therefore, in the second aspect, while the sheets are allowed to be readily taken out, the dropping of the sheets and the lift up of the packaging bag can be prevented in a well-balanced manner.

[0108] A third aspect according to the present invention is a sheet package in which the opening portion includes a curved portion that protrudes in a direction away from the slit in the first direction. In this specification, the curved portion that protrudes in a direction away from the slit means that, in the retrieval opening formed in the upper surface of the packaging bag, the end portion of the retrieval opening provided with the opening portion is curved in a protruding shape

from the center portion (the slit) side of the retrieval opening to the end portion side of the retrieval opening (the opening portion).

[0109] In the third aspect, the opening portion provided in the retrieval opening has such a curved portion, so that the sheets are less likely to be clogged in the end portion of the retrieval opening, and rubbing of the end portion of the retrieval opening and the sheets can be alleviated. In addition, in the third aspect, a portion in which the opening portion having such a curved portion in the retrieval opening can constitute the grabbing margin. Therefore, in the third aspect, even when, in the retrieval opening, the opening portion is provided in at least one end portion of the slit, a reduction in the openability of the retrieval opening can be prevented due to the grabbing margin corresponding to the opening portion.

[0110] Also, in the third aspect, in a case where a portion forming the opening portion in the retrieval opening constitutes the grabbing margin, the curved portion can also be formed in the grabbing margin to correspond to the curved portion of the opening portion. Accordingly, when the retrieval opening is to be torn-opened, the grabbing margin can be readily grabbed by grabbing the curved portion of the grabbing margin. Accordingly, in the third aspect, in a case where the opening portion continuous with one of the end portions of the slit is provided in the retrieval opening, the openability of the retrieval opening can be improved.

[0111] A fourth aspect according to the present invention is a sheet package in which the curved portion is formed by a continuous cut. In this specification, the continuous cut means that the curved portion is formed by only the cut portion, and is not provided with any tie portion.

[0112] In the fourth aspect, the curved portion of the opening portion is formed by the continuous cut, so that when the retrieval opening is torn-opened, the curved portion of the grabbing margin that is formed to correspond to the curved portion of the opening portion can be readily grabbed with fingers of a hand. Therefore, in the fourth aspect, in a case where the opening portion continuous with one of the end portions of the slit is provided in the retrieval opening, the openability of the retrieval opening can be further improved.

[0113] A fifth aspect according to the present invention is a sheet package in which the curved portion is formed by a cut having a tie portion. In this specification, the cut having the tie portion means that the cut is not formed continuously, and the curved portion of the grabbing margin that is formed to correspond to the curved portion of the opening portion is connected via the tie portion to an area of the upper surface of the package other than the grabbing margin.

[0114] In a case where the curved portion of the opening portion is formed by the continuous cut as in the fourth aspect explained above, the curved portion of the grabbing margin that is formed to correspond to the curved portion of the opening portion may be folded over, and the retrieval opening may be torn-opened during manufacturing of or before the use of the sheet package. In contrast, in the fifth aspect, the cut constituting the curved portion has a tie portion, and therefore, the curved portion can be prevented from being folded over as explained above.

[0115] A sixth aspect according to the present invention is a sheet package in which the tie portion is provided on an extension line of the slit in the first direction. In this specification, the extension line of the slit in the first direction means a position, of the cut constituting the curved portion of the opening portion, that overlaps with the portion overlapping in the first direction (an apex portion of the curved portion of the grabbing margin).

[0116] In the curved portion of the grabbing margin that is formed to correspond to the curved portion of the opening portion, a portion (an apex portion of the curved portion of the grabbing margin) overlapping in the first direction is most likely to be folded over. In contrast, in the sixth aspect, the tie portion of the cut constituting the curved portion is provided on the extension line of the slit in the first direction, and therefore, the curved portion can be prevented from being folded over as explained above.

[0117] The tie portion of the cut may be provided at a position that does not overlap with the extension line of the slit in the first direction (i.e., at a position that is shifted from the extension line of the slit). In this case, the curved portion of the grabbing margin that is formed to correspond to the curved portion of the opening portion can be readily grabbed with fingers of a hand, and therefore, even in a case where the cut has the tie portion, the openability of the retrieval opening is improved.

[0118] A seventh aspect according to the present invention is a sheet package in which the slit and the opening portion are formed by continuous perforations. In this specification, the continuous perforations means that cut portions constituting perforations and tie portions are alternately arranged.

[0119] In the seventh aspect, the slit and the opening portion constituting the retrieval opening are formed by continuous perforations, and therefore, by tearing the perforations, the retrieval opening in which the slit and the opening portion are continuous can be readily formed.

[0120] An eighth aspect according to the present invention is a sheet package in which the slit and the opening portion are enclosed by the perforations. In this specification, being enclosed by the perforations means that the slit and the opening portion of the retrieval opening are present in an area enclosed by continuous perforations.

[0121] In the eighth aspect, the slit and the opening portion constituting the retrieval opening are enclosed by continuous perforations, and therefore, by tearing the perforations, a single grabbing margin can be made for the retrieval opening. Therefore, in the eighth aspect, after the retrieval opening is torn-opened, an occurrence of multiple torn pieces can be prevented. In addition, the retrieval opening can be torn-opened by just grabbing the single grabbing margin for the

retrieval opening, and therefore, the retrieval opening can be readily torn-opened.

[0122] Also, in the eighth aspect, the width of the opening portion of the retrieval opening is greater than the width of the slit, so that, in a portion where the opening portion is formed in the retrieval opening, the grabbing margin of which at least one end portion is wider than the center portion of the retrieval opening can be formed. Therefore, in the eighth aspect, even when the opening portion is provided in at least one end portion of the slit of the retrieval opening, the openability of the retrieval opening can be prevented from decreasing by tear-opening the retrieval opening by grabbing the grabbing margin corresponding to the opening portion.

[0123] The present application claims priority to Japanese Patent Application No. 2018-223499 filed on November 29, 2018, the entire content of which is incorporated herein by reference.

DESCRIPTION OF THE REFERENCE NUMERALS

[0124]

- 100 sheet package
- ST sheet (sanitary thin paper)
- SL sheet stacked body
- 10 packaging bag
- 11 upper surface
- 11a center
- 11b end portion
- 12 lower surface
- 13 front surface
- 14 back surface
- 15 side surface
- 16 side surface
- 20 retrieval opening
- 21 slit
- 21a end portion
- 22 opening portion
- 22a inclined portion
- 22b curved portion
- 22c tie portion
- 30 seal portion
- 40 seal portion

Claims

1. A sheet package comprising:

a plurality of sheets stacked;
a packaging bag containing the plurality of sheets; and
a retrieval opening formed in an upper surface of the packaging bag to allow one of the plurality of sheets to be pulled through,
wherein the retrieval opening includes:

a slit extending in a first direction; and
an opening portion continuous with at least one end portion of the slit, and

wherein, in a second direction crossing the first direction, a width of the opening portion is greater than a width of the slit.

2. The sheet package according to claim 1, wherein the width of the opening portion increases away from the slit in the first direction.

3. The sheet package according to claim 1 or 2, wherein the opening portion includes a curved portion that protrudes in a direction away from the slit in the first direction.

4. The sheet package according to claim 3,
wherein the curved portion is formed by a continuous cut.

5 5. The sheet package according to claim 3,
wherein the curved portion is formed by a cut having a tie portion.

6. The sheet package according to claim 5,
wherein the tie portion is provided on an extension line of the slit in the first direction.

10 7. The sheet package according to any one of claims 1 to 6, wherein the slit and the opening portion are formed by
successive perforations.

15 8. The sheet package according to claim 7,
wherein the slit and the opening portion are enclosed by the perforations.

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FIG.1

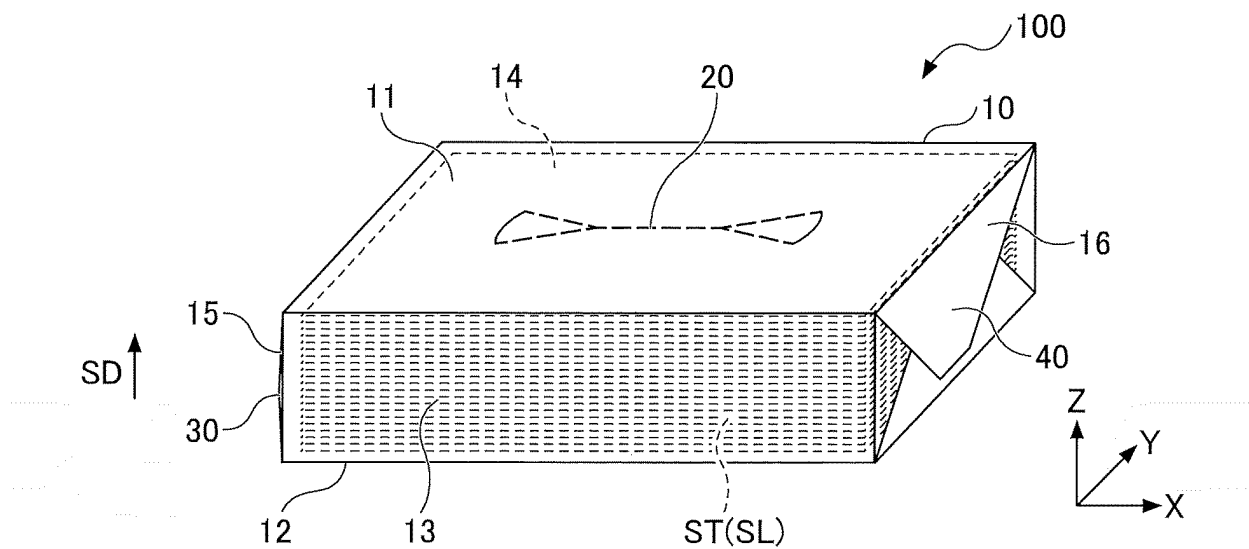


FIG.2

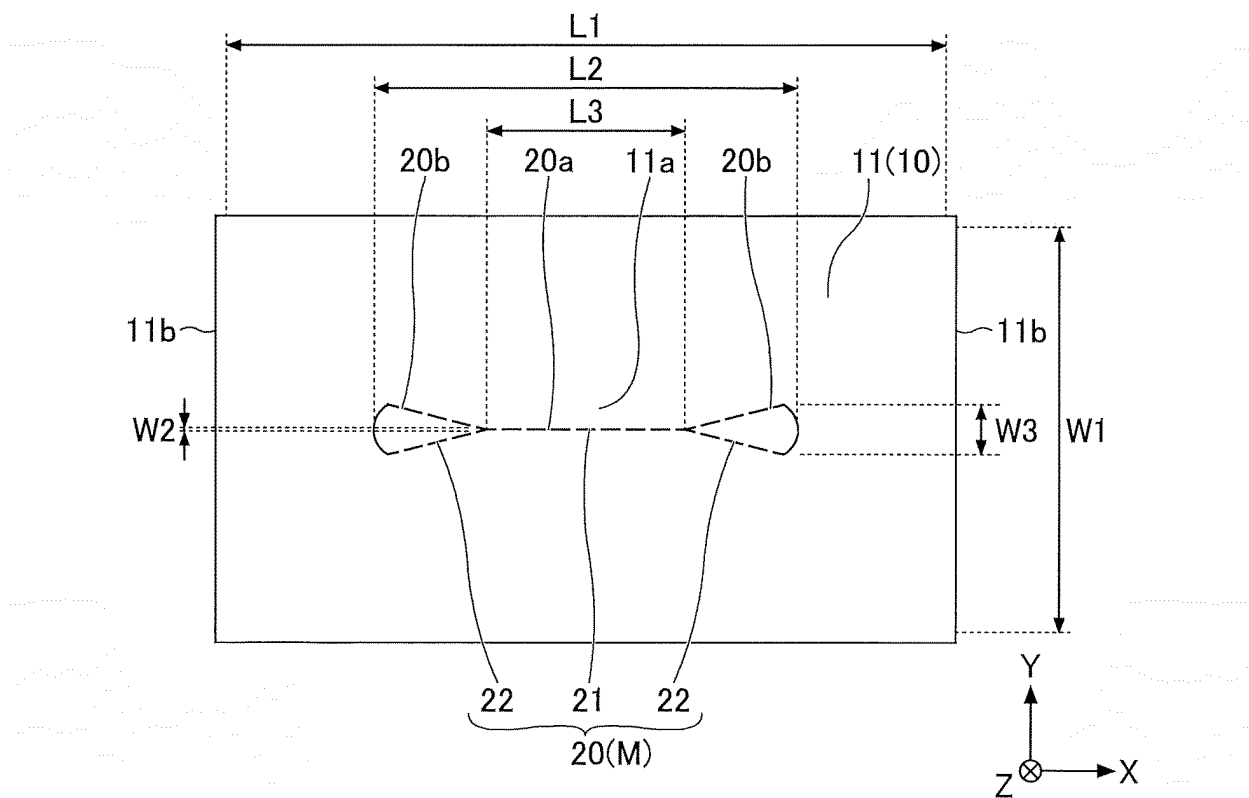


FIG.3

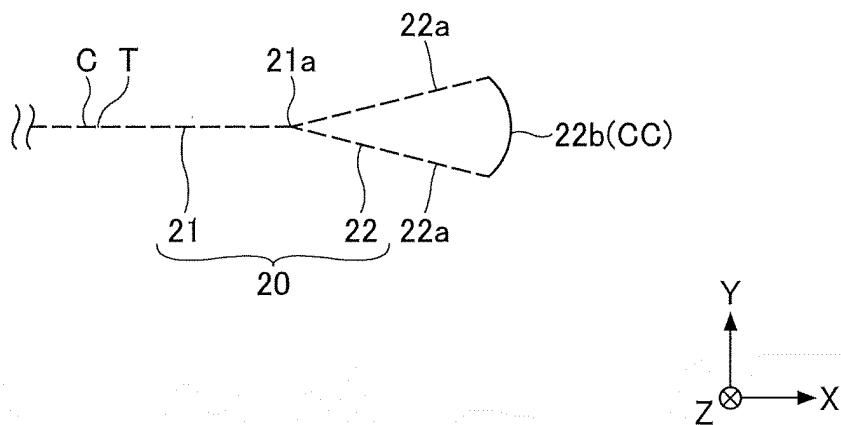


FIG.4

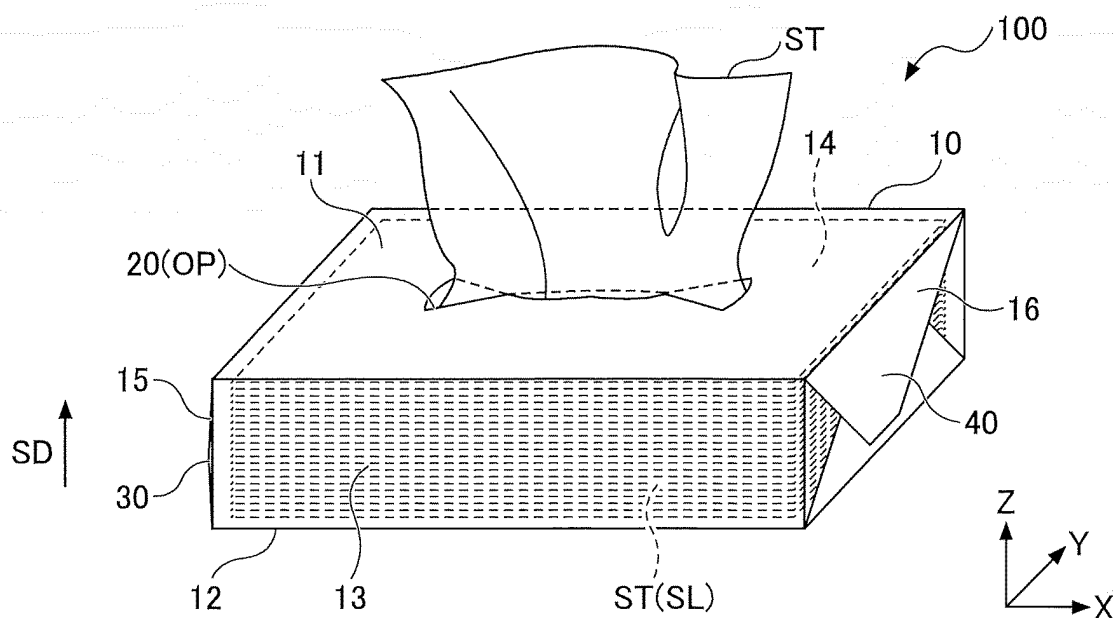


FIG.5

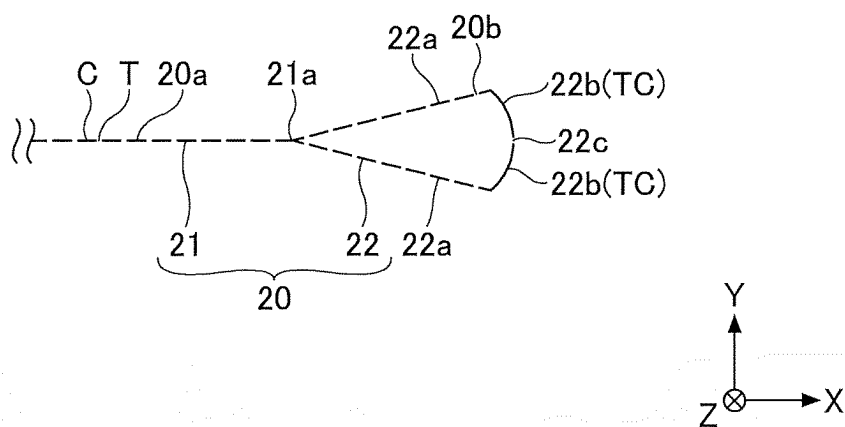


FIG.6

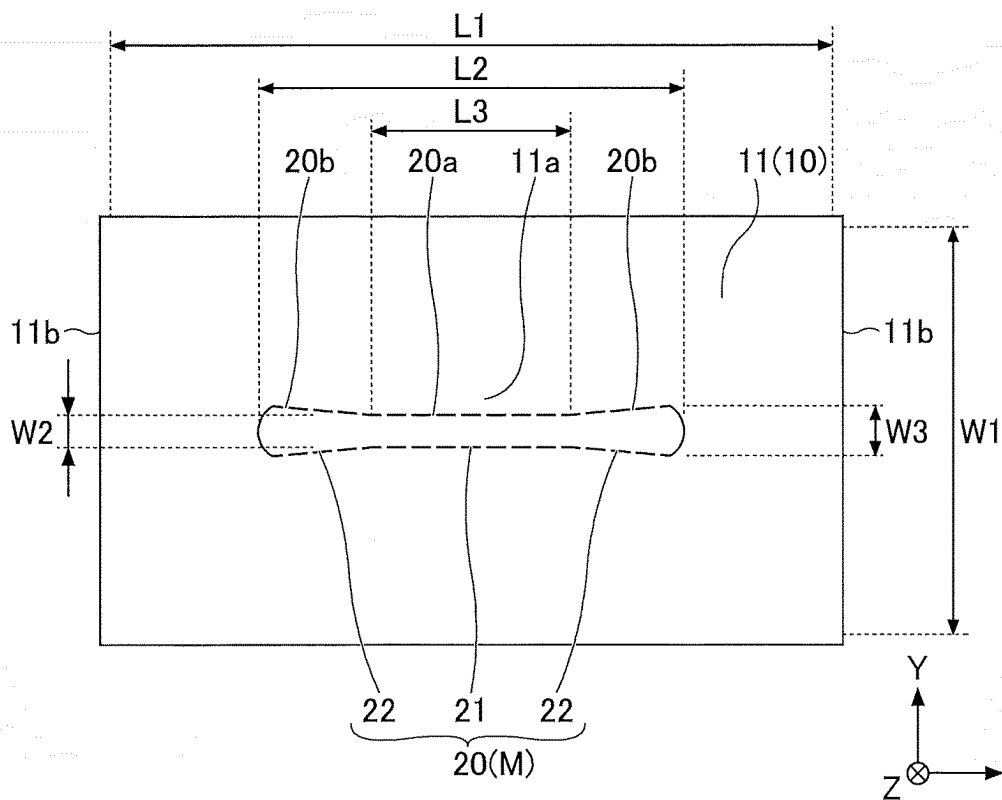


FIG.7

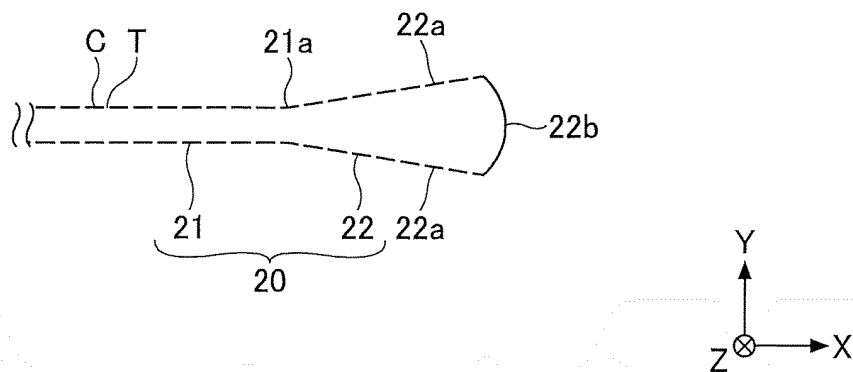
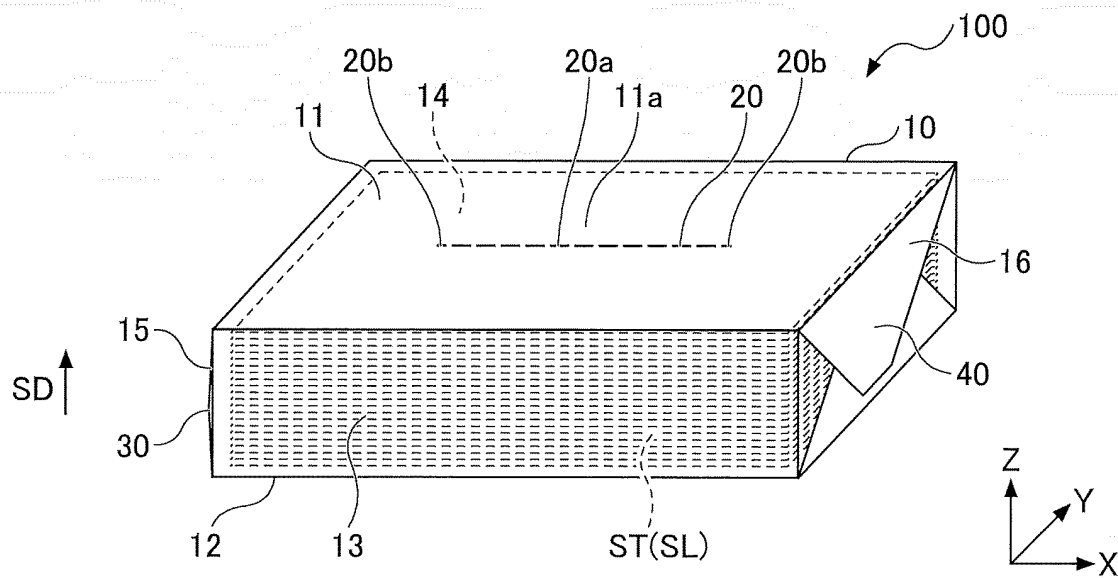


FIG.8



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2019/045313

A. CLASSIFICATION OF SUBJECT MATTER

B65D 83/08 (2006,01) i; A47K 10/20 (2006,01) i
 FI: B65D83/08 B; A47KI0/20 B

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 B65D83/08; A47K10/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Published examined utility model applications of Japan 1922-1996

Published unexamined utility model applications of Japan 1971-2020

Registered utility model specifications of Japan 1996-2020

Published registered utility model applications of Japan 1994-2020

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2018-172145 A (DAIO PAPER CORP.) 08.11.2018 (2018-11-08) paragraphs [0015]-[0019], [0024], fig. 6	1-3, 5-8
Y	paragraphs [0015]-[0019], [0024], fig. 6	4
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 065580/1983 (Laid-open No. 172182/1984) (OJI TISSUE HANBAI KK) 17.11.1984 (1984-11-17) specification, page 5, lines 2-6, fig. 6-7	4



Further documents are listed in the continuation of Box C.



See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
 23 January 2020 (23.01.2020)

Date of mailing of the international search report
 04 February 2020 (04.02.2020)

Name and mailing address of the ISA/
 Japan Patent Office
 3-4-3, Kasumigaseki, Chiyoda-ku,
 Tokyo 100-8915, Japan

Authorized officer

Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2019/045313

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 069684/1982 (Laid-open No. 171815/1983) (HIGASHIYAMA, Tokuo) 16.11.1983 (1983-11-16) specification, page 4, lines 12-15, fig. 1	4
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 125885/1989 (Laid-open No. 064593/1991) (NAKAMURA, Kojiro) 24.06.1991 (1991-06-24) specification, page 3, lines 5-18, fig. 1-2	1-4
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 039681/1982 (Laid-open No. 143370/1983) (SHIGEHIO, Aiko) 27.09.1983 (1983-09-27) specification, page 1, lines 16-20, fig. 1-2	1-4
A	JP 11-130167 A (OJI PAPER CO., LTD.) 18.05.1999 (1999-05-18)	1-8
A	WO 2005/108238 A1 (DAIO PAPER CORP.) 17.11.2005 (2005-11-17)	1-8
A	JP 2005-119751 A (DAIO PAPER CORP.) 12.05.2005 (2005-05-12)	1-8
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A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 120386/1977 (Laid-open No. 046634/1979) (JUJO PAPER CO., LTD.) 31.03.1979 (1979-03-31)	1-8

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No. PCT/JP2019/045313
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JP 58-171815 U1		16 Nov. 1983	(Family: none)	
JP 3-064593 U1		24 Jun. 1991	(Family: none)	
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			CN 1216908 A	
JP 54-046634 U1		31 Mar. 1979	(Family: none)	

REFERENCES CITED IN THE DESCRIPTION

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- JP 2018223499 A [0123]