# PACKAGE FOR VERTICAL RECEIVING

## TECHNICAL FIELD

[1] The present invention relates to a package for vertical storage, which allows various types of objects, such as foods to be stored in a refrigerator, to be stored while put in an upright position in substantially the same standard and in a volume compressed at a predetermined level, leading to maximized storage efficiency and easy discovery of the object, as well as allowing the objects to remain organized even when one is pulled out.

## BACKGROUND ART

[3] As contrasted to horizontal organizing, vertical organizing provides the benefit of easy discovery but requires installation of stationary or movable partitions in the drawer or use of a separate container in order to keep the clothes of different sizes or shapes in a stabilized position. Thus, such conventional vertical organizing is not only uneconomical but reduces the storage room as well.

[6] [PRIOR TECHNICAL DOCUMENTS]

[7] [PATENT DOCUMENTS]

[8] (Patent Document 1) Korean Patent Application Publication No. 10-2012-0130878 (published on December 4, 2012), titled "vertical organizer for dresser"

[9] (Patent Document 2) Korean Utility Model Application Publication No. 20-2011-0004690 (published on June 12, 2011), titled "package for storing clothes"

## SUMMARY

## PROBLEMS TO BE SOLVED

[10] The present invention has been conceived to address the above problems, and an object of the present invention is to provide a means for vertical storage of various objects including food preserved in a refrigerator, which may allow objects of various sizes or shapes to

be packed and stored in a substantially constant standard so that the object may stably remain in an upright position, may protect the object against contaminations, and may prevent spoilage of the organized arrangement even when some of the objects stored are pulled out.

## SOLUTIONS

[11] To achieve the above object, according to an embodiment of the present invention, there is provided a package for vertical storage, comprising a rear portion and front portions formed of a soft resin, such as vinyl, or an elastic material, such as unwoven fabric or net, to cover various objects, such as foods preserved in a refrigerator, at a predetermined width and thickness and standing the objects, hinge portions that may be folded or unfolded and that are provided between the rear portion and the front portions, a hard reinforcing sheet provided at, at least, one of the rear portion and the front portions to maintain the upright position, and a fastener fastening the object in the rear portion or the front portions while the object is wrapped.

[12] Preferably, the front portions, rear portion, and hinge portions of the package are formed of a transparent or see-through material, such as a net, or in the form of having a window or hole so that the packed object may be easily identified from outside.

[13] In a preferred embodiment, the rear portion, the front portions, and the hinge portions may be integrally formed with one another. A reinforcing sheet may be attached to at least one or both of the rear portion or the front portions through thermal or high-frequency bonding or an adhesive in order to keep in shape, or the rear portion and the front portions may be formed in a dual structure where the reinforcing sheet may be inserted.

[14] Preferably, the reinforcing sheet may be formed of a resin film or stiff paper with a predetermined thickness, and when made thin to save materials, reinforcing ribs may be formed to keep in shape further stably.

[15] More preferably, an anti-slip structure may be further provided inside the package to prevent, e.g., clothes, from being easily pulled out. The anti-slip structure may be formed of rubber, sponge, or a silicone pad with high surface friction.

[16] According to the present invention, the rear portion and the front portions may be formed of the same material, and the hinge portions may be formed of a different material with high elasticity so as to be compatible with various objects with different sizes and volumes.

[17] According to another embodiment of the present invention, there is provided a package for vertical storage, comprising a rear portion and front portions covering an object, such as a piece of clothes, at a predetermined width and thickness and standing the object and foldable hinge portions provided between the rear portion and the front portions, wherein the rear portion and the front portions are formed of a hard plastic sheet to keep the package in an upright position, and wherein a fastener is provided in the rear portion or the front portion to fasten the object in a wrapped state.

[18] According to still another embodiment of the present invention, there is provided package for vertical storage, comprising front portions formed of a soft vinyl sheet and attached to left and right sides, respectively, of a rear portion formed of a hard plastic sheet to cover an object, such as a piece of clothes or food preserved in a refrigerator, at a predetermined width and thickness and standing the object, wherein a separate reinforcing sheet is provided to be inserted into an inside of the front portions to pressurize the object when the object is received, and wherein a fastener provided in the rear portion or the front portion to fasten the object in a wrapped state.

**EFFECTS**

[19] Use of the package for vertical storage according to embodiments of the present invention may allow foods, or other objects to be packed at a substantially even width and stored in an upright position. Thus, the object may stably remain in an upright position and may be

prevented from spoilage of the organized arrangement. Further, various objects may be stored neatly in substantially the same standard. Thus, a desired object may be quickly discovered, and even when pulled out, the remaining objects may remain organized, eliminating the need of reorganizing. Further, the object is packed, shrunken at a predetermined level, allowing more space for storage to be secured.

## BRIEF DESCRIPTION OF THE DRAWINGS

[20] Fig. 1 is an expanded perspective view illustrating a package for vertical storage according to a first embodiment of the present invention;

[21] Fig. 2 is a perspective view illustrating the package of Fig. 1 is folded;

[24] Fig. 5 illustrates an example in which packages are vertically stored in a refrigerator;

[25] Fig. 6 is an expanded perspective view illustrating a package for vertical storage according to a second embodiment of the present invention;

[26] Fig. 7 is an expanded perspective view illustrating a package for vertical storage according to a third embodiment of the present invention;

[27] Fig. 8 is an expanded perspective view illustrating a package for vertical storage according to a fourth embodiment of the present invention;

[28] Fig. 9 is a perspective view illustrating a package for vertical storage according to a sixth embodiment of the present invention;

[30] Fig. 11 is an expanded perspective view illustrating a package for vertical storage according to a seventh embodiment of the present invention;

[31] Fig. 12 is a perspective view illustrating the package for vertical storage as shown in Fig. 11 is folded;

[32] Fig. 13 is an expanded perspective view illustrating a package for vertical storage according to an eighth embodiment of the present invention;

[33] Fig. 14 is a perspective view illustrating the package for vertical storage as shown in Fig. 13 is folded;

[34] Fig. 15 is an expanded perspective view illustrating a package for vertical storage according to a ninth embodiment of the present invention;

[35] Fig. 16 is a perspective view illustrating the package for vertical storage as shown in Fig. 15 is folded; and

[36] Fig. 17 is a perspective view illustrating a reinforcing sheet in a lattice frame shape.

**DETAILED DESCRIPTION OF EMBODIMENTS**

[37] Hereinafter, preferred embodiments are described in detail with reference to the accompanying drawings, without limiting the present invention.

[38] Figs. 1 to 4 illustrate a package for vertical storage according to a first embodiment of the present invention.

[39] As shown in the drawings, the package 100 according to this embodiment includes a rear portion 110 and front portions 120 and 130 formed of a soft resin material, such as transparent vinyl, and standing a to-be-packed object, such as various meats, or chopped garlic or other seasonings or spices which are stored in a refrigerator, while covering the object at a predetermined width and thickness, foldable hinge portions 140 and 150 between the rear portion 110 and the front portions 120 and 130, hard reinforcing sheets 160 provided in the rear portion 110 and the front portions 120 and 130 to allow the package 100 to maintain an upright position, and a detachable fastener 170 provided on an inner side of the front portion 120.

[40] In this embodiment, the rear portion 110, front portions 120 and 130, and hinge portions 140 and 150 of the package 100 may be formed of a soft transparent vinyl material so that the wrapped object may be easily identified with the naked eye from outside.

[41] In the instant embodiment, the rear portion 110, the front portions 120 and 130, and the hinge portions 140 and 150 are formed in a single body. The reinforcing sheets 160 are inserted in the rear portion 110 and the front portions 120 and 130 to keep in shape. In this embodiment, the rear portion 110 and the front portions 120 and 130 are formed in a dual structure, and the edges of the rear portion 110 and the front portions 120 and 130 remain joined by thermal or high frequency bonding.

[42] In this embodiment, an inner surface of the rear portion 110 and the front portions 120 and 130 has an opened side through which the reinforcing sheet 160 may be inserted or pulled out. The reinforcing sheet 160 is formed of a resin film including an anti-static vinyl of a predetermined thickness. In the case the reinforcing sheet 160 is made thin to save materials, reinforcing ribs are formed in the reinforcing sheet 160 itself in horizontal and vertical directions, allowing it to remain in a stable shape.

[43] According to the present invention, the sum of the horizontal width of the left front portion **130** and the horizontal width of the right front portion **120** is formed to be not smaller than the horizontal width of the rear portion 110, and the horizontal width of the left front portion is formed to be not larger or identical to the difference between the horizontal width of the rear portion and the horizontal width (thickness) of the hinge portion. In this embodiment, the horizontal width of the left front portion **130** is about 2/3 of the horizontal width of the rear portion 110, and the horizontal width of the right front portion **120** is about 1/2 of the horizontal width of the rear portion 110. The thickness of the hinge portion 150 formed between the rear portion 110 and the right front portion **120** is about 1/3 of the horizontal width of the rear portion 110.

[44] Meanwhile, the horizontal width (thickness) of the hinge portion 140 at the side of the right front portion 120 is the same as the horizontal width (thickness) of the left hinge portion 150.

[45] According to an embodiment of the present invention, a folding process of a vinyl or hard film or various types and materials for flexible folding and unfolding may apply to the hinge portions 140 and 150.

[46] In this embodiment, the right front portion 120 and the left front portion 130 have different horizontal widths from each other so that, when the object is wrapped, the relatively wide left front portion 130 is positioned inside, the right front portion 120 is laid over the left front portion 130, and the fastener 170 is then attached to the surface of the left front portion 130 while pulled by a proper strength of tension. Thereby, even a thin object is firmly held inside the package 100 and is prevented from sliding down.

[47] Further, in this embodiment, the degree by which the left and right front portions 120 and 130 varies depending on the thickness of the object. As the thickness of the object increases, the overlap between the left and right front portions 120 and 130 decreases.

[48] The reinforcing sheet 160 may be formed of a resin film or stiff paper. Characters or an image for advertisement or promotion purposes may be printed or a blank where the user takes notes or for attaching a separate piece of paper may be formed on an inside or outside of the reinforcing sheet 160.

[49] In this embodiment, the width of the reinforcing sheet 160 is preferably formed to be substantially the same as the vertical width of the rear portion 110 and the front portions 120 and 130. Since the reinforcing sheet 160 may simply function as a frame to keep the package 100 in an upright position, the reinforcing sheet 160 may be simply shaped as a rectangle. The inside of the reinforcing sheet 160 may be punctuated in a grid or other various patterns to reduce its weight and save materials without reducing the structural strength or hardness.

[50] In this embodiment, an adhesive tape that may be repeatedly attached or detached is used as the fastener 170. Such adhesive tape-type fastener 170 maintains substantially the same adhesivity even when attached at different positions by the volume of the object whenever used. Even though no separate fastener is provided at a portion where the fastener 170 is to be attached, the fastener 170 may be attached, as it is, to the slippery vinyl surface.

[51] In this embodiment, the package 100 further includes anti-slip structures 180 therein. The anti-slip structures 180 may be formed of rubber, sponge, or silicone pad with high surface friction. The anti-slip structures 180 may be attached at a middle, upper or lower position consecutively along the horizontal or vertical direction as well as at the corners as shown in the drawings.

[52] A method of using the package configured as above according to this embodiment is described. First, a to-be-stored object P is folded, with the package 100 unfolded on the floor, and is then placed on the unfolded package 100, and is covered by the front portions 120 and 130 that are then fastened by the fastener 170 while pressurized. Thus, the volume of the object may be easily compressed. Although the compression rate is not high as compared with that achieved by use of a compression pack that uses a vacuum cleaner to compress an object, the method may reduce wrinkles or damage to the object and may allow the object to be easily pulled out.

[53] Fig. 5 illustrates an example in which an object P, which is food to be kept frozen or refrigerated, such as meats or various seasonings or spices, is contained in a package 100 and stored in a refrigerator F according to an embodiment of the present invention. Referring to Fig. 5, the package 100 is stored, lying on a side thereof.

[54] As such, the term "vertical storing" or "vertical receiving" as used herein does not only mean that the package 100 is stored in the upright position but also means that the package 100 is vertically stored, lying on a side thereof, i.e., with one of the hinge portions 140 and 150 placed on the floor, as shown in Fig. 5.

[55] Further, the objects are neatly sorted in horizontal and vertical directions in the refrigerator, allowing them to look well organized when the drawer or refrigerator is opened and allowing the user to find his or frozen (refrigerated) food. Further, even after the food is pulled out, the remaining foods remain organized, eliminating the need of reorganizing.

[56] Meanwhile, the package according to this embodiment has an open top and bottom. Thus, the user may pull the object out of the package with one hand while holding and pressing the package with the other hand to make the rear portion 110 and front portions 120 and 130 rounded. Thus, the object may be quickly pulled out from the package even without detaching the fastener 170.

[57] Fig. 6 illustrates a package for vertical storage according to a second embodiment of the present invention. The package 100 in this embodiment differs from the package according to the embodiment shown in Figs. 1 and 2 in that the former is single-layered while the latter is double-layered. In this embodiment, a reinforcing sheet 160 is attached inside the rear portion 110 and the front portions 120 and 130 by an adhesive tape or adhesive or thermal or high frequency bonding or other methods.

[58] In this embodiment, the package 100 differs from the package according to the first embodiment in that the package 100 is single-layered but has the same function as the package according to the first embodiment. Thus, no repetitive description is given.

[59] In this embodiment, the reinforcing sheet 160 is fixed in the inside of the rear portion 110 and the front portions 120 and 130, but the present invention is not limited thereto. For example, the reinforcing sheet may be attached to be detachable from the rear portion or front portion.

[60] Fig. 7 illustrates a package 100 for vertical storage according to a third embodiment of the present invention. In this embodiment, the rear portion 110 and front portions 120 and 130 of the package 100 are formed of the same material, such as transparent

vinyl, and the hinge portions 140 and 150 are formed of a material such as a highly stretchable rubber sheet or Spandex fabric, and neighboring portions may be sewn or fused to be compatible with various objects with different sizes or volumes.

[61] In this embodiment, the content (or object) to be packed in the package 100, although its volume varies, remains same because its left-right width corresponds to the horizontal width of the rear portion 110. However, only the thickness of the package packing the object is varied as the hinge portions 140 and 150 are expanded or contracted by the volume of the content, and thus, such packages may be neatly stored and organized.

[62] Fig. 8 illustrates a package for vertical storage according to a fourth embodiment of the present invention. In this embodiment, as the fastener 170, a pair of male and female Velcro tapes are used instead of the adhesive tape used in the above embodiment. One of the pair of Velcro tapes is attached onto the front portion 130 at a side, and the other is attached onto the front portion 120 at the other side, allowing the tapes to be mutually attached or detached.

[63] In this embodiment, although the fastener 170 is shaped as a thin strap, the present invention is not limited thereto. For example, the position of attachment or number of fasteners 170 may be varied. Another example of such fastener 170 may be an elastic band, such as a known rubber ring, male and female couplers formed to be able to adjust the volume of the content, as used in, e.g., various piles or stationery or other containers or a PVC soft vinyl adhesive sheet that may be repeatedly attached and detached.

[64] Fig. 9 illustrates a package for vertical storage according to a sixth embodiment of the present invention. According to the instant embodiment, the package 100 differs from the packages according to the above embodiments in that the package in this embodiment uses a fabric net while the packages according to the above embodiments use a transparent vinyl material. The fabric net that is stretchable at a certain degree is used to form the rear portion 110, front portions 120 and 130, and hinge portions 140 and 150 in a two-layered structure. The

edges of the rear portion 110, front portions 120 and 130, and hinge portions 140 and 150 are sewn, and a reinforcing sheet is inserted in the inside of the rear portion 110 and the front portions 120 and 130 to keep in shape. The rest is the same as those described above in relation to the above embodiments.

[65] In this embodiment, the package includes the fabric net, so that the inside may be seen through meshes in the net. The hinge portions 140 and 150 may be expanded or contracted by the elasticity of the fabric net itself, allowing various objects with different volumes to be packed in the package.

[66] Further, although not shown in the drawings, a dehumidifying agent (e.g., silica gel) may be stored in the package 100 or an unwoven cloth for dehumidification may be attached in the package 100.

[67]

[70] Figs. 11 and 12 illustrate a package for vertical storing according to a seven embodiment of the present invention.

[71] In this embodiment, the package 100 includes a rear portion 110 and front portions 120 and 130 standing a to-be-packed object, such as frozen (refrigerated) food, while covering the object at a predetermined width and thickness, and foldable hinge portions 140 and 150 between the rear portion 110 and the front portions 120 and 130. The rear portion 110 and the front portions 120 and 130 are formed of hard sheets to keep the package 100 in an upright position. Detachable fasteners 170 are provided in the front portion 120. The rear portion 110 and the front portions 120 and 130 are formed of hard plastic sheets, rather than further including separate reinforcing sheets to keep in shape. The hinge portions 140 and 150 connecting between the rear portion 110 and the front portions 120 and 130 are formed of soft vinyl films and are integrally bonded to the sides of the rear portion and front portions through thermal, ultrasonic, or high-frequency bonding.

[72] The reference numeral 116 denotes a bonded portion.

[73] In this embodiment, the fasteners 170 including male and female Velcro tapes are provided in the left and right front portions 120 and 130 to adjust thickness when the object is covered with the package as shown in Fig. 11. The left front portion 120 has such fasteners 170 attached onto an outside thereof, and the right front portion 130 has fasteners 170 attached onto an inside thereof.

[74] Further, in this embodiment, the rear portion 110 has jaws 112 and 114 respectively formed at upper and lower portions thereof on the inner surface of the rear portion 110 to prevent the object packed in the package from sagging or sliding down. The jaws 112 and 114 may be preferably formed as protruding beads that are elongate in left and right directions as shown in the drawings, but not limited thereto. More preferably, e.g., anti-slip silicone coating may be added to the surface of the jaws 112 and 114 to effectively prevent vinyl-wrapped food packed in the package from slipping (sliding down), thus preventing the package from bulging out.

[75] In this embodiment, the jaws 112 and 114 may be integrally formed with the rear portion 110 and front portions 120 and 130 that are formed of hard synthetic resin sheets and may be formed of the same material as the rear and front portions 110, 120, and 130. The jaws 112 and 114 may be formed of a different material (e.g., a soft silicone resin), which is not a hard synthetic resin, by, e.g., double-shot injection.

[76] In this embodiment, the rear portion 110 and the front portions 120 and 130 are preferably formed of transparent synthetic resin sheets, and detachable marks may be attached to the front portions 120 and 130 or hinge portions 140 and 150 to help the object to be identified and pulled out while the package is stored vertically.

[77] The package according to the instant embodiment may also be used in the same manner as described in relation to the above embodiments, and no repetitive description of a specific method of using the same is given.

[78] Meanwhile, according to the present invention, the inner surface of the rear portion 110 may be formed of a frictional material for preventing slips or may be formed in an anti-slip pattern, rather than forming the jaws 112 and 114 in the above embodiment.

[79] Further, according to the present invention, instead of forming the jaws 112 and 114 according to the above embodiment or forming a frictional material or anti-slip pattern or form, a soft or hard skirt having a foldable hinge portion may be attached to at least one of an upper and lower end of the rear portion 110 to prevent the content (or object) from slipping down (sliding down). The content is placed on the inside of the rear portion 110, the skirt extending through the hinge portion is folded up, and the left and right front portions 120 and 130 are folded to cover the content. By doing so, the content is prevented from slipping down. The top-bottom length of the skirt is about 1/3 of the horizontal length of the rear portion.

[80] Figs. 13 and 14 illustrate a package for vertical storage according to an eight embodiment of the present invention. The package includes a rear portion 110 and front portions 120 and 130 to cover a to-be-packed object, such as refrigerated food, at a predetermined width and thickness and stand the object and foldable hinge portions 140 and 150 between the rear portion 110 and the front portions 120 and 130. The rear portion 110 and the front portions 120 and 130 are formed of hard sheets to keep the package 100 in an upright position. Detachable fasteners 170 are provided in the front portion 120. Instead of separate reinforcing sheets to keep in shape, the rear portion 110 and the front portions 120 and 130 are formed of hard plastic sheets, and the hinge portions 140 and 150 connecting between the rear portion 110 and the front portions 120 and 130 are formed of hard plastic sheets. The hinge portions 140 and 150 have a

plurality of folding grooves 142 and 152 vertically formed in parallel with each other to be flexibly folded.

[81] Also in the instant embodiment, the left and right front portions 120 and 130 have fasteners 170 including male and female Velcro tapes to adjust thickness when the object is covered for storage as shown in Fig. 13. The fasteners 170 are attached onto the outside of the left front portion 120 and onto the inside of the right front portion 130.

[82] Also in this embodiment, jaws 112 and 114 are formed at upper and lower sides on the inner surface of the rear portion 110 to prevent the object from slipping or sagging down when the package is placed in an upright position for vertical storage. The jaws 112 and 114 are the same as those described above in connection with the seventh embodiment, and thus, no repetitive description thereof is given.

[83] Figs. 15 and 16 illustrate a package for vertical storage according to a ninth embodiment of the present invention. In this embodiment, the rear portion 110 is formed of a hard plastic sheet. Front portions 120 and 130 formed of soft vinyl sheets are attached to left and right sides, respectively, of the rear portion 110. A separate reinforcing sheet 160 is added to be put in the inside of the front portions 120 and 130 to prevent a front portion of the package from bulging out.

[84] In this embodiment, no separate hinge portions are provided between the rear portion 110 and the front portions 120 and 130, and the front portions 120 and 130 are formed of flexible vinyl sheets to allow the front portions 120 and 130 to be folded fitting the thickness of the object to be packed in the package.

[85] In this embodiment, the reinforcing sheet 160 is separated. Further, unlike in the conventional method, the package may be easily erected at any angle (even with the hinge portion placed on the floor). This addresses the shortcomings of the above-described

embodiments in which the package is easily put in the upright position only through the opened top or bottom thereof but is not with the hinge portion placed on the floor.

[86] Further, in storing food through the package in a refrigerating or freezing compartment, the front reinforcing sheet may compress, flatten, and stand the food as its existing function. Further, the front portion reinforcing sheet 160 may separately be pulled out after the food is frozen in a desired form. Thus, the resultant volume may be reduced, leaving a slightly increased room for storage in the freezing compartment (or refrigerating compartment). As shown in Fig. 17, receiving holes 162 of various shapes or sizes, e.g., in the shape of an ice cube tray, may be formed in an inside of the reinforcing sheet 160, which contacts the food, allowing the food to be formed and frozen in a desired shape depending on the type of food and allowing only a desired amount of garlic or meat to be easily taken out.

[87] In this embodiment, the jaws 112 and 114 of the rear portion 110 and the fasteners 170 of the front portions 120 and 130 are the same as those described above in connection with the above embodiments, and no repetitive description thereof is given.

[89] [REFERENCE DENOTATIONS]

[90] 100 : package

[91] 110 : rear portion

[92] 112,114 : jaw

[93] 116 : bonded portion

[94] 120,130 : front portion

[95] 140,150 : hinge portion

[96] 160 : reinforcing sheet

[97] 162 : receiving hole

[98] 170 : fastener

[99] 180 : anti-slip structure

[101] F : refrigerator

[102] P : object (e.g., food)

**WHAT IS CLAIMED IS**

1. A package for vertical storage of food, comprising:

a rear portion 110 and front portions 120 and 130 covering an object at a predetermined width and thickness and standing the object; and

foldable hinge portions 140 and 150 provided between the rear portion 110 and the front portions 120 and 130, wherein the rear portion 110 and the front portions 120 and 130 are formed of a hard plastic sheet to keep the package 100 in an upright position, and wherein a fastener 170 is provided in the rear portion 110 or the front portion 120 to fasten the object in a wrapped state.

2. The package of claim 1, wherein the hinge portions 140 and 150 are formed of a hard plastic material, and wherein the hinge portions 140 and 150 have a plurality of folding grooves 142 and 152 vertically formed in parallel with one another to be flexibly folded.

3. The package of claim 1 or 2, wherein jaws 112 and 114 are formed at upper and lower sides on an inner surface of the rear portion 110 to prevent the packed object from slipping off or sagging down when the object is put in an upright position for vertical storage.

4. The package of claim 1 or 2, wherein a skirt having a hinge portion is attached to at least one of upper and lower ends of the rear portion 110 and wherein the skirt is folded inward with the object P placed on the rear portion 110 to prevent the object from escaping out.

5. The package of claim 1, wherein the package 100 includes a ring-shaped hanger to allow the package 100 to be hung and stored.

6. The package of claim 1 or 2, wherein the hinge portions 140 and 150 are formed of a soft material.

7. The package of claim 1 or 2, wherein an anti-slip structure 180 is provided in an inner surface of the rear portion 110 to prevent the object from escaping or sagging down.