



US 20140263527A1

(19) **United States**(12) **Patent Application Publication**
Mukohara et al.(10) **Pub. No.: US 2014/0263527 A1**(43) **Pub. Date: Sep. 18, 2014**(54) **FLAP COVER FOR ROLL STORAGE CASE
AND ROLL STORAGE APPARATUS**(75) Inventors: **Takafumi Mukohara**, Chiyoda-ku (JP);
Takashi Nakao, Chiyoda-ku (JP)(73) Assignee: **ASAHI KASEI CHEMICALS
CORPORATION**, Tokyo (JP)(21) Appl. No.: **14/343,986**(22) PCT Filed: **Sep. 14, 2011**(86) PCT No.: **PCT/JP2011/071012**

§ 371 (c)(1),

(2), (4) Date: **May 2, 2014****Publication Classification**(51) **Int. Cl.**
B65H 35/00 (2006.01)
B65H 35/06 (2006.01)(52) **U.S. Cl.**CPC **B65H 35/002** (2013.01); **B65H 35/0066**
(2013.01); **B65H 35/06** (2013.01)USPC **225/43**(57) **ABSTRACT**

An object of the present invention is to allow a flap of a roll storage case to be easily opened and closed by means of a flap cover and to prevent the flap cover from slipping off from the flap of the roll storage case even when the flap is opened and closed many times. A flap cover includes an upper plate covering an upper surface portion of a flap, a front plate covering a front surface portion of the flap, and a pair of side plates covering opposite side surface portions of the flap. Each of the side plates includes a locking portion which projects inward from the side plate and which is able to be locked on a lower end surface of the side surface portion of the flap.

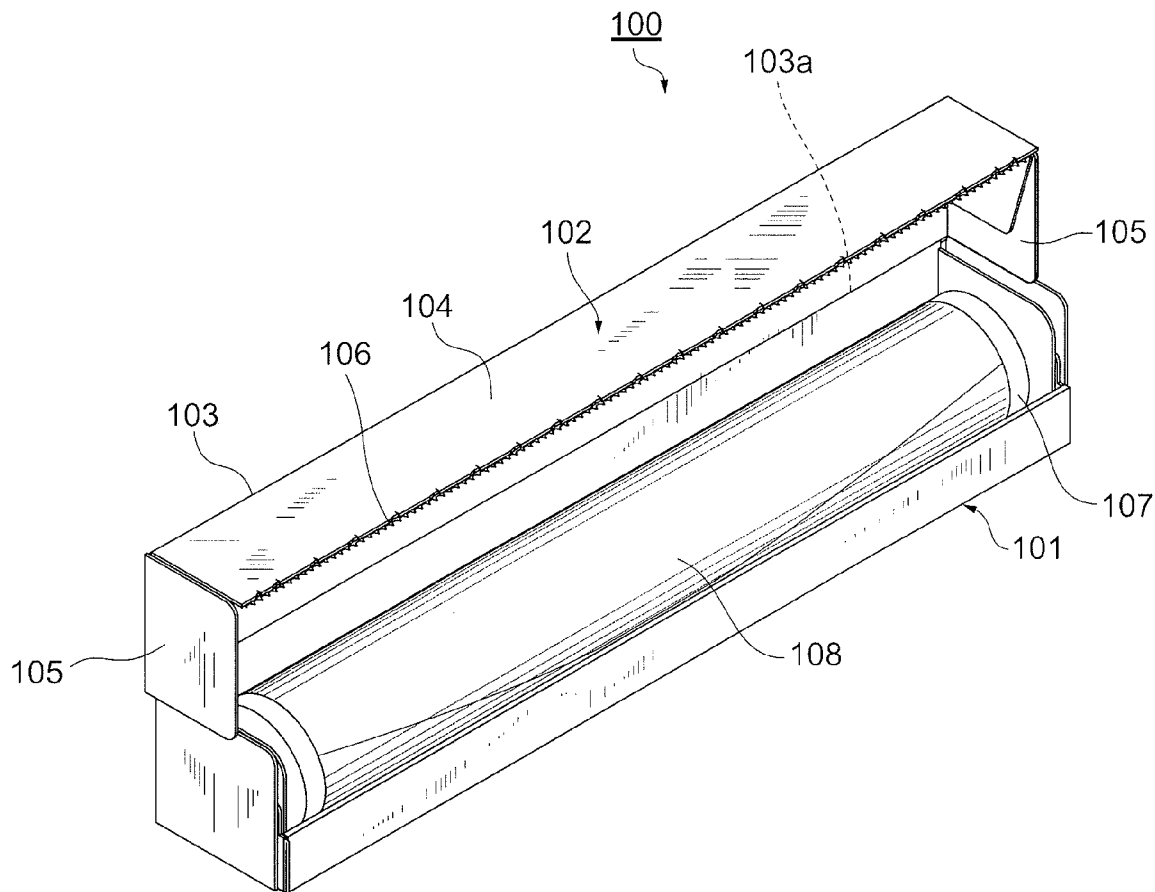


FIG. 1

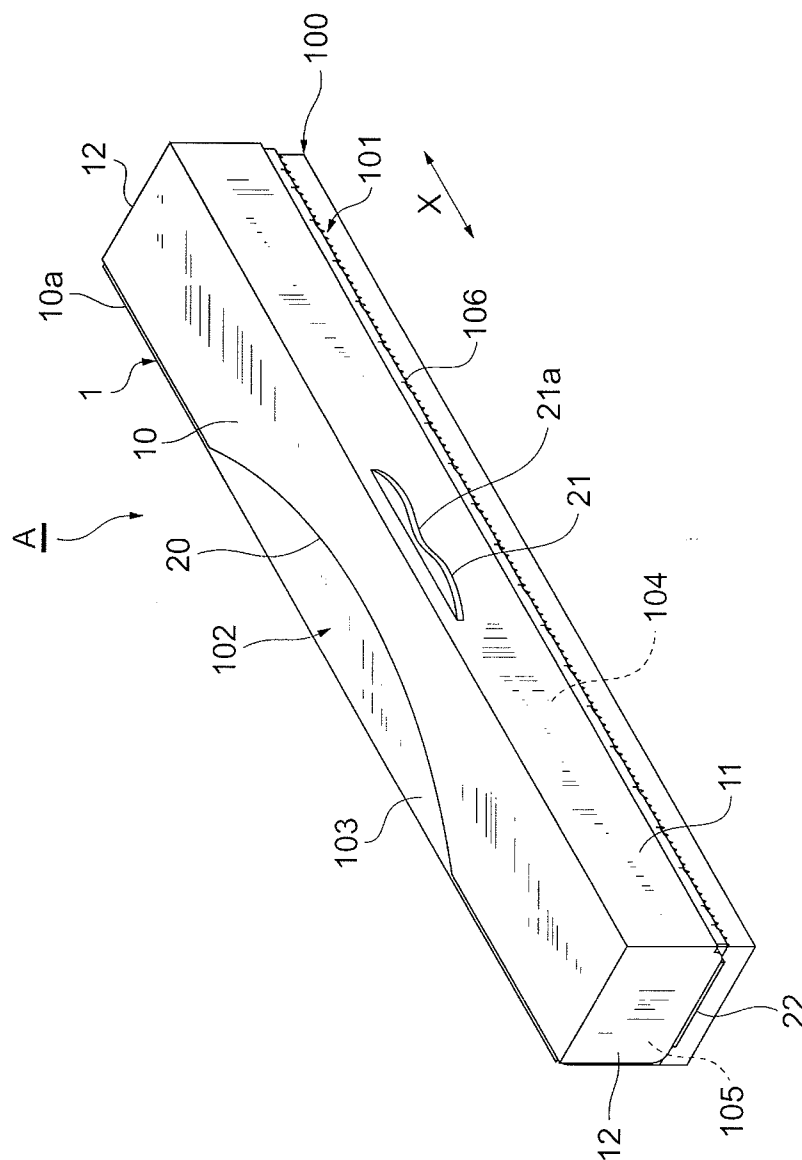


FIG.3

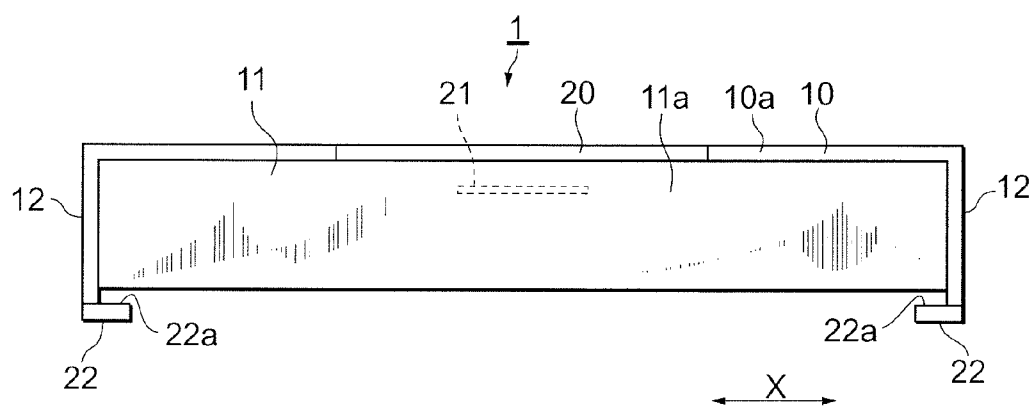
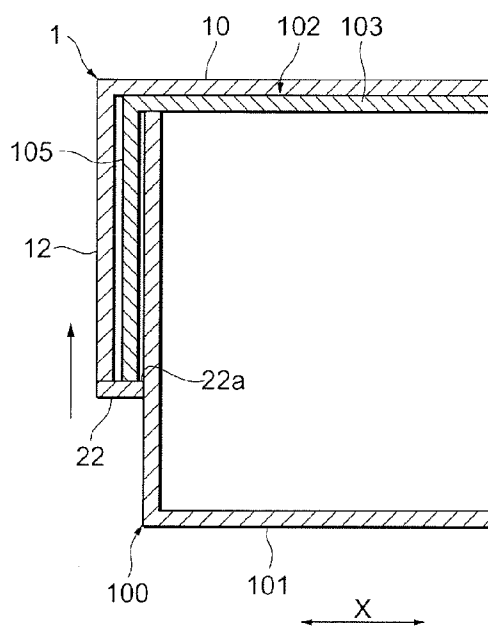


FIG.4



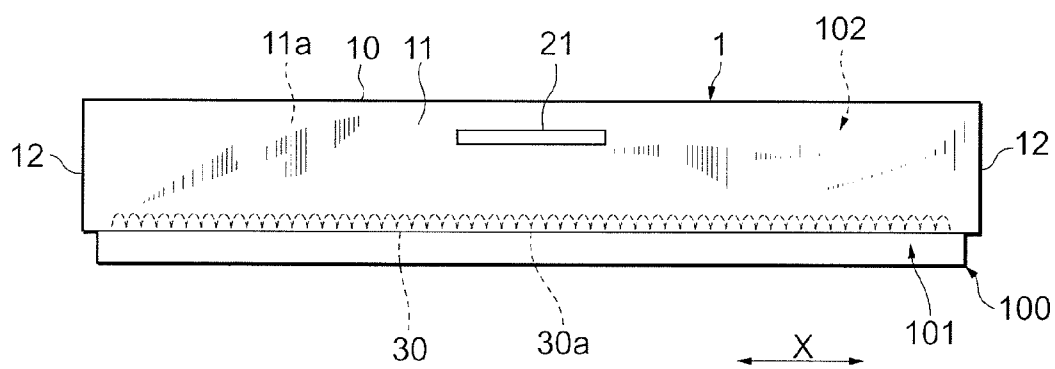


FIG.8

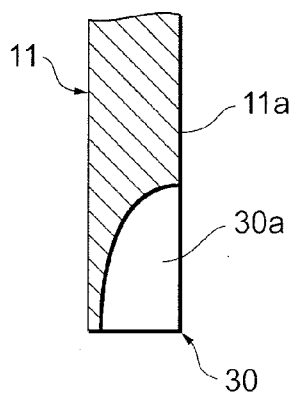


FIG.9

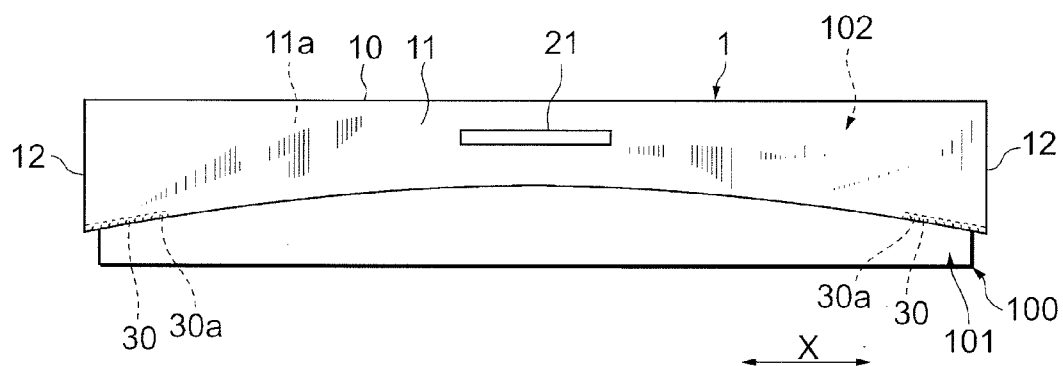


FIG.11

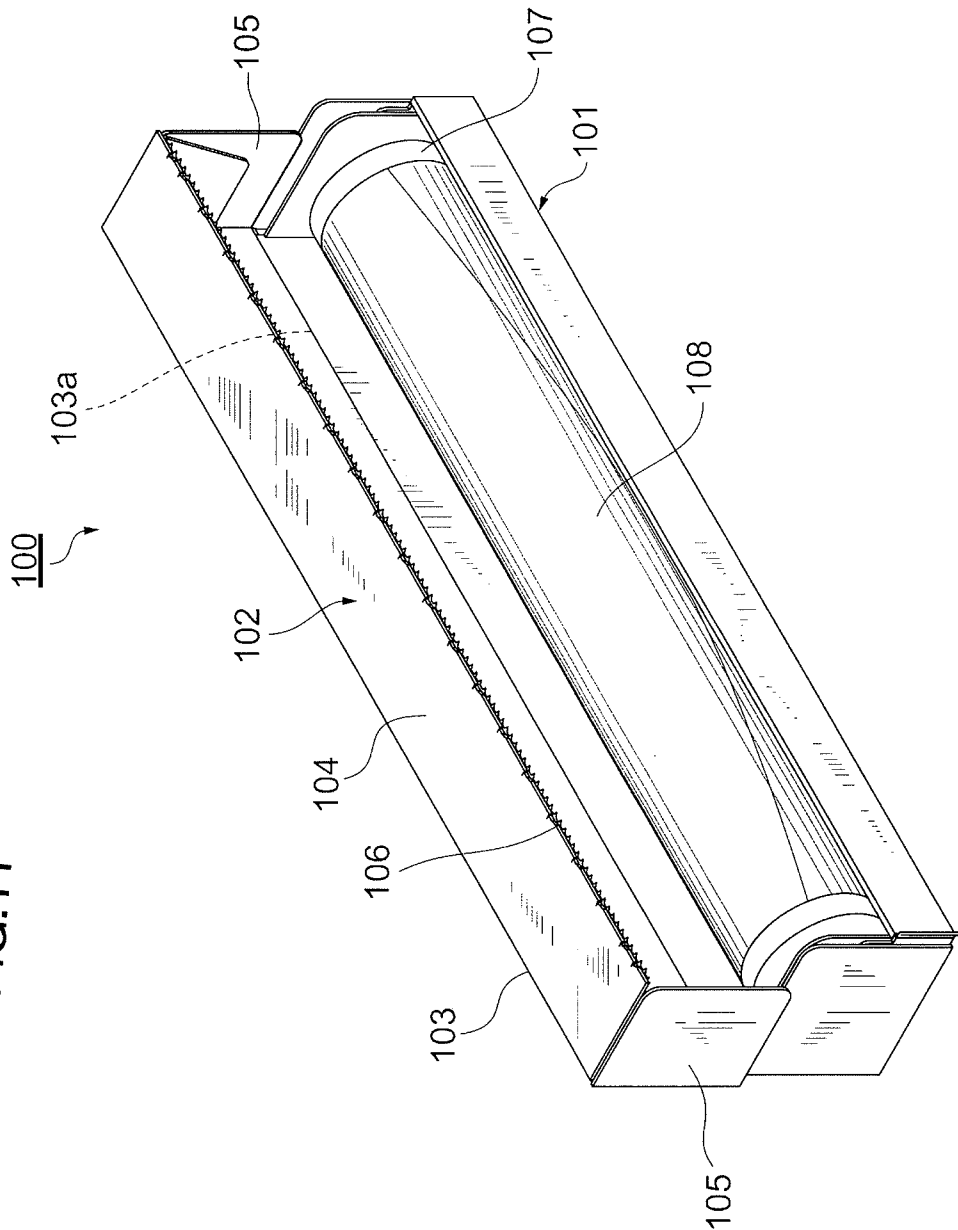


FIG.13

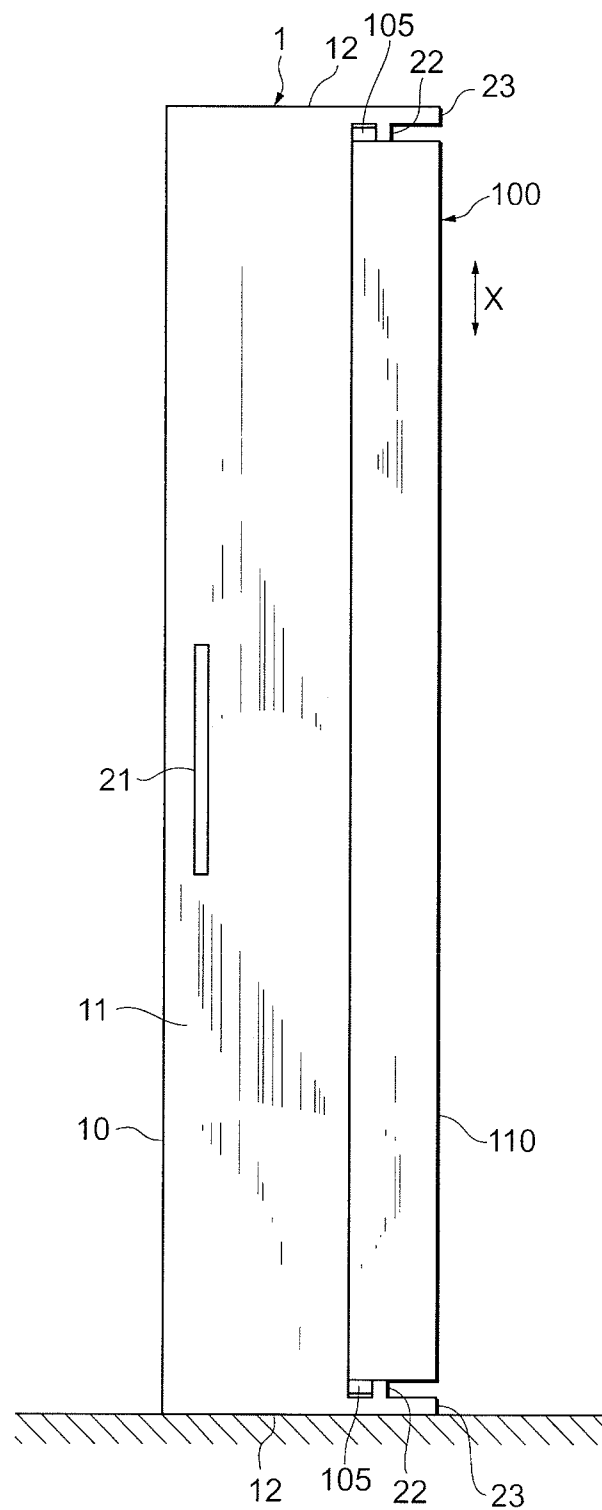


FIG.14

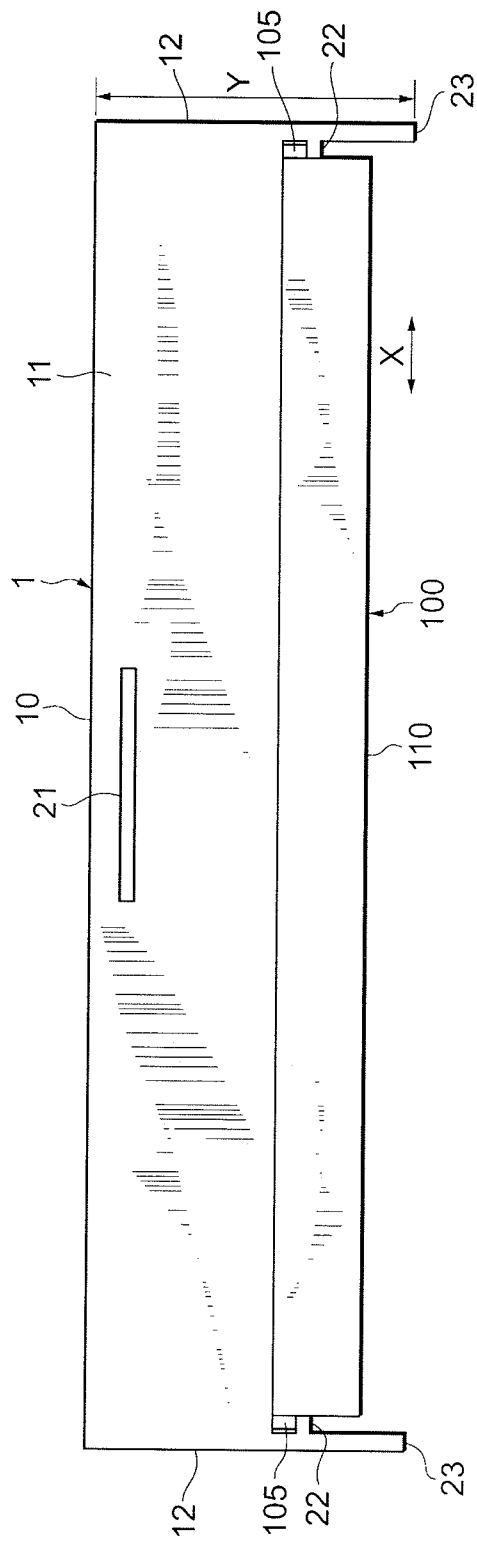


FIG.15

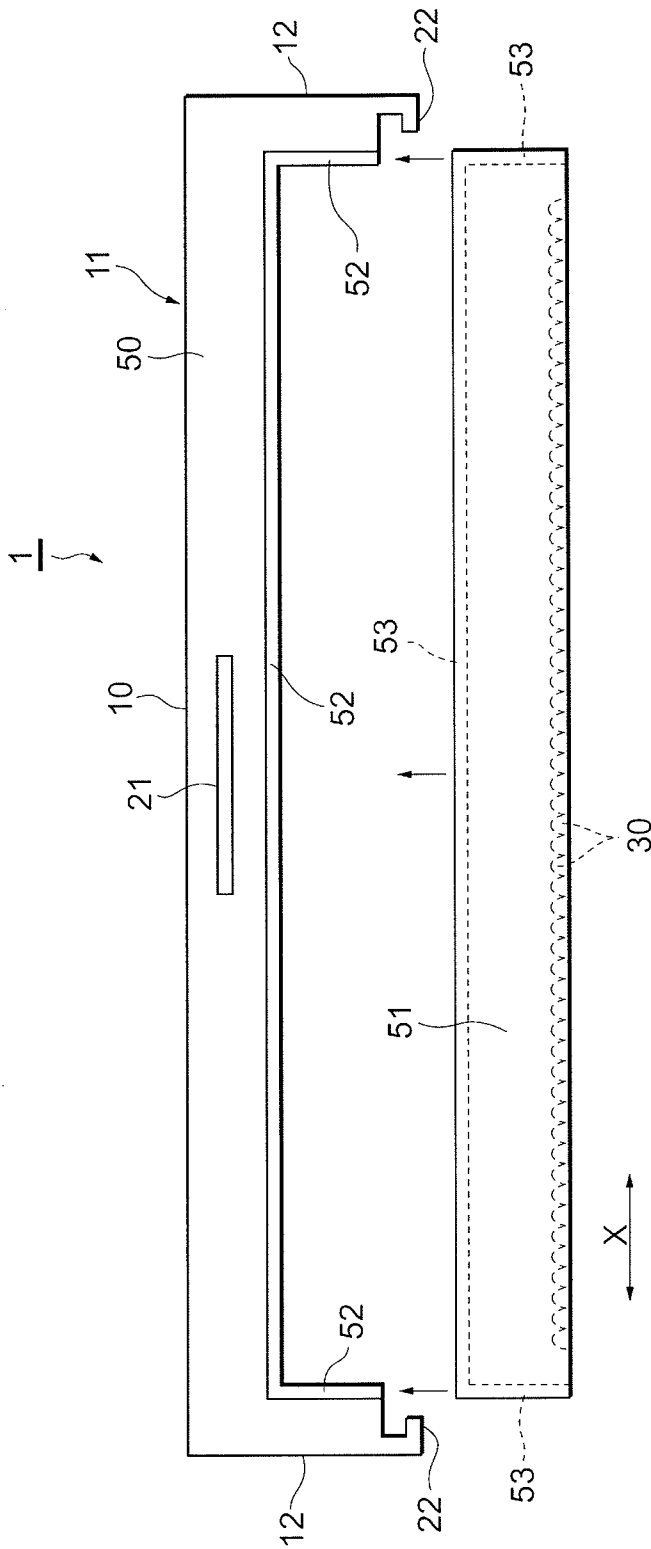
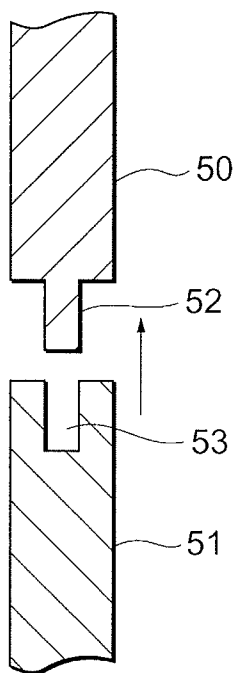


FIG.16



FLAP COVER FOR ROLL STORAGE CASE AND ROLL STORAGE APPARATUS

BACKGROUND

[0001] The present invention relates to a flap (lid) cover for a roll storage case and a roll storage apparatus which store a roll around which film for food packaging such as plastic wrap, aluminum foil, or cooking paper is wound.

[0002] Film for food packaging such as plastic wrap, aluminum foil, or cooking paper, when in use, is wound around a cylindrical roll, which is stored in a roll storage case formed of paper (see Patent Document 1). As shown in FIG. 11, a roll storage case 100 has a rectangular parallelepiped-like case 101 normally shaped generally like a rectangular parallelepiped and including an open upper surface and a flap 102 that covers the open upper surface of the case 101. The flap 102 has an upper surface portion 103, a front surface portion 104, and side surface portions 105 located on opposite sides of the flap 102 in a longitudinal direction thereof. A rear end side 103a of the upper surface portion 103 is connected to the case 101. The flap 102 can move rotationally using the rear end side 103a as an axis to open and close the open upper surface of the case 101. A cutting edge 106 that cuts film is provided at a lower end portion of the front surface portion 104.

[0003] When film for the roll storage case 100 is used, the flap 102 is opened, and a necessary amount of film 108 on a roll 107 is drawn out. Then, the flap 102 is closed, and with tension applied to the film 108, the film 108 is cut into a desired length using the cutting edge 106 of the front surface portion 104.

[0004] About 5 m to 50 m of film 108 is wound around the roll 107, and thus, the film 108 is cut a number of times before the film 108 is used up. Thus, each time the film 108 is cut, the front surface portion 104 or upper surface portion 103 of the flap 102, on which a load is placed, may be deformed. In particular, the roll storage case 100 is often used in a place with much moisture such as a kitchen, and is thus likely to be deformed by absorbing the moisture. When the flap 102 with the cutting edge 106 is deformed, the film 108 fails to be properly cut and may be torn. Furthermore, hooking a user's finger on the roll storage case 100 is difficult, and thus, the flap 102 is difficult to open and close. Consequently, the film 108 may be drawn out with the flap 102 imperfectly opened and hence come into contact with the cutting edge 106, causing the film 108 to be torn. In another case, the film 108 may be cut with the flap 102 imperfectly closed and hence wound back around the roll 107. Then, the roll storage case 100 may be difficult to use.

[0005] Thus, in order to prevent the flap of the roll storage case from being deformed, a flap reinforcing cover that covers the flap has been proposed (see Patent Document 2). The flap reinforcing cover is attached to a surface of the flap of the roll storage case, and is held and rotationally moved to open and close the flap. When the flap of the roll storage case is opened or closed, the flap reinforcing cover needs to hold the flap. The holding is achieved by forming a tongue-like elastic body on a side surface of the flap reinforcing cover and pressing the tongue-like elastic body against the side surface portion of the flap, which is located inside the tongue-like elastic body.

[0006] [Patent Document 1] JP-A-2003-160141

[0007] [Patent Document 2] JP-A-2004-352356

[0008] However, when the tongue-like elastic body of the flap reinforcing cover is pressed and held against the side surface portion of the flap as described above, the side surface

portion of the flap is also pressed against the side surface portion on the inside of the case. The side surface portion of the flap is sandwiched between the tongue-like elastic body and the side surface portion of the case, making the flap difficult to open. Furthermore, opening and closing the flap many times gradually reduces the pressing force of the tongue-like elastic body. The flap reinforcing cover may slip off from the flap.

SUMMARY

[0009] In view of these problems, it is an object of the present invention to provide a flap cover for a roll storage case and a roll storage apparatus which allow the flap of the roll storage case to be easily opened and closed and which can prevent the flap cover from slipping off from the flap of the roll storage case even when the flap is opened and closed many times.

[0010] To accomplish the object, the present invention provides a flap cover removably installed on a flap of a roll storage case storing a roll around which film is wound, the flap cover including an upper plate covering an upper surface portion of the flap, a front plate covering a front surface portion of the flap, and a pair of side plates covering opposite side surface portions of the flap, wherein each of the side plates is provided with a locking portion which projects inward from the side plate and which is able to be locked on a lower end surface of the side surface portion of the flap.

[0011] According to the present invention, the flap is held by the flap cover by locking the locking portion of each of the side plates of the flap cover on the lower end surface of the corresponding side surface portion of the flap. This prevents the side surface portion of the flap from being pressed inward as in the case of the conventional technique, increasing the easiness with which the flap is opened. Furthermore, the flap cover can be prevented from slipping off from the flap even when the flap is opened and closed many times.

[0012] The front plate may include a projecting portion projecting forward and extending in a lateral direction. In such a case, for example, a user's thumb can be hooked on the projecting portion to rotationally move the flap cover. Thus, the flap can be easily opened and closed by a reduced force.

[0013] The projecting portion may be recessed in a center thereof. In such a case, for example, the user's thumb can be easily hooked on the projecting portion to more easily open and close the flap.

[0014] The locking portion may have a horizontal upper surface formed along a front-back direction of the side plate. In such a case, the locking portion is suitably locked on the horizontal lower end surface of the side surface portion of the flap.

[0015] The front plate may include a cutting edge formed on a lower end portion of the front plate to cut film. In such a case, the flap cover can be used for a simple roll storage case with no cutting edge attached thereto.

[0016] The cutting edge may be formed on a part of the lower end portion of the front plate. In such a case, the cutting edge can form in film just a scratch that serves as a start point of cutting. This makes it possible for the film to be cut by extending the scratch. In such a case, a cut end surface of the film is prevented from being notched, restraining the film from being torn in a longitudinal direction thereof.

[0017] The cutting edge may be formed by forming recesses and protrusions on a back surface of the lower end portion of the front plate. In such a case, for example, the

user's finger can be restrained from coming into touch with the cutting edge while the roll storage case is in use. Furthermore, even upon coming into touch with the cutting edge, the user's finger is prevented from being hurt.

[0018] The front plate may include an edge cover covering the cutting edge of the flap. In such a case, for example, the user's finger can be prevented from coming into touch with the cutting edge of the flap while the roll storage case is in use.

[0019] Each of the side plates may extend downward from the locking portion. In such a case, the roll storage case can be stably placed longitudinally on a flat surface (placed with one of the side plates of the roll storage case on a flat surface). Furthermore, each of the side plates may extend downward from a bottom surface of the roll storage case. In such a case, the roll storage case can be more stably placed longitudinally on a flat surface. Additionally, when the roll storage case is placed transversely on a flat surface (placed with an upper plate of the roll storage case facing upward), the bottom surface of the roll storage case is disposed in such a manner as to hang in the air, hindering heat from being transmitted to the film inside the roll storage case even when the roll storage case is positioned in a place that becomes hot, for example, on a microwave oven. This enables possible alteration of the film to be suppressed.

[0020] The front plate may have a replaceable structure. In such a case, the front plate may selectively have a favorable shape or pattern. Furthermore, if the front plate has a function to cut film, the front plate portion can be exclusively replaced when the cutting function is degraded.

[0021] Another aspect of the present invention provides a roll storage apparatus having a roll storage case and a flap cover for the roll storage case which is able to be attached to the roll storage case.

[0022] The aspects of the present invention allow the flap of the roll storage case to be easily opened and closed and can prevent the flap cover from slipping off from the flap of the roll storage case even when the flap is opened and closed many times.

DESCRIPTION OF DRAWINGS

[0023] FIG. 1 is a perspective view of a flap cover according to an embodiment installed in a roll storage case;

[0024] FIG. 2 is a perspective view showing that the flap cover has not been installed in the roll storage case yet;

[0025] FIG. 3 is a rear view of the flap cover;

[0026] FIG. 4 is a vertical cross-sectional view of the periphery of a side plate of the flap cover;

[0027] FIG. 5 is a perspective view showing that a flap of a roll storage case is opened using the flap cover;

[0028] FIG. 6 is a front view showing a flap cover with a cutting edge;

[0029] FIG. 7 is a front view showing a flap cover with a cutting edge on a back surface of a front plate;

[0030] FIG. 8 is a vertical cross-sectional view showing recesses and protrusions of the cutting edge on the front plate of the flap cover;

[0031] FIG. 9 is a front view of a flap cover with a cutting edge on a part of a lower end portion of the front plate;

[0032] FIG. 10 is a perspective view showing a flap cover with an edge cover;

[0033] FIG. 11 is a perspective view of a roll storage case;

[0034] FIG. 12 is a front view of a flap cover installed on the roll storage case and having a side plate extending downward from a locking portion;

[0035] FIG. 13 is a diagram illustrating that the roll storage case on which the flap cover with the extended side plates is installed is placed longitudinally on a flat surface;

[0036] FIG. 14 is a front view of a flap cover installed on the roll storage case and having side plates extending from a bottom surface of the roll storage case;

[0037] FIG. 15 is a front view showing a flap cover configured to have a replaceable front plate; and

[0038] FIG. 16 is a cross-sectional view showing a mating structure for a front plate main body of the front plate and a front plate replacement portion.

DETAILED DESCRIPTION

[0039] A preferred embodiment of the present invention will be described below with reference to the drawings. FIG. 1 is a perspective view of a roll storage apparatus A in which a flap cover 1 is installed on a roll storage case 100. FIG. 2 is a perspective view showing that the flap cover 1 has not been installed in the roll storage case 100 yet.

[0040] The flap cover 1 is removably installed on a flap 102 of the roll storage case 100, for example, as shown in FIG. 1 and FIG. 2. The flap cover 1 has an upper plate 10 shaped generally like a rectangular parallelepiped and covering an upper surface portion 103 of the flap 102, a front plate 11 shaped generally like a rectangular parallelepiped and covering a front surface portion 104 of the flap 102, and a pair of square side plates 12 covering respective opposite side surface portions 105 of the flap 102. As shown in FIG. 3, a rear surface side and a bottom surface side of the flap cover 1 are open.

[0041] As shown in FIG. 1 and FIG. 2, a circular arc-like cutout 20 may be formed in the longitudinal (lateral direction X) center of a rear end side 10a of the upper plate 10. The front plate 11 is formed to be shorter than the front surface portion 104 of the flap 102 in the vertical direction so as to expose a cutting edge 106 of the flap 102. A hooking portion for a user's finger is preferably formed in the center of the front plate 11 in the lateral direction X. The hooking portion may be, for example, a projecting portion 21 projecting forward and extending in the lateral direction X. The hooking portion may further include a recess portion formed therein and in which the user's finger can be placed. For example, the projecting portion 21 is shaped to appear like a wave in a plan view and includes a recess 21a formed in the center of the projecting portion 21 in the lateral direction X. The projecting portion 21 may be formed exclusively in a central portion of the front plate 1 or all over the front plate 11 in the lateral direction X. The projecting portion 21 preferably has a projection length of, for example, 20 mm or less. Furthermore, the projecting portion 21 may appear to have another shape in a plan view such as a circular arc or a rectangle. However, the wave shape is more preferable because the user's finger can be more appropriately hooked on the wave-like projecting portion 21 to easily apply a force to the flap cover, thus allowing the flap 102 to be smoothly opened and closed.

[0042] As shown in FIG. 3, inward projecting locking portion 22 is formed on a lower end portion of each of the side plates 12. The locking portion 22, for example, projects inward from the lower end portion of the side plate 12 and at right angle to the side plate 12. The locking portion 22 includes a horizontal upper surface 22a formed as an upper surface thereof. The side plate 12 and the locking portion 22 form an L shape. When the flap cover 1 is installed on the flap 102, the side surface portion 105 of the flap 102 is placed on

the horizontal upper surface **22a** as shown in FIG. 4. Thus, the locking portion **22** is locked on the lower end surface of the side surface portion **105** of the flap **102**. When the flap cover **1** is rotationally moved, the locking portion **22** is hooked on the lower end surface of the side surface portion **105** of the flap **102** to lift the side surface portion **105** to open the flap **102**.

[0043] The flap cover **1** is formed of a material having a higher strength than a material for the roll storage case **100**. The flap cover **1** is formed using a material having an appropriate rigidity and an appropriate elasticity, for example, plastics or aluminum. Examples of the plastics include ABS, polystyrene, PC, an acrylic resin, polypropylene, and a polyethylene resin. Among these plastics, ABS, polystyrene, PC, an acrylic resin, and the like are more preferable which are very rigid resins. A well-known antimicrobial agent may be added to these resins. Furthermore, the flap cover **1** may be designed by coloring or printing or may be transparent. If the flap cover **1** is transparent, characters or pictures on the surface of the roll storage case **100** are visible even when the flap cover **1** is installed.

[0044] Now, an example of a usage of the flap cover **1** configured as described above will be described. First, as shown in FIG. 2, the flap cover **1** is placed in front of the roll storage case **100**. The flap cover **1** is installed on the flap **102** by being inserted over the flap **102** from a front side so that the locking portion **22** of the flap cover **1** is placed under the lower end surface of the side surface portion **105** of the flap **102**. Thus, as shown in FIG. 1, the upper surface portion **103**, the front surface portion **104**, and the side surface portions **105** of the flap **102** are covered by the flap cover **1**. Furthermore, the flap **102** is locked on the flap cover **1** by the locking portion **22**.

[0045] Then, the user's thumb is hooked on the projecting portion **21**, and the flap cover **1** is gripped so that the user's palm is positioned near the cutout **20**. As shown in FIG. 5, the flap cover **1** is rotationally moved to open the flap **102**. Subsequently, a predetermined amount of film **108** in the roll storage case **100** is drawn out. Then, the flap cover **1** closes the flap **102**, and the film **108** is tensed. The film **108**, kept under tension, is cut into a predetermined length with the cutting edge **106**.

[0046] When the film **108** is cut a number of times and all of the film **108** on a roll **107** is used up, the flap cover **1** is removed from the flap **102**. At this time, the flap cover **1** is removed by being pulled out forward from the flap **102** in a direction opposite to the direction in which the flap cover **1** is moved during installation so that locking portion **22** of the flap cover **1** slips out from under the lower end surface of the side surface portion **105** of the flap **102**. Then, the flap cover **1** is attached to the flap **102** of a next roll storage case **100** containing new film **108**.

[0047] According to the above-described embodiment, the flap **102** is held by the flap cover **1** by locking the locking portion **22** of each of the side plates **12** of the flap cover **1** on the lower end surface of the corresponding side surface portion **105** of the flap **102**. Thus, the flap cover **1** is prevented from being pressed against the flap **102** as is the case with the conventional technique, allowing the flap **102** to be more easily opened. Furthermore, even when the flap **102** is opened and closed a number of times, the flap cover **1** can be prevented from slipping off from the flap **102**.

[0048] Since the front plate **11** includes the projecting portion **21** formed thereon and projecting forward and extending

in the lateral direction X, for example, the user's thumb can be hooked on the projecting portion **21** to rotationally move the flap cover **1**. Thus, the flap **102** can be easily opened and closed by a weaker force.

[0049] Since the projecting portion **21** is recessed in the center thereof, for example, the user's thumb can be easily hooked on the projecting portion **21**. Furthermore, the user's thumb is guided to the center of the projecting portion **21**, and thus, the flap cover **1** can be rotationally moved with the center of the flap cover **1** held by the user's thumb. Hence, the flap **102** can be easily opened and closed by a weaker force.

[0050] Since the locking portion **22** has the horizontal upper surface **22a** formed along the front-back direction of the side plate **12**, the locking portion **22** is suitably locked on the horizontal lower end surface of the side surface portion **105** of the flap **102**. Furthermore, the flap cover **1** can be suitably installed on and removed from the flap **102** by sliding the flap cover **1** in the horizontal direction to move the horizontal upper surface **22a** of the locking portion **22** to and from under the lower end surface of the side surface portion **105** of the flap **102**.

[0051] In the flap cover **1** in the above-described embodiment, a cutting edge **30** that cuts the film **108** may be formed on the lower end portion of the front plate **11** as shown in FIG. 6. In such a case, the front plate **11** is formed to be longer than the lower end portion of the front surface portion **104** of the flap **102** so that the film **108** can be entirely cut in a width direction thereof with the cutting edge **30** of the flap cover **1**. According to this example, the flap cover **1** can be used in a simple roll storage case with no cutting edge.

[0052] Furthermore, the cutting edge **30** of the flap cover **1** may be formed by attaching a metal cutting edge to the flap cover **1** or forming recesses and protrusions **30a** on a back surface **11a** of the lower end portion of the front plate **11** as shown in FIG. 7 and FIG. 8. The recesses and protrusions **30a** are linearly and contiguously formed on the lower end portion of the back surface **11a** of the front plate **11**. In such a case, since the cutting edge **30** is provided on the back surface **11a**, the user's finger can be restrained from coming into touch with the cutting edge **30** while the roll storage case is in use. Additionally, since the cutting edge **30** includes the recesses and protrusions **30a**, the user's finger can be restrained from being hurt even when coming into touch with the cutting edge **30**.

[0053] In this case, the cutting edge **30** of the flap cover **1** may be formed exclusively on a part of the lower end portion of the front plate **11** as shown in FIG. 9. In such a case, the cutting edge **30** enables a start point for cutting of the film **108** to be formed so that the film can be cut by propagation of a tear. Thus, the film **108** can be cut by a weaker force. Furthermore, since the film **108** is cut by the propagation, the film **108** is prevented from being notched at a cut end surface thereof. Consequently, the film **108** can be prevented from being longitudinally torn. Additionally, when the cutting edge **30** is formed on a part of the lower end portion of the flap cover **1**, if, for example, the edge of the lower end portion is linear or arched in shape (the edge protrudes upward) the cutting edge **30** may be formed exclusively at opposite ends of the lower end portion. If the edge of the lower end portion is V shaped (the edge protrudes downward), the cutting edge may be formed exclusively at a tip portion of the center of the V shape.

[0054] In the flap cover **1** in the above-described embodiment, the front plate **11** includes an edge cover **40** that covers

the cutting edge **106** of the flap **102** as shown in FIG. **10**. The edge cover **40** is formed like, for example, a flexible, pliable sheet and is attached to the vicinity of the lower end portion of the front plate **11**. The edge cover **40** normally covers the cutting edge **106** and bends according to the angle at which the film **108** is drawn out to be cut. According to this example, the user's finger can be prevented from coming into touch with the cutting edge **106** of the flap **102**. The edge cover **40** need not necessarily be formed like a sheet but may have another configuration. For example, the lower end portion side of the front plate **11** may be extended, and a hinge portion may be provided in the middle of the extended lower end portion side so that the lower end portion is bendable and so that the bent portion can be used as an edge cover. Alternatively, the front plate **11** may be formed to be thin enough to be bendable in the vicinity of the lower end portion of the front plate **11** so that the bent portion can be used as an edge cover.

[0055] Furthermore, as shown in FIG. **12**, the lower end portion **23** of each of the side plates **12** may be extended downward from the locking portion **22** to enlarge the side plate **12**. Thus, a step on the side surface side of the roll storage case **100** is eliminated which is formed when the flap cover **1** is installed. Consequently, the roll storage case **100** can be stably placed longitudinally on a flat surface as shown in FIG. **13**. This prevents the roll storage case from occupying a large space in the kitchen and allows the roll storage case to be stored in a narrow place. In this example, the lower end portion **23** of the side plate **12** is located at the same position as that where a bottom surface **110** of the roll storage case **100** is located.

[0056] Alternatively, the lower end portion **23** of each of the side plates **12** may be projected from the bottom surface **110** of the roll storage case **100** as shown in FIG. **14**. In such a case, the roll storage case **100** with the flap cover **1** installed thereon can be more stably placed longitudinally on a flat surface. Additionally, when the roll storage case **100** is placed transversely on a flat surface, the bottom surface **110** of the roll storage case **100** is disposed in such a manner as to hang in the air, hindering heat from being transmitted to the roll **107** inside the roll storage case even when the roll storage case is positioned in a place that becomes hot, for example, on a microwave oven. This enables possible alteration of the film to be suppressed. In particular, when the roll storage case **100** is a plastic wrap storage case, the difficulty with which heat is transmitted to the internal plastic wrap allows a force needed to draw out the plastic wrap to be restrained from being increased by heat.

[0057] Furthermore, the front plate **11** of the flap cover **1** may have a replaceable structure. In such a case, the front plate **11** has, for example, a front plate main body **50** and a front plate replacement portion **51** that is removable from the front plate main body **50**, for example, as shown in FIG. **15**. The front plate replacement portion **51** is shaped like a square including the lower end portion of the front plate **11**. The front plate main body **50** is shaped generally like an inverse recess corresponding to the remaining portion of the front plate **11**. The front plate main body **50** includes such a projecting portion **52** as shown in FIG. **16** which is formed along three sides of an inner edge portion of the front plate main body **50**. The front plate replacement portion **51** includes a groove portion **54** formed along three sides (an upper surface portion and side surface portions) of an outer edge portion of the front plate replacement portion **51** and fitted over the projecting

portion **52**. Hence, the front plate replacement portion **51** can be installed on and removed from the front plate main body **50** by sliding the front plate replacement portion **51** up and down relative to the front plate main body **50** as shown in FIG. **15**. In such a case, the front plate **11** may selectively have a preferable shape or pattern. Additionally, when the front plate replacement portion **51** includes the cutting edge **30** at the lower end thereof as shown in FIG. **15**, the front plate replacement portion **51** may be exclusively replaced if, for example, the cutting performance of the cutting edge is degraded. The front plate **11** may be partly replaceable as in this example or wholly replaceable. Alternatively, the front plate replacement portion **51** (front plate main body **50**) may have another shape. In addition, the removal structure need not necessarily be formed like a slide, but any other structure may be used.

[0058] The preferred embodiment of the present invention has been described with reference to the attached drawings. However, the present invention is not limited to such an example. Obviously, those skilled in the art may arrive at various changes or modifications without departing from the scope of the concepts set forth in the claims. It is appreciated that such changes or modifications belong to the technical scope of the present invention.

[0059] For example, the edge of the lower end portion of the front plate **11** in the above-described embodiment may have a linear shape, an arched shape (an upward protrusion), or V shape (a downward protrusion) so as to be able to deal with any cutting edge shape for linear cutting or central cutting. The edge may be formed to conform to the shape of any other cutting edge.

[0060] Furthermore, the locking portion **22** need not necessarily be shaped to project like a horizontal plate as in the case of the above-described embodiment. The locking portion **22** may have another shape, for example, the locking portion **22** may project in the horizontal direction and then be curved or bent upward. The present invention is not limited to plastic wrap, aluminum foil, and cooking paper but is applicable to a flap cover for a roll storage case storing a roll around which any other film is wound.

EXAMPLES

[0061] A measurement method and an evaluation method used in an example and a comparative example are as follows.

[0062] <Draw-out Force>

[0063] A draw-out force is an indicator for a draw-out property, and a smaller value of the draw-out force indicates that the film can be drawn out by a weaker force. The draw-out force is measured by the following method. Plastic wrap adjusted to a film width of 30 cm and wound around a paper tube is set in a roll-like jig that can be easily rotated by a very weak force. An end of the film is fixed to a jig with a width of 330 mm which is coupled directly to a load cell of a tensile tester. Then, the maximum value of stress generated when the film is drawn out at a speed of 1,000 mm/min is measured. The measurement is carried out at a constant temperature of 23° C. and a constant humidity of 50%. The measurement is carried out ten times, and the resultant average value is adopted. Evaluation criteria are as follows.

o (appropriate): less than 100 cN

X (inappropriate): 100 cN or more

Example 1

[0064] A flap cover **1** with a length **Y** of 50 mm to the lower end portion **23** of the side plate **12** shown in FIG. **13** was installed on a roll storage case for Saran Wrap (manufactured by Asahi Kasei Home Products Corporation; 30 cm×20 m). The roll storage case was placed on a hot plate with the temperature thereof adjusted to 100° C. so that the lower end portion **23** of the side plate **12** contacted the hot plate, whereas the bottom surface **110** of the roll storage case **100** avoided contacting the hot plate. The roll storage case was left untreated for 30 minutes. Then, the internal wrap was removed from the roll storage case, which was left untreated at a constant temperature of 23° C. and a constant humidity of 50% for 30 minutes. Then, the draw-out force was measured. The draw-out force was 50 cN, and the film was successfully easily drawn out by a weak force of 50 cN.

Example 2

[0065] A tin cutting edge was removed from a roll storage case for Saran Wrap (manufactured by Asahi Kasei Home Products Corporation; 30 cm×20 m). Such a flap cover with cutting edges at respective opposite ends of a back surface of a front plate as shown in FIG. **9** was installed on the roll storage case. About 30 cm of the plastic wrap inside the roll storage case was drawn out and cut. Then, the plastic wrap was flawed at a widthwise end thereof, and using the flaw as a start point, a tear of the plastic wrap propagated to the opposite widthwise end of the wrap. Thus, the plastic wrap was successfully cut by a weak force.

[0066] The present invention is useful in allowing a flap of a roll storage case to be easily opened and closed using a flap cover and in preventing the flap cover from slipping off from the flap of the roll storage case even when the flap is opened and closed many times.

- [0067] **1** Flap cover
- [0068] **10** Upper plate
- [0069] **11** Front plate
- [0070] **12** Side plate
- [0071] **21** Projecting portion
- [0072] **22** Locking portion
- [0073] **100** Roll storage case
- [0074] **101** Case
- [0075] **102** Flap
- [0076] **103** Upper surface portion
- [0077] **104** Front surface portion
- [0078] **105** Side surface portion
- [0079] **106** Cutting edge
- [0080] **107** Roll
- [0081] **108** Film

[0082] X Lateral direction

[0083] A Roll storage apparatus

1. A flap cover for a roll storage case storing a roll around which film is wound, the flap cover being removably installed on a flap of the roll storage case, the flap cover comprising:
an upper plate covering an upper surface portion of the flap;
a front plate covering a front surface portion of the flap; and
a pair of side plates covering opposite side surface portions of the flap,

wherein each of the side plates is provided with a locking portion which projects inward from the side plate and which is able to be locked on a lower end surface of the side surface portion of the flap.

2. The flap cover for a roll storage case according to claim 1, wherein the front plate comprises a projecting portion projecting forward and extending in a lateral direction.

3. The flap cover for a roll storage case according to claim 2, wherein the projecting portion is recessed in a center thereof.

4. The flap cover for a roll storage case according to claim 1, wherein the locking portion comprises a horizontal upper surface formed along a front-back direction of the side plate.

5. The flap cover for a roll storage case according to claim 1, wherein the front plate comprises a cutting edge formed on a lower end portion of the front plate to cut film.

6. The flap cover for a roll storage case according to claim 5, wherein the cutting edge is formed on a part of the lower end portion of the front plate.

7. The flap cover for a roll storage case according to claim 5, wherein the cutting edge is formed by forming recesses and protrusions on a back surface of the lower end portion of the front plate.

8. The flap cover for a roll storage case according to claim 1, wherein the front plate comprises an edge cover covering the cutting edge of the flap.

9. The flap cover for a roll storage case according to claim 1, wherein each of the side plates extends downward from the locking portion.

10. The flap cover for a roll storage case according to claim 9, wherein each of the side plates extends downward from a bottom surface of the roll storage case.

11. The flap cover for a roll storage case according to claim 1, wherein the front plate has a replaceable structure.

12. A roll storage apparatus comprising:

a roll storage case; and

the flap cover for the roll storage case according to any of claims 1 to 11 which is able to be attached to the roll storage case.

* * * * *