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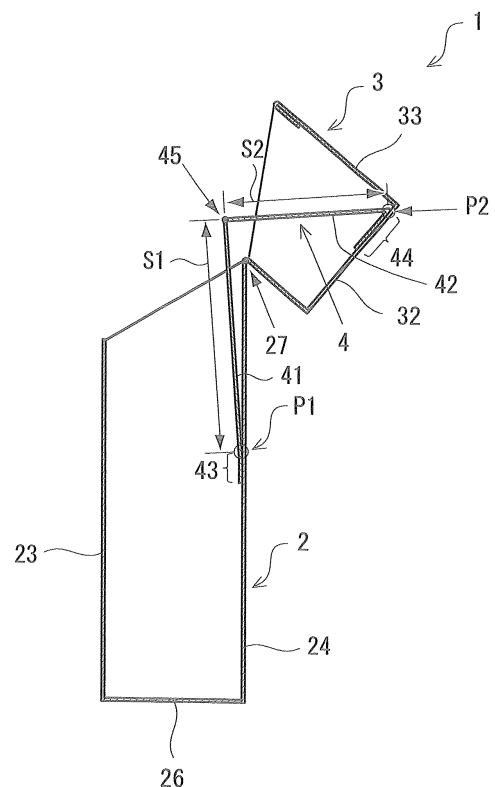
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(54) **BOX-TYPE PACKAGE**

(57) A package 1 includes: a package body 2 having an open end 21a; a lid member 3 that is pivotably coupled to a rear opening edge of the open end 21a by means of a hinge 27 and opens/closes the open end 21a; and a flat plate spring member 4 placed inside of the package 1, the flat plate spring member 4 having one end fixed to an inner surface of the package body 2 and having another end fixed to an inner surface of the lid member 3. The flat plate spring member 4 includes a bend line 45 parallel to the hinge 27, a first region portion 41, and a second region portion 42. When the first region portion 41 and the second region portion 42 are bent relative to each other at a boundary along the bend line 45 in conjunction with an opening/closing action of the lid member 3, a posture of the flat plate spring member 4 is switched between: a first tilted state in which the second region portion 42 is tilted frontward with respect to the first region portion 41; and a second tilted state in which the second region portion 42 is tilted rearward with respect to the first region portion 41.

FIG. 5B



Description

Technical Field

[0001] The present invention relates to a box-type package.

Background Art

[0002] Up to now, a soft-pack-type package, a box-type package, and the like are known as a package for housing a housed object such as a tobacco product. A box-type package with a hinge lid is known as one mode of the box-type package, and this box-type package includes an upper lid (hinge lid) that is openably/closably coupled to a package body by means of a hinge. In the box-type package of this type, normally, the package body that houses a bundle of cigarettes and a lid member for opening/closing an open end formed in an upper part of the package body are pivotably coupled to each other by means of the hinge provided along an edge part of the open end.

[0003]

Patent document 1: Japanese Patent No. 4205587
 Patent document 2: Japanese Patent No. 4485725
 Patent document 3: Japanese National Publication of International Patent Application No. 2008-522910
 Patent document 4: Japanese National Publication of International Patent Application No. 2005-510224
 Patent document 5: Japanese Patent No. 3253624

Summary of Invention

Technical Problem

[0004] In such a conventional box-type package with the hinge lid, the lid member is pivotably (turnably) coupled to the package body by means of the hinge. Hence, at the time of an opening/closing operation of the lid member, it is difficult to obtain a feeling that the lid member is opened/closed, and it is not possible to hold the lid member at its opened posture.

[0005] The present invention, which has been made in view of the above-mentioned circumstances, has an object to provide a box-type package that can satisfactorily bring a feeling that a lid member is opened/closed, at the time of an opening/closing operation of the lid member, and enables a user to hold the lid member at its opened posture without gripping the lid member once the lid member is opened.

Solution to Problem

[0006] The present invention adopts the following solutions in order to achieve the above-mentioned object. A box-type package according to the present invention includes: a package body having an open end in an upper

part thereof; a lid member that is pivotably coupled to a rear opening edge of the open end by means of a hinge and opens/closes the open end; and a flat plate spring member placed inside of the package, the flat plate spring member having one end fixed to an inner surface of the package body and having another end fixed to an inner surface of the lid member. The flat plate spring member includes a bend line parallel to the hinge, a first region portion fixed to the package body, and a second region portion fixed to the lid member. When the first region portion and the second region portion are bent relative to each other at a boundary along the bend line in conjunction with an opening/closing action of the lid member, a posture of the flat plate spring member is switched between: a first tilted state in which the second region portion is tilted frontward with respect to the first region portion; and a second tilted state in which the second region portion is tilted rearward with respect to the first region portion.

[0007] According to the box-type package having such a configuration as described above, the flat plate spring member including the bend line parallel to the hinge for pivotably coupling the package body and the lid member is provided in the package. Then, the flat plate spring member has the one end fixed to the inner surface of the package body, and has the another end fixed to the inner surface of the lid member. Hence, when the flat plate spring member is bent in conjunction with the opening/closing action of the lid member, the first region portion and the second region portion turn (pivot) relative to each other about the bend line. In this way, the posture of the flat plate spring member is switched between the first tilted state and the second tilted state, whereby a reaction caused by the switching is transmitted to the hands of a user, and a sound generated at the time of the switching stimulates a sense of hearing of the user. This enables the user to satisfactorily obtain a feeling that the lid member is opened/closed, when the user opens/closes the lid member of the package.

[0008] The hinge of the box-type package according to the present invention is provided at the rear opening edge of the open end. Hence, the flat plate spring member comes into the first tilted state when the lid member is in its closed state, and comes into the second tilted state when the lid member is in its opened state. The flat plate spring member is fixed to both the package body and the lid member, and restricts a free pivoting action of the lid member. Hence, the lid member can be held at a posture in the opened state.

[0009] Here, it is preferable that the bend line of the flat plate spring member be formed at a position higher than that of the hinge. Moreover, it is preferable that a sum of a first size and a second size be longer than a sum of a third size and a fourth size, the first size being a size of a straight line connecting the bend line and a first fixing portion in which the first region portion of the flat plate spring member is fixed to the package body, the second size being a size of a straight line connecting

the hinge and a first fixing portion in which the second region portion of the flat plate spring member is fixed to the lid member, the third size being a size of a straight line connecting the hinge and the first fixing portion, the fourth size being a size of a straight line connecting the hinge and the second fixing portion. As a result, the flat plate spring member can be more reliably switched between the first tilted state and the second tilted state in conjunction with the opening/closing action of the lid member.

[0010] The box-type package may further include restriction means provided to the package body, the restriction means abutting against the first region portion of the flat plate spring member to thereby restrict the first region portion from moving frontward when the lid member is closed. If the box-type package includes such restriction means, when the lid member is closed, the flat plate spring member can be more reliably switched from the second tilted state to the first tilted state, regardless of the type, amount, and the like of a housed object that is housed in the package.

[0011] The housed object that is housed in the box-type package is not particularly limited, but a set of rod-like articles, for example, a tobacco product can be taken as a preferred example of the housed object. That is, the housed object according to the present invention may be the tobacco product. Note that examples of the tobacco product include cigarettes (filtered cigarettes and non-filtered cigarettes (without a filter)), cigars, cigarillos, snus, snuff, chewing tobacco, and electronic cigarettes.

[0012] Note that the solutions provided by the present invention can be adopted in combination as much as possible.

Advantageous Effects of Invention

[0013] According to the present invention, a box-type package can satisfactorily bring a feeling that a lid member is opened/closed, at the time of an opening/closing operation of the lid member, and enables a user to hold the lid member in its opened posture without gripping the lid member once the lid member is opened.

Brief Description of Drawings

[0014]

[Fig. 1] Fig. 1 is a perspective view of a package according to Embodiment 1.

[Fig. 2] Fig. 2 is a perspective view of the package in which a lid member is closed, which is observed from its back side.

[Fig. 3] Fig. 3 illustrates a blank material of a flat plate spring member.

[Fig. 4A] Fig. 4A is a transparent perspective view of the package in the state where the lid member is closed.

[Fig. 4B] Fig. 4B is a transparent perspective view

of the package in the state where the lid member is opened.

[Fig. 5A] Fig. 5A is a longitudinal sectional view of the package in the state where the lid member is closed.

[Fig. 5B] Fig. 5B is a longitudinal sectional view of the package in the state where the lid member is opened.

[Fig. 6] Fig. 6 is a diagram illustrating part of a blank material for forming a package according to Embodiment 2.

[Fig. 7] Fig. 7 is a sectional view of the package according to Embodiment 2.

[Fig. 8] Fig. 8 is a perspective view of a package according to Embodiment 3.

[Fig. 9] Fig. 9 is a perspective view of the package according to Embodiment 3.

Description of Embodiments

[0015] Now, embodiments of a box-type package according to the present invention are described with reference to the drawings.

[0016] A housed object that is housed in the box-type package to which the present invention is applied is not limited to a particular object, but description is given here of an example case where a tobacco product such as filtered cigarettes and non-filtered cigarettes is housed in the package. Moreover, the technical range of the present invention is not simply limited to the dimensions, materials, shapes, relative placements, and the like of components described in the present embodiments, unless specific description is particularly given.

<Embodiment 1>

[0017] Fig. 1 is a perspective view of a box-type package (hereinafter, simply referred to as "package") 1 according to Embodiment 1. The package 1 is a so-called box-type package with a hinge lid having a substantially rectangular parallelepiped shape. The package 1 includes a package body 2 and a lid member 3 that is pivotably coupled to the package body 2 by means of a hinge. The lid member 3 may also be referred to as "lid" in some cases.

[0018] Fig. 1 illustrates the state where the package 1 in which the lid member 3 is opened is observed from its front side. Fig. 2 is a perspective view of the package 1 in which the lid member 3 is closed, which is observed from its back side. Hereinafter, it is defined herein that the front side of the package 1 is "front" and that the back side thereof is "rear". The package body 2 and the lid member 3 in the present embodiment are each made of, for example, a paper material, but the present invention is not limited thereto.

[0019] The package body 2 includes an outer box 21 and an inner frame 22. The outer box 21 is a rectangular parallelepiped box body that is obliquely cut out on its

upper end side. The package body 2 is specifically described with reference to Fig. 1 and Fig. 2. The package body 2 includes a front wall 23, a rear wall 24, side walls 25, and a bottom wall 26. The front wall 23 and the rear wall 24 each have a rectangular shape. The rectangular shape of the rear wall 24 is larger in height than that of the front wall 23, and the rear wall 24 is opposed to the front wall 23. The paired side walls 25 respectively couple both the side edges of the front wall 23 to both the side edges of the rear wall 24, and each have a trapezoidal shape with an oblique upper end. That is, an upper end edge 25a of each side wall 25 is inclined so as to connect the upper end of the front wall 23 to the upper end of the rear wall 24. The bottom wall 26 has a rectangular shape, and is coupled to the lower ends of the front wall 23 and the rear wall 24.

[0020] Moreover, a hinge 27 is formed at the upper end of the rear wall 24 of the outer box 21. The hinge 27 extends between the rear ends of the respective upper end edges 25a of the side walls 25, and pivotably couples the rear wall 24 and the lid member 3 to each other. The outer box 21 having such a configuration as described above includes an oblique open end 21a at its upper end. Then, the lid member 3 is pivotably (turnably) coupled to the rear opening edge of the open end 21a by means of the hinge 27.

[0021] The inner frame 22 includes a front frame 28 having a substantially U shape and side frames 29 respectively coupled to both the side edges of the front frame 28. In the state where part of the inner frame 22 protrudes upward from the open end 21a in an upper part of the outer box 21, the inner frame 22 is bonded to the inner surface of the outer box 21, that is, the inner surfaces of the front wall 23 and the side walls 25. The inner frame 22 reinforces the open end 21a of the outer box 21, and also functions to guide opening/closing of the lid member 3. Here, as is apparent from Fig. 1, the front frame 28 includes a cut-out concave portion 28a having a substantially rectangular shape. The cut-out concave portion 28a serves to widely open the front of the inner frame 22, and thus enables the tobacco product (housed object) to be easily taken out.

[0022] The lid member 3 includes: a rectangular rear wall 31 coupled to the hinge 27; a rectangular top plate 32 orthogonally coupled to the rear wall 31; a rectangular front wall 33 orthogonally coupled to the top plate 32; and paired side walls 34. The paired side walls 34 each have a trapezoidal shape, and respectively couple the side edges of the rear wall 31, the top plate 32, and the front wall 33. As described above, the lid member 3 is pivotable about the hinge 27. When the lid member 3 is closed, the oblique sides of the side walls 34 thereof, that is, the inclined lower end edges of the side walls 34 thereof respectively fit the upper end edges 25a of the side walls 25 of the outer box 21.

[0023] The package 1 includes a flat plate spring member 4 provided on a housing space side of the package body 2. Fig. 3 illustrates a blank material of the flat plate

spring member 4. The flat plate spring member 4 is a thin flat plate member, and is made of a paper material such as cardboard or manila board in the present embodiment, similarly to the package body 2 and the lid member 3.

5 The blank material of the flat plate spring member 4 has a rectangular shape, and includes a first region portion 41 and a second region portion 42. A body-side attachment portion 43 and a lid-side attachment portion 44 are respectively formed on the outer end sides of the first region portion 41 and the second region portion 42.

10 **[0024]** In the course of manufacture (assembling) of the package 1, an adhesive is applied to the body-side attachment portion 43 of the first region portion 41, whereby the body-side attachment portion 43 is fixed (attached) to the package body 2. Similarly, an adhesive is applied to the lid-side attachment portion 44 of the second region portion 42, whereby the lid-side attachment portion 44 is fixed (attached) to the lid member 3. Moreover, a bend line (fold line) 45 parallel to the short-side direction of the blank material of the flat plate spring member 4 is formed at the boundary between the first region portion 41 and the second region portion 42. This blank material can be bent in both the mountain fold direction and the valley fold direction at the boundary along the bend line 45.

25 **[0025]** The flat plate spring member 4 is described with reference to Fig. 4A, Fig. 4B, Fig. 5A, and Fig. 5B. Fig. 4A is a transparent perspective view of the package 1 in the state where the lid member 3 is closed. Fig. 4B is a transparent perspective view of the package 1 in the state where the lid member 3 is opened. Fig. 5A is a longitudinal sectional view of the package 1 in the state where the lid member 3 is closed. Fig. 5B is a longitudinal sectional view of the package 1 in the state where the lid member 3 is opened. In Fig. 4A and Fig. 4B, the flat plate spring member 4 is indicated by solid lines, and the other components are indicated by chain double-dashed lines. Moreover, in Fig. 5A and Fig. 5B, illustration of the inner frame 22 is omitted.

30 **[0026]** The body-side attachment portion 43 formed on the outer end side of the first region portion 41 of the flat plate spring member 4 is bonded to the inner surface of the outer box 21 of the package body 2, more specifically, the inner surface of the rear wall 24. Then, the lid-side attachment portion 44 formed on the outer end side of the second region portion 41 of the flat plate spring member 4 is bonded to the inner surface of the top plate 32 of the lid member 3. As a result, the flat plate spring member 4 is provided inside of the package 1, that is, on the housing space side of the package body 2, and is fixed to the inner surface thereof.

35 **[0027]** The bend line 45 of the flat plate spring member 4 is formed so as to be parallel to the hinge 27 (hinge line). In other words, the flat plate spring member 4 is bonded to each of the package body 2 and the lid member 3 such that the bend line 45 thereof is parallel to the hinge 27. Then, the first region portion 41 of the flat plate spring member 4 is provided on the package body 2 side, and

the second region portion 42 thereof is provided on the lid member 3 side. Moreover, the flat plate spring member 4 is fixed to the inner surface of the package 1 such that the bend line 45 is placed at a position higher than the hinge 27 in the height direction of the package 1 (corresponding to the direction from the bottom wall 26 to the top plate 32 and the direction along the front wall 23 and the rear wall 24). Accordingly, the flat plate spring member 4 is set such that part of the first region portion 41 protrudes from the upper part of the outer box 21 of the package body 2.

[0028] Here, the dimensions of each portion of the package 1 are described. The direction orthogonal to the bend line 45 of the flat plate spring member 4 is defined as the length direction of the flat plate spring member 4. Then, a portion of the flat plate spring member 4 in which the body-side attachment portion 43 of the first region portion 41 is fixed to the inner surface (in the present embodiment, the rear wall 24) of the outer box 21 of the body package 2 is defined as "first fixing portion P1", and the size of a straight line connecting the first fixing portion P1 and the bend line 45 is defined as "first size S1". Note that, in the case where the body-side attachment portion 43 has a certain margin for bonding as in the present embodiment, the first fixing portion P1 indicates the inner end position of the body-side attachment portion 43 of the first region portion 41.

[0029] Meanwhile, a portion of the flat plate spring member 4 in which the lid-side attachment portion 44 of the second region portion 42 is fixed to the inner surface (in the present embodiment, the top plate 32) of the lid member 3 is defined as "second fixing portion P2", and the size (distance) of a straight line connecting the second fixing portion P2 and the bend line 45 is defined as "second size S2". In the case where the lid-side attachment portion 44 has a certain margin for bonding as in the present embodiment, the second fixing portion P2 indicates the inner end position of the lid-side attachment portion 44 of the second region portion 42. The first fixing portion P1, the second fixing portion P2, the first size S1, and the second size S2 are illustrated in Fig. 5B.

[0030] Next, a third size S3 and a fourth size S4 are described with reference to Fig. 5A. Here, the size of a straight line connecting the first fixing portion P1 and the hinge 27 is defined as "third size S3". Meanwhile, the size of a straight line connecting the second fixing portion P2 and the hinge 27 is defined as "fourth size S4".

[0031] Here, the sizes of the first size S1, the second size S2, the third size S3, and the fourth size S4 each indicate the shortest distance in the direction orthogonal to the hinge 27 and the bend line 45, between the two target points. The first size S1 corresponds to a distance by which the first fixing portion P1 and the bend line 45 are spaced apart from each other in the direction orthogonal to the bend line 45, on the surface of the flat plate spring member 4. The second size S2 corresponds to a distance by which the second fixing portion P2 and the bend line 45 are spaced apart from each other in the

direction orthogonal to the bend line 45, on the surface of the flat plate spring member 4. Moreover, the third size S3 corresponds to a distance by which the first fixing portion P1 and the hinge 27 are spaced apart from each other in the direction orthogonal to the hinge 27 (the height direction of the package body 2), on the surface of the rear wall 24 of the package body 2 (more specifically, of the outer box 21). The fourth size S4 is the shortest distance linearly connecting the second fixing portion P2 and the hinge 27. That is, the fourth size S4 is not a distance along the surface of the lid member 3.

[0032] In the package 1 in the present embodiment, the sum of the first size S1 and the second size S2 is set to be longer than the sum of the third size S3 and the fourth size S4 ($S1 + S2 > S3 + S4$).

[0033] With regard to the package 1 having such a configuration as described above, an action of the flat plate spring member 4 when a user performs an opening/closing operation of the lid member 3 is described. The first region portion 41 of the flat plate spring member 4 is fixed to the inner surface of the package body 2, and the second region portion 42 thereof is fixed to the inner surface of the lid member 3, whereby a free pivot of the lid member 3 with respect to the package body 2 is restricted.

[0034] In the state where the lid member 3 is at its closed position as illustrated in Figs. 4A and 5A, the flat plate spring member 4 is maintained in a first tilted state in which the first region portion 41 is placed along the rear wall 24 of the package body 2 while the second region portion 42 is tilted toward the front of the package 1 with respect to the first region portion 41.

[0035] For example, when the user takes the tobacco product out of the package 1, the user opens and turns the lid member 3 from its closed position to such an opened position as illustrated in Fig. 4B and Fig. 5B. In conjunction with this opening action of the lid member 3, the lid member 3 turns about the hinge 27 toward the back side of the package 1. The first region portion 41 of the flat plate spring member 4 is fixed to the inner surface of the rear wall 24 of the package body 2 (outer box 21), and the second region portion 42 thereof is fixed to the inner surface of 32 of the lid member 3. Accordingly, in conjunction with the opening action of the lid member 3, the first region portion 41 and the second region portion 42 of the flat plate spring member 4 are bent relative to each other about the bend line 45. As a result, the tilt angle of the second region portion 42 with respect to the first region portion 41 gradually becomes gentler (shallower).

[0036] In the course in which the lid member 3 pivots from its closed position to its opened position, the flat plate spring member 4 in the first tilted state is bent about the bend line 45 while being moderately bowed due to its own flexural rigidity. That is, the flat plate spring member 4 functions as a plate spring, and is bent while the first region portion 41 and the second region portion 42 are bowed, so that the flat plate spring member 4 changes its posture in the direction in which the tilt angle of the

second region portion 42 with respect to the first region portion 41 gradually becomes gentler. Then, if the turn angle of the lid member 3 becomes a given angle or more, the flat plate spring member 4 is reversed at the boundary along the bend line 45, and changes its posture into a second tilted state in which the second region portion 42 is tilted toward the rear of the package 1 with respect to the first region portion 41.

[0037] When the flat plate spring member 4 is reversed at the boundary along the bend line 45, a resistance that has been transmitted to the user until then by turning the lid member 3 while bowing the flat plate spring member 4 is cancelled for a moment, and hence the resultant reaction is transmitted to the hands of the user. As a result, at the time of performing a lid opening operation of the package 1, the user can obtain such a feeling that the lid member 3 is opened to a predetermined opened position, and this can evoke a feeling of accomplishment. Moreover, the flat plate spring member 4 makes a sound when being reversed at the boundary along the bend line 45, and hence the user can also obtain such a feeling that the lid member 3 is opened, by hearing this sound. Note that the above-mentioned opened position refers to, for example, the state where the lid member 3 is opened to such a posture that enables the cigarettes inside of the package 1 to be smoothly taken out, as illustrated in Fig. 4A and Fig. 5B.

[0038] In the state where the lid member 3 is at its opened position as illustrated in Fig. 4B and Fig. 5B, the flat plate spring member 4 is maintained in the second tilted state. In this state, the inner surface of the top plate 32 of the lid member 3 is held by the second region portion 42 of the flat plate spring member 4, whereby a free pivot of the lid member 3 is restricted. As a result, the lid member 3 does not become unstable due to its own weight or paper repulsive force, and the user can maintain the package 1 in the opened state illustrated in Fig. 4B and Fig. 5B even without gripping the lid member 3. Note that the pivot restriction of the lid member 3 in this case refers to restricting a pivoting action that the opened lid member 3 is closed on its own due to its own weight, and it goes without saying that a pivoting action of the lid member 3 is allowed when the user intentionally closes the lid member 3 against the urging force of the plate spring member 4.

[0039] Meanwhile, the tobacco product such as cigarettes is housed in the package 1, and hence the first region portion 41 of the flat plate spring member 4 is pushed by the cigarettes toward the rear wall 24 of the package body. The push force that the cigarettes housed in the package body 2 push the first region portion 41 toward the rear wall 24 is transmitted from the first region portion 41 to the second region portion 42 and the lid member 3, and is used to hold the lid member 3 in its opened state. Hence, in the case where the user opens the lid member 3 of the package 1, the lid member 3 does not become unstable, and the lid member 3 can be stably held in its opened state.

[0040] In the case where the lid member 3 in its opened state is closed, the user performs, for example, an operation of pushing the lid member 3 toward the front of the package 1 with an appropriate force. As a result, the lid member 3 pivots (turns) in its closing direction about the hinge 27, against the urging force that the flat plate spring member 4 maintained in the second tilted state urges the inner surface of the lid member 3.

[0041] On this occasion, the first region portion 41 of the flat plate spring member 4 interferes with the cigarettes housed in the package body 2, to be thereby pushed by the cigarettes, and hence the first region portion 41 is restricted from being freely spaced apart from the rear wall 24. As a result, the flat plate spring member 4 is bent about the bend line 45 while the first region portion and the second region portion 42 are bowed. In this way, the tilt angle that the second region portion 42 is tilted rearward with respect to the first region portion gradually becomes gentler, and the flat plate spring member 4 is finally reversed at the boundary along the bend line 45, to thereby change its posture from the second tilted state to the first tilted state.

[0042] Then, if the flat plate spring member 4 is reversed at the boundary along the bend line 45 at the time of the lid closing operation of the lid member 3, similarly to the opening operation thereof, a reaction, a sound, and the like when the flat plate spring member 4 is reversed are transmitted to the user, whereby the user can obtain such a feeling that the lid member 3 is reliably closed.

[0043] As described above, because the package 1 includes the flat plate spring member 4, a free turn of the lid member 3 about the hinge 27 is restricted. As a result, the posture of the lid member 3 can be stably maintained in both the states where the lid member 3 is at its closed position and where the lid member 3 is at its opened position. In particular, even if the user does not grip the lid member 3, the lid member 3 is held in its opened state, and hence the user can smoothly take the housed object out of the package 1. Accordingly, it is possible to provide the package 1 having significantly high usability.

[0044] Then, in the adopted structure, the posture of the flat plate spring member 4 is switched between the first tilted state and the second tilted state at the time of an opening/closing operation of the lid member 3, and hence such a feeling that the lid member 3 is reliably opened/closed can be given to the user. As a result, an operation feeling, a use feeling, and the like of the package 1 can be improved, and a commercial value of the package 1 can be enhanced.

[0045] Further, in the package 1 in the present embodiment, the flat plate spring member 4 is set such that the bend line 45 is located higher than the hinge 27, and the flat plate spring member 4 is formed such that the sum of the first size S1 and the second size S2 is longer than the sum of the third size S3 and the fourth size S4. This produces the following effect. That is, when the lid member 3 is opened, an area near the bend line 45 of the flat

plate spring member 4 in the first tilted state can be more easily pushed out from the rear of the package 1 toward the front thereof. Conversely, when the lid member 3 is closed, an area near the bend line 45 of the flat plate spring member 4 in the second tilted state can be more easily pushed out from the front of the package 1 toward the rear thereof. As a result, at the time of opening/closing of the lid member 3, the flat plate spring member 4 can be more reliably switched between the first tilted state and the second tilted state.

[0046] Note that, in the state where the lid member 3 is closed as illustrated in Fig. 5A, an appropriate gap may be formed between the bend line 45 of the flat plate spring member 4 and the top plate 32 of the lid member 3. The gap that is formed between the bend line 45 and the top plate 32 in the state where the lid member 3 is closed is not limited to a particular size, but is preferably set to, for example, about 3 mm to 7 mm.

[0047] Moreover, in the package 1 in the present embodiment, the body-side attachment portion 43 of the first region portion 41 of the flat plate spring member 4 is fixed to the inner surface of the rear wall 24 of the outer box 21, but, for example, flap pieces may be respectively provided to both the side edges of an end part of the first region portion 41 on the side opposite to the bend line 45, and these flap pieces may be respectively bonded to the sides 25. Moreover, in the present embodiment, the lid-side attachment portion 44 of the flat plate spring member 4 is bonded to the top plate 32 of the lid member 3, but may be bonded to the front wall 33 instead. Moreover, as long as the first region portion 41 of the flat plate spring member 4 is integrally fixed to the inner surface of the package body 2 (outer box 21) while the second region portion 42 thereof is integrally fixed to the inner surface of the lid member 3, the fixing method therefor is not limited to the bonding and attaching method adopted in the present embodiment. Accordingly, for example, instead of providing the flat plate spring member 4 as a member independent of the lid member 3 and the package body 2, the package 1 including the flat plate spring member 4 may be formed by interfolding a single blank material.

<Embodiment 2>

[0048] Next, a package 1A according to Embodiment 2 is described with reference to Fig. 6 and Fig. 7. Fig. 6 is a diagram illustrating part of a blank material 100 for forming the package 1A according to Embodiment 2. Fig. 7 is a sectional view of the package 1A according to Embodiment 2. In the package 1A, components common to those in the package 1 according to Embodiment 1 are denoted by the same reference signs, whereby detailed description thereof is omitted. Fig. 7 illustrates a section of the package 1A that is cut along a plane parallel to the side walls 25 of the package body 2.

[0049] The package 1A in Embodiment 2 includes a flat plate spring member 4A having a function equivalent

to that of the flat plate spring member 4 described in Embodiment 1. The flat plate spring member 4A is formed from the same blank material 100 as the lid member 3 and the package body 2, and a mode of connecting the flat plate spring member 4A to the lid member 3 and the package body 2 is different from that in Embodiment 1.

[0050] The blank material 100 illustrated in Fig. 6 mainly represents a portion corresponding to the flat plate spring member 4A and part of the lid member 3. For example, a paper material such as cardboard or manila board is used for the blank material 100. A positioning panel 101 for forming a positioning portion 46 to be described later is formed on one end side of the blank material 100. Then, a first region panel 102, a second region panel 103, a front wall inner panel 104, a front wall outer panel 105, and a top plate panel 106 are continuous with the positioning panel 101 in the stated order. Broken lines in Fig. 6 indicate interfold lines along which the blank material 100 is interfolded.

[0051] The positioning portion 46 is described later in detail. The first region panel 102 and the second region panel 103 respectively form the first region portion 41 and the second region portion 42 of the flat plate spring member 4A in the state where the blank material 100 is fabricated as the package 1A. Moreover, the bend line 45 is formed in a boundary part between the first region portion 41 and the second region portion 42. In addition to the above-mentioned interfold line, slits are formed in a part of the blank material 100 corresponding to the bend line 45, and this enables the blank material 100 to be bent in both the mountain fold direction and the valley fold direction. Note that technical features of the first region portion 41, the second region portion 42, and the bend line 45 are as described in Embodiment 1. Moreover, the front wall inner panel 104 and the front wall outer panel 105 are folded back at the boundary therebetween, to thereby form the front wall 33 of the lid member 3 as a double wall. The top plate panel 106 is a panel for forming the top plate 32 of the lid member 3.

[0052] A part of the front wall 33 formed by the front wall outer panel 105 is referred to as outer wall portion 33A, and a part thereof formed by the front wall inner panel 104 is referred to as inner wall portion 33B. In the package 1A, a boundary part between the second region portion 42 of the flat plate spring member 4A and the inner wall portion 33B of the front wall 33 corresponds to the second fixing portion P2 described in Embodiment 1, and is bonded to the top plate 32 of the lid member 3. Further, in the package 1A, the first region portion 41 and the positioning portion 46 of the flat plate spring member 4A are folded and placed as illustrated in Fig. 7. Moreover, in the package 1A, a boundary part between the first region portion 41 and the positioning portion 46 of the flat plate spring member 4A corresponds to the first fixing portion P1, and is bonded to the rear wall 24 of the package body 2.

[0053] As illustrated in Fig. 6, the length (in Fig. 6, reference sign X) of the positioning panel 101 of the blank

material 100 is larger than the length (in Fig. 6, reference sign Y) of the first region panel 102 thereof. The "length" in this case indicates, for example, a length in the direction orthogonal to the bend line 45 formed at the boundary between the first region panel 102 and the second region panel 103 of the blank material 100.

[0054] Here, the positioning portion 46 is a member for preventing misalignment of the position at which the first region portion 41 of the flat plate spring member 4A is bonded to the rear wall 24, from a desired position at the time of forming the package 1A. That is, at the time of forming the package 1A, the leading end of the positioning portion 46 that is folded back with respect to the first region portion 41 abuts against the inner surface of the top plate 32 of the lid member 3. In the state where the leading end of the positioning portion 46 abuts against the inner surface of the top plate 32 in such a manner, the boundary part (first fixing portion P1) between the first region portion 41 and the positioning portion 46 is bonded to the rear wall 24 of the package body 2. In this way, the first fixing portion P1 in which the first region portion 41 of the flat plate spring member 4A is fixed to the package body 2 can be easily bonded to a predetermined proper position. That is, because the package 1A includes the positioning portion 46, when the first region portion 41 of the flat plate spring member 4A is bonded to the package body 2, misalignment of the position of the first fixing portion P1 that is the bonding portion therebetween can be less likely to occur.

[0055] Further, in the state where the lid member 3 is closed, a gap space is formed above the bend line 45 of the flat plate spring member 4A, and the size of the gap formed between the inner surface of the top plate 32 and the bend line 45 is substantially equal to the difference between the length X of the positioning panel 101 (positioning portion 46) and the length Y of the first region panel 102 (first region portion 41). Accordingly, in the package 1A according to the present embodiment, the difference between the length Y and the length X is adjusted, whereby the flat plate spring member 4A can be easily placed such that the bend line 45 has a desired height.

<Embodiment 3>

[0056] Next, a package 1B according to Embodiment 3 is described with reference to Fig. 8 and Fig. 9. The package 1B according to the present embodiment includes an inner frame 22A that is different from the inner frame 22 according to Embodiment 1. Here, description is given focusing on difference from the package 1 in Embodiment 1, and components common to those of the package 1 are denoted by the same reference signs, whereby detailed description thereof is omitted.

[0057] Fig. 8 and Fig. 9 are perspective views of the package 1B according to Embodiment 3. The package 1B includes the outer box 21 and the inner frame 22A. The outer box 21 is common to that in Embodiment 1.

Moreover, the inner frame 22A includes: the front frame 28 having a substantially U shape; the side frames 29 respectively coupled to both the side edges of the front frame 28; and back frames 29A respectively coupled to the leading ends of the side frames 29. That is, the package 1B in the present embodiment has a feature that the inner frame 22A includes the back frames 29A.

[0058] The front frame 28 of the inner frame 22A is equal in inner size to the front wall 23 of the outer box 21, and the paired side frames 29 are equal in inner size to the side walls 25 of the outer box 21. Moreover, each back frame 29A is coupled to an end part of each side frame 29 that is not coupled to the front frame 28. Moreover, each back frame 29A is interfolded in the direction orthogonal to the side frames 29 and toward the inside of the housing space, and is placed such that the back surface of the back frame 29A extends along and is opposed to the surface of the first region portion 41 of the flat plate spring member 4.

[0059] The inner frame 22A having such a configuration as described above reinforces the open end of the outer box 21, and also functions to guide opening/closing of the lid member 3, as described in Embodiment 1. In addition, at the time of closing the lid member 3 in its opened state, the inner frame 22A functions to assist an action when the flat plate spring member 4 in the second tilted state is switched to the first tilted state.

[0060] As described above, the housed object that is housed in the package 1B interferes with the first region portion 41 of the flat plate spring member 4 at the time of a lid closing operation of the lid member 3, whereby switching of the flat plate spring member 4 from the second tilted state to the first tilted state is promoted. Unfortunately, for example, in the case where the number of the cigarettes housed in the package body 2 is small, at the time of the lid closing operation of the lid member 3, it is likely to become more difficult for the cigarettes to restrict movement of the first region portion 41 of the flat plate spring member 4.

[0061] In this regard, in the package 1B according to the present embodiment, the inner frame 22A including the back frames 29A is set in the package body 2. Then, when the lid member 3 pivots from its opened position to its closed position, the back frames 29A abut against the first region portion 41 of the flat plate spring member 4, and thus can restrict the first region portion 41 from moving from the rear wall 24 side of the package body 2 toward the front wall 23 side thereof. In the present embodiment, the back frames 29A correspond to restriction means.

[0062] As described above, according to the package 1B in the present embodiment, at the time of the lid closing operation of the lid member 3, the back frames 29A restrict the first region portion 41 of the flat plate spring member 4 from moving frontward, and hence the second region portion 42 can be more easily bent relative to the first region portion 41. As a result, the reverse of the flat plate spring member 4 can be promoted to be more easily

switched from the second tilted state to the first tilted state. That is, according to the package 1B, at the time of the lid closing operation of the lid member 3, the flat plate spring member 4 can be even more reliably reversed regardless of the type, amount, and the like of the housed object. Accordingly, it is possible to provide the box-type package that can satisfactorily bring the user a feeling that the lid member 3 is opened/closed.

[0063] Hereinabove, some preferred embodiments of the present invention have been described, but the box-type package according to the present invention can be carried out by combining the embodiments as much as possible. Moreover, in the present embodiments, description is given of the case where the package houses therein the tobacco product such as filtered cigarettes and non-filtered cigarettes, which is taken as a preferred application example of the housed object that is housed in the box-type package, but the present invention is not limited thereto, and the package may house therein articles other than the tobacco product.

Reference Signs List

[0064]

1, 1A, 1B	box-type package
2	package body
3	lid member
4, 4A	flat plate spring member
21	outer box
22, 22A	inner frame
23	front wall
24	rear wall
25	side wall
26	bottom wall
27	hinge
41	first region portion
42	second region portion
43	body-side attachment portion
44	lid-side attachment portion
45	bend line

Claims

1. A box-type package comprising:

a package body having an open end in an upper part thereof;
 a lid member that is pivotably coupled to a rear opening edge of the open end by means of a hinge and opens/closes the open end; and
 a flat plate spring member placed inside of the package, the flat plate spring member having one end fixed to an inner surface of the package body and having another end fixed to an inner surface of the lid member, wherein the flat plate spring member includes a bend line

parallel to the hinge, a first region portion fixed to the package body, and a second region portion fixed to the lid member, and when the first region portion and the second region portion are bent relative to each other at a boundary along the bend line in conjunction with an opening/closing action of the lid member, a posture of the flat plate spring member is switched between: a first tilted state in which the second region portion is tilted frontward with respect to the first region portion; and a second tilted state in which the second region portion is tilted rearward with respect to the first region portion.

2. The box-type package according to claim 1, wherein the bend line of the flat plate spring member is formed at a position higher than that of the hinge.

3. The box-type package according to claim 1 or 2, wherein a sum of a first size and a second size is longer than a sum of a third size and a fourth size, the first size being a size of a straight line connecting the bend line and a first fixing portion in which the first region portion of the flat plate spring member is fixed to the package body, the second size being a size of a straight line connecting the hinge and a first fixing portion in which the second region portion of the flat plate spring member is fixed to the lid member, the third size being a size of a straight line connecting the hinge and the first fixing portion, the fourth size being a size of a straight line connecting the hinge and the second fixing portion.

4. The box-type package according to any one of claims 1 to 3, further comprising restriction means provided to the package body, the restriction means abutting against the first region portion of the flat plate spring member to thereby restrict the first region portion from moving frontward when the lid member is closed.

5. The box-type package according to any one of claims 1 to 4, wherein an object housed in the package is a tobacco product.

FIG. 1

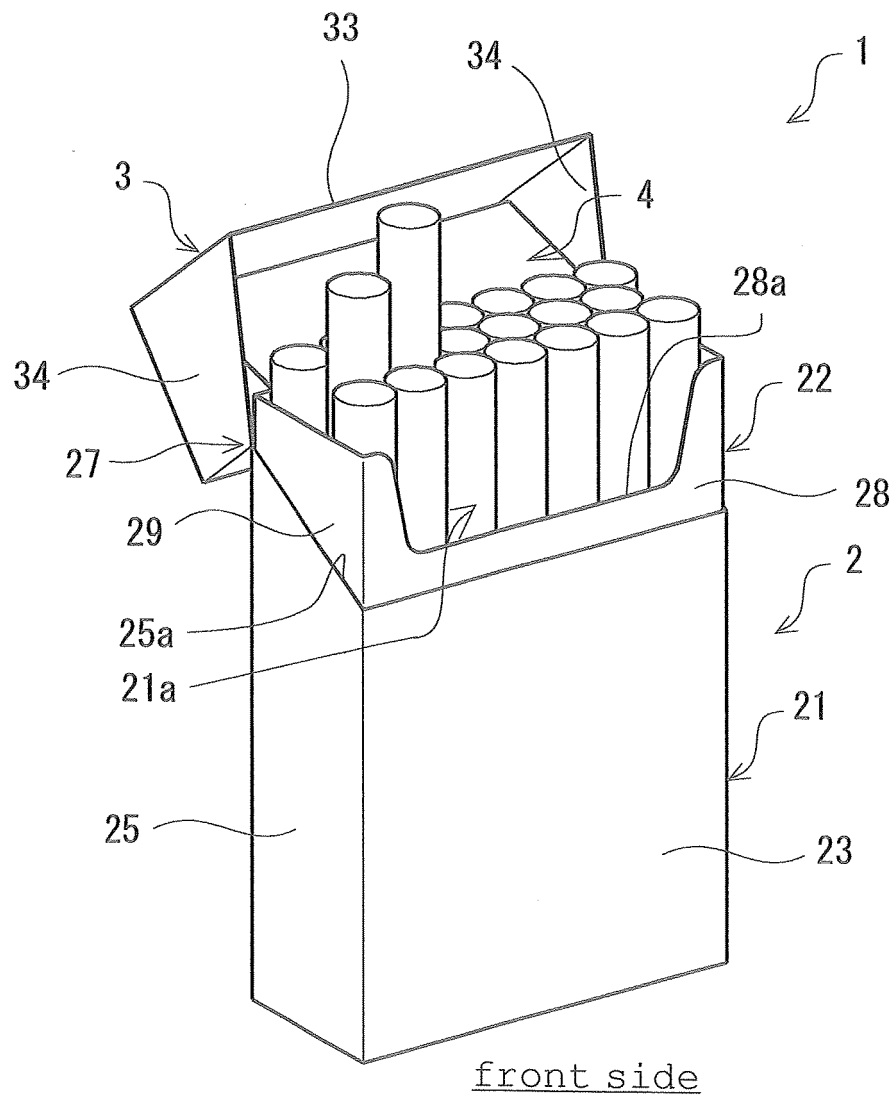


FIG. 2

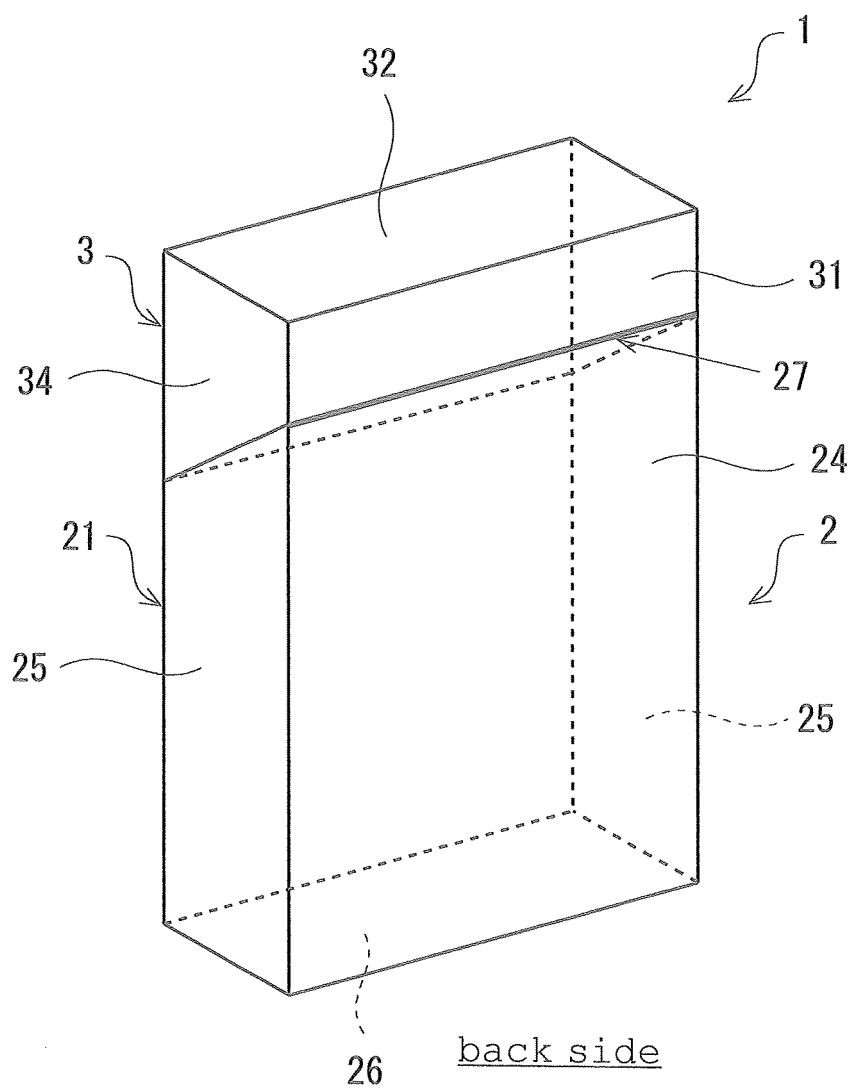


FIG. 3

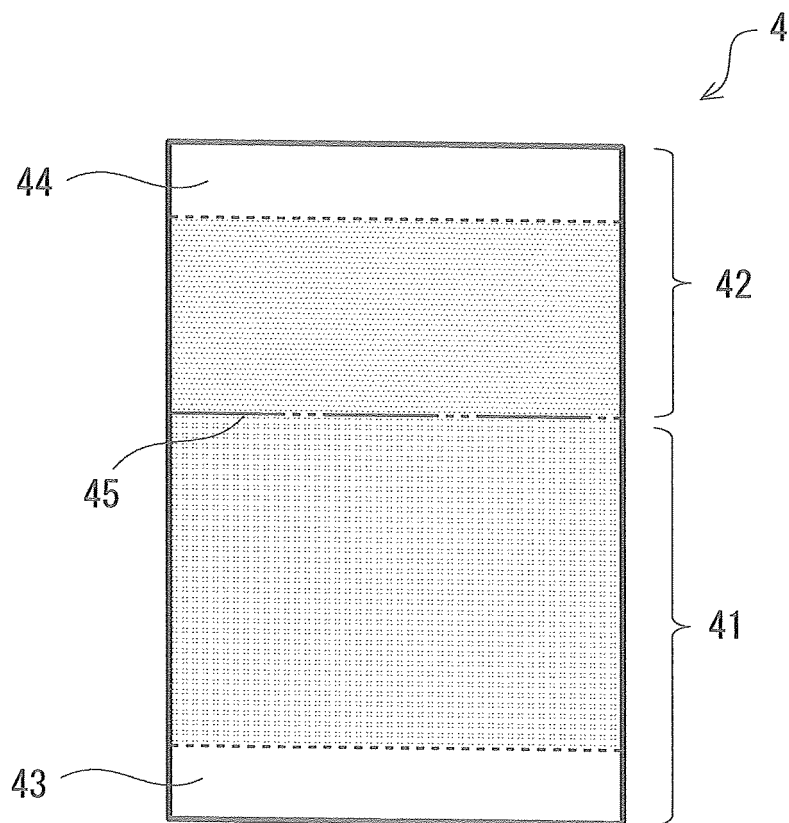


FIG. 4A

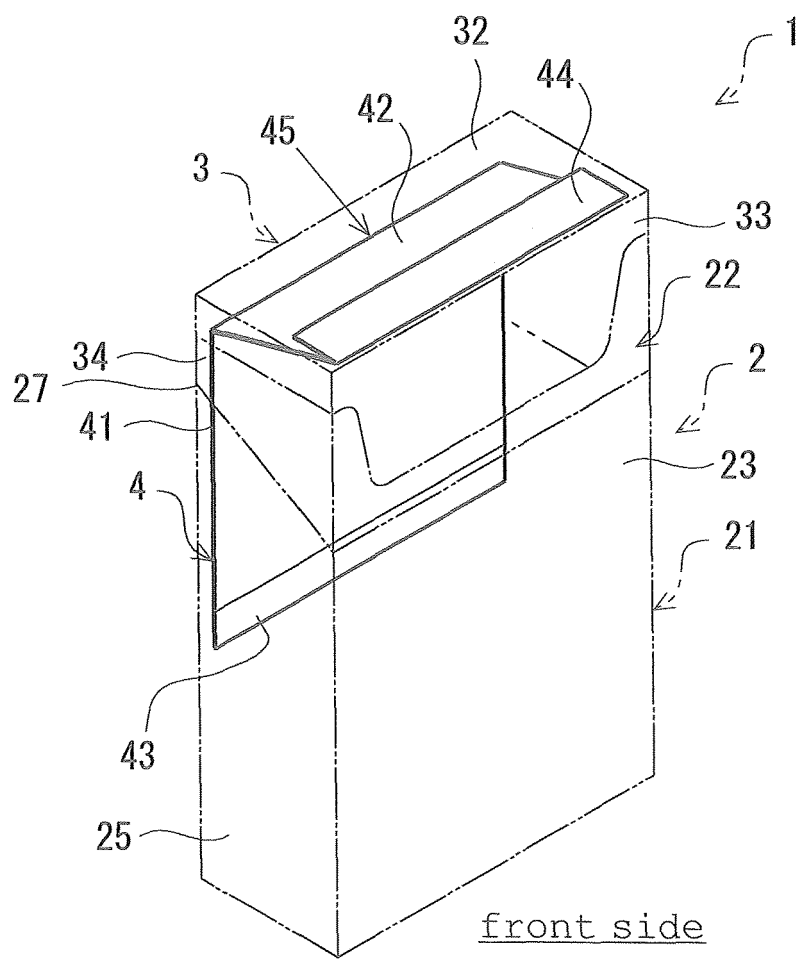


FIG. 4B

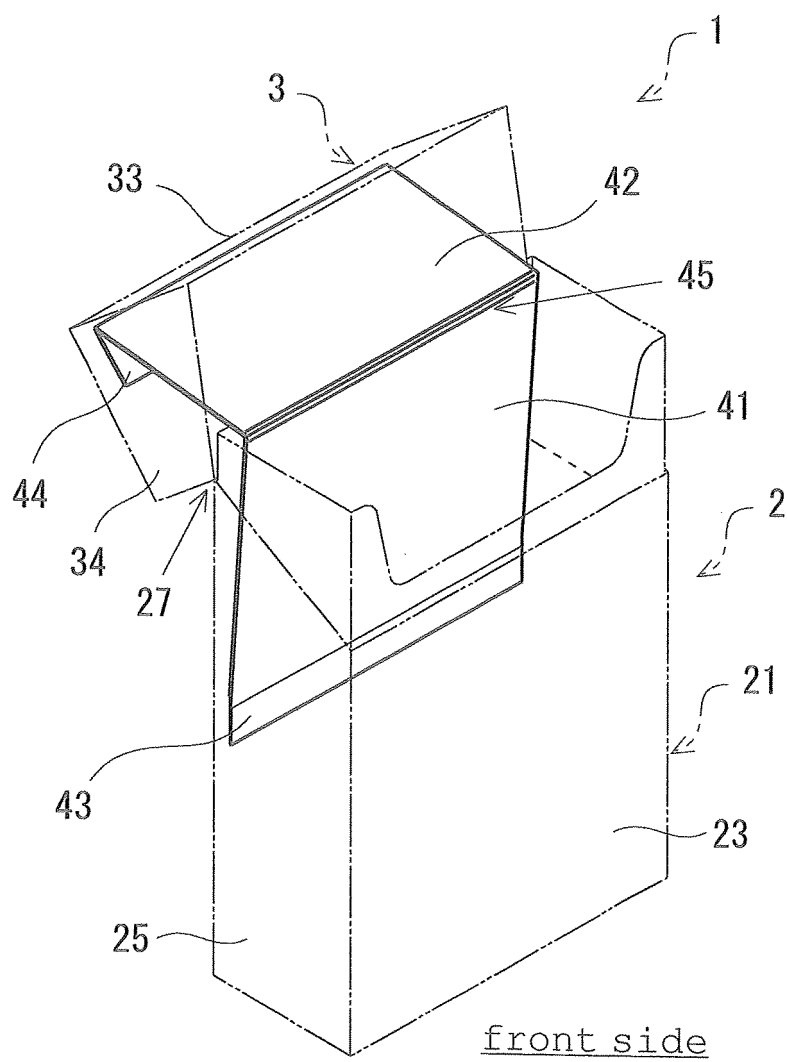


FIG. 5A

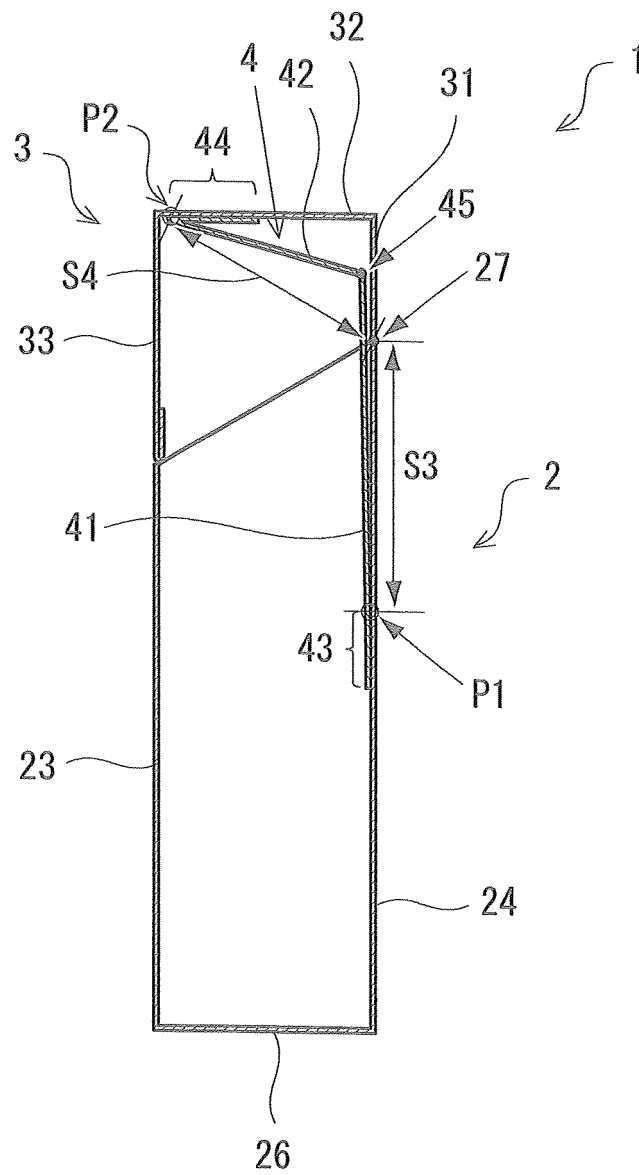


FIG. 5B

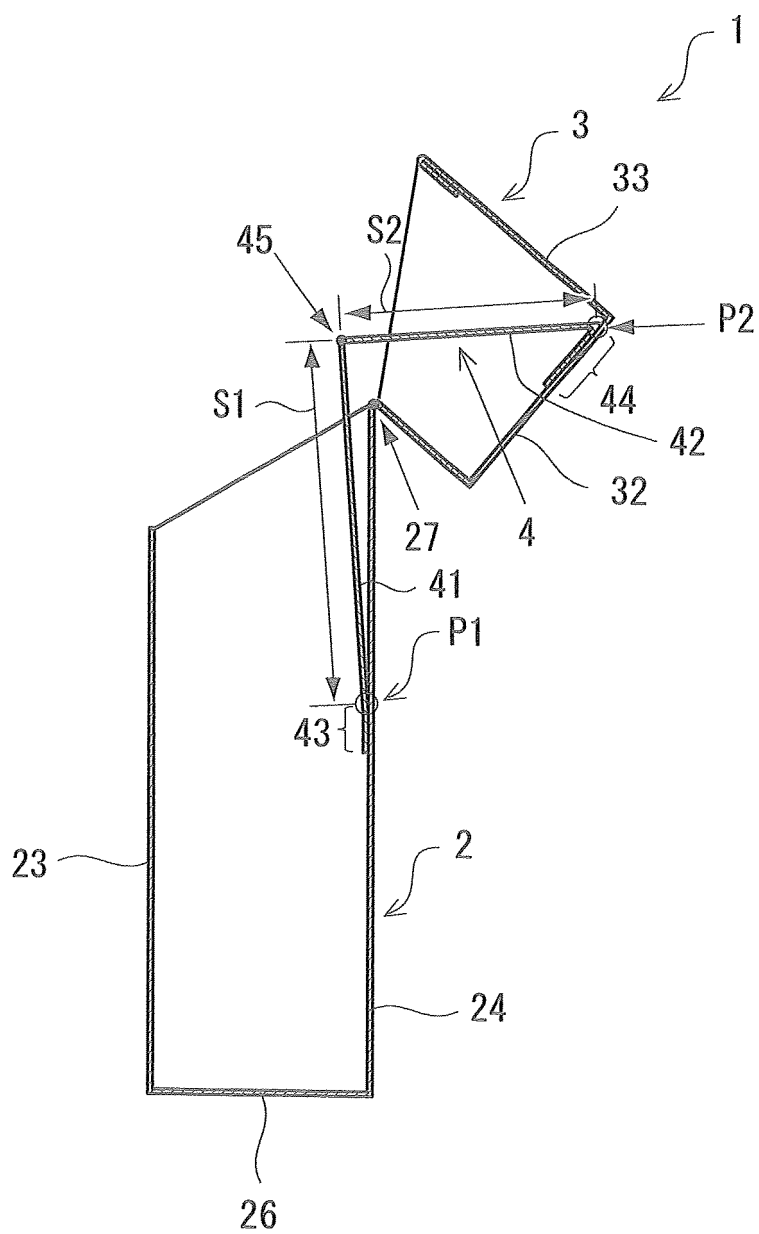


FIG. 6

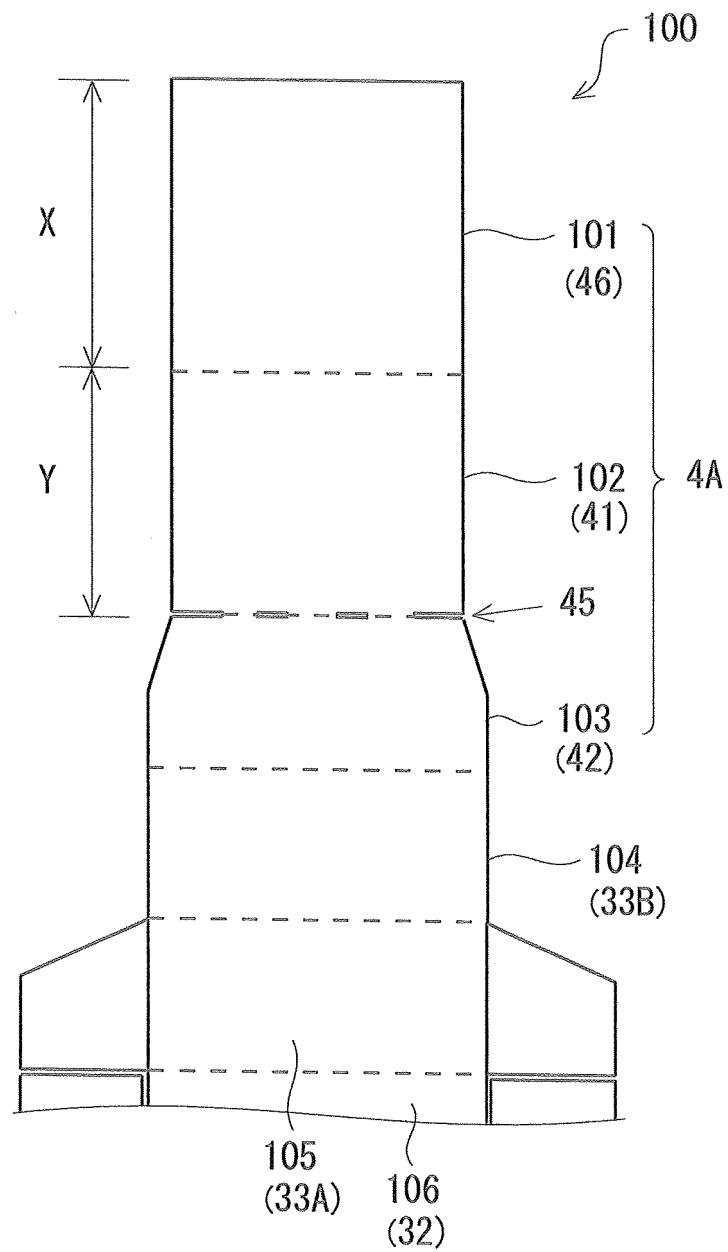


FIG. 7

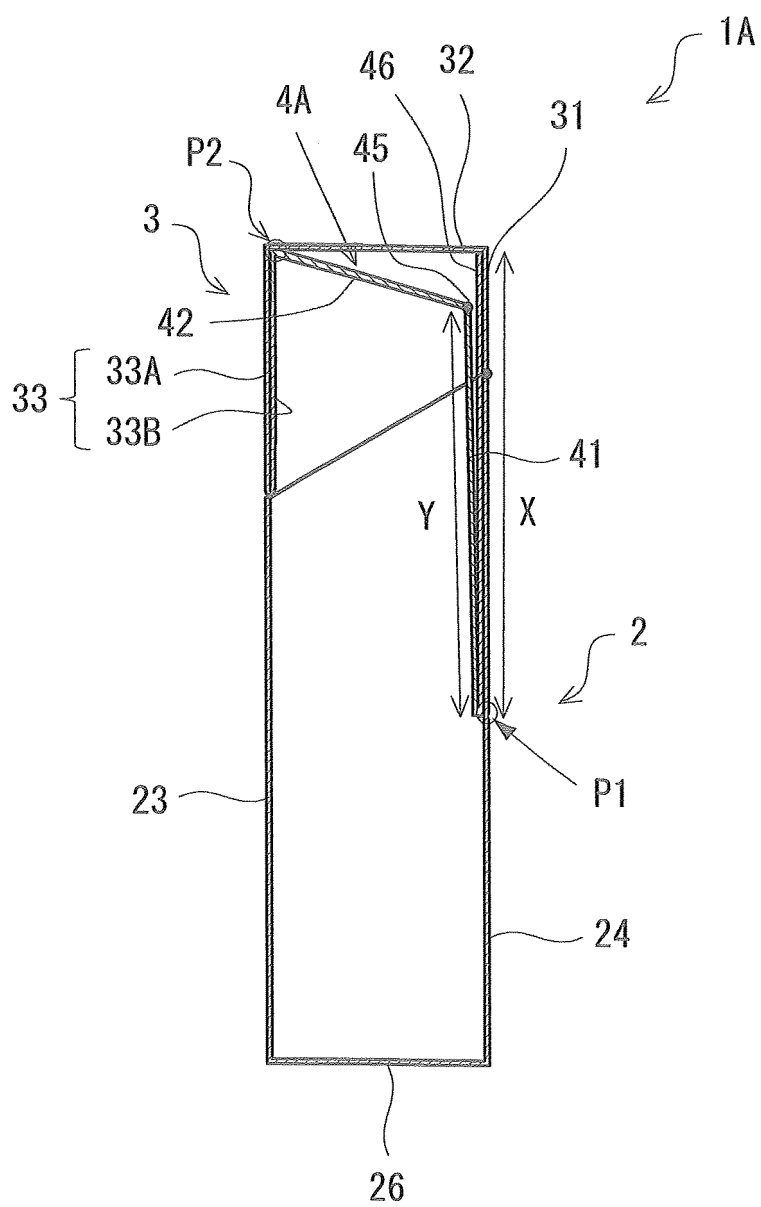


FIG. 8

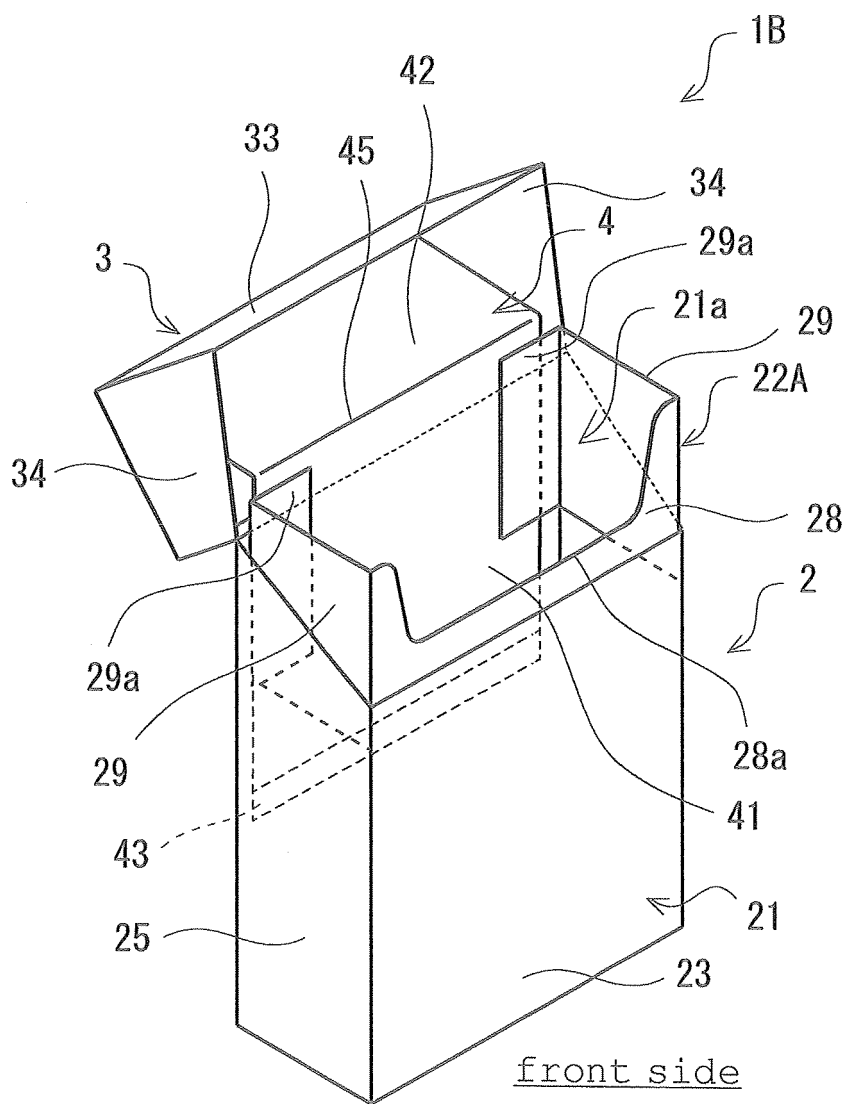
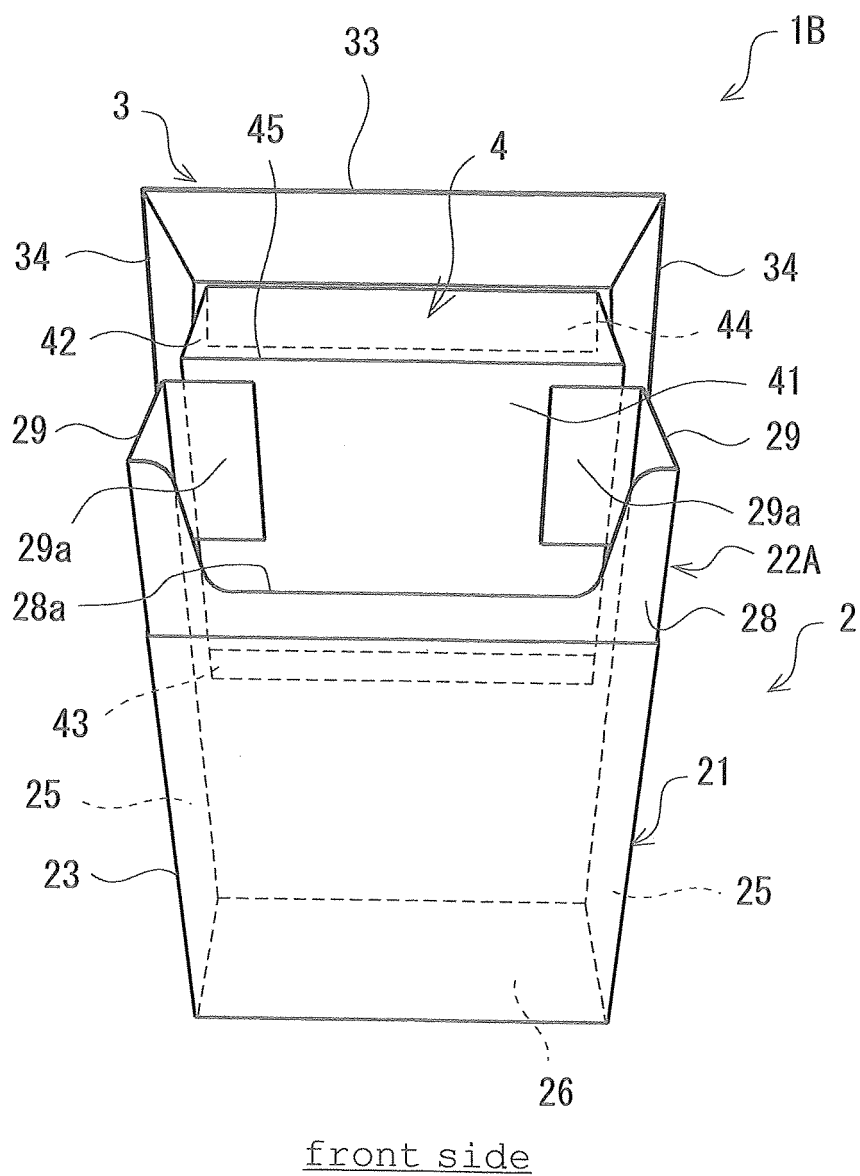


FIG. 9



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/077938

A. CLASSIFICATION OF SUBJECT MATTER

B65D5/66 (2006.01) i

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)

B65D5/66

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

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2011
Kokai Jitsuyo Shinan Koho	1971-2011	Toroku Jitsuyo Shinan Koho	1994-2011

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.
A	US 3472362 A (Ted Y. Shinoda), 14 October 1969 (14.10.1969), column 2, line 21 to column 4, line 6; fig. 1 to 6 (Family: none)	1-5
A	JP 59-4910 Y2 (Furubayashi Shiko Co., Ltd.), 14 February 1984 (14.02.1984), column 2, line 6 to column 4, line 12; fig. 1 to 8 (Family: none)	1-5
A	WO 2007/043797 A1 (Park, Sang-Kyu), 19 April 2007 (19.04.2007), (Family: none)	1-5

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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Date of the actual completion of the international search
26 December, 2011 (26.12.11)Date of mailing of the international search report
10 January, 2012 (10.01.12)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/077938

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 43-27187 B1 (Shoichi HASEGAWA), 21 November 1968 (21.11.1968), (Family: none)	1-5
A	US 3933299 A (Katsuji Shimada), 20 January 1976 (20.01.1976), (Family: none)	1-5
A	JP 3971301 B2 (G.D S.p.A.), 05 September 2007 (05.09.2007), & US 2004/0026271 A1 & EP 1322531 A & WO 2002/028745 A1 & DE 60116509 D & CN 1527785 A & AT 314980 T & AU 9019301 A	1-5
A	JP 32-5090 Y1 (Kei NAGATA), 11 June 1957 (11.06.1957), (Family: none)	1-5
A	WO 2009/148034 A1 (Japan Tobacco Inc.), 10 December 2009 (10.12.2009), & JP 2009-292516 A & US 2011/0062175 A1 & EP 2305567 A1 & CN 102046478 A & KR 10-2011-0002087 A	1-5
A	JP 41-16921 Y1 (Konishiroku Photo Industry Co., Ltd.), 05 August 1966 (05.08.1966), (Family: none)	1-5

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 4205587 B [0003]
- JP 4485725 B [0003]
- JP 2008522910 A [0003]
- JP 2005510224 A [0003]
- JP 3253624 B [0003]