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[57]	Abstract:	The purpose of the present invention is to provide a packing box wherein strength is improved and efficiency of opening, content retrieval, etc. is improved. The present invention is a packing box obtained from an upper cover and a lower box configured from cardboard for accommodating articles therein, in which: the upper cover is obtained from a top board that covers the entire interior of the lower box and side boards that extend vertically downward from each side of the top board and substantially cover the side surfaces of the lower box; and at least one notch is provided on one of the lower edges of the upper cover.		

PACKING BOX

TECHNICAL FIELD

The present invention relates to a packing box including an upper cover and a lower box that are formed by cardboard, and to a packing box that is configured to contain, for example, a film of a width of about 0.5 to 2 meters that is wound around a longitudinal core, i.e., a film roll. The film is stuck to a glass window or other surfaces mainly by hand, and examples of the film include a shatterproof film, a thermal insulation film, and a UV-cutting film. At a construction site or the like, these films are cut into a desired width and length by hand to be stuck to a glass window or other surfaces, after the packing box is opened.

BACKGROUND ART

Unfortunately, such a cardboard-made packing box has a low strength, and is long particularly in a longitudinal direction, so that it is easily bent at around its middle portion. In addition, such a packing box accommodating a film roll is easily bent when the packing box is placed on a pallet for transportation and it sticks out from the pallet. That is, a packing box that is long in the longitudinal direction sometimes concentrates weight at end portions of the box, and when a corner of the pallet hits the packing box at a portion other than the end portions, the packing box is pressed at the portion to be easily bent. The packing box is also easily bent when it is stacked into two or more tiers and the stacked packing

boxes are shifted to each other.

Moreover, because such a packing box is long in the longitudinal direction, it is less workable and painstaking for one worker to remove the upper cover after opening the box.

Furthermore, in taking out a film in desired width and length from the film roll, the worker needs to measure the length with a measure or other tools and then position a cutter for cutting the film every time, which is also less workable and painstaking. Also, a cut surface of the cardboard which is formed by cutting the cardboard during the manufacture of the packing box is exposed, thereby easily scattering paper dust particles. The paper dust particles adhere to the film due to static electricity, further reducing the workability.

CITATION LIST

PATENT LITERATURE

[0005]

PATENT LITERATURE 1: JP-A-2008-230670

PATENT LITERATURE 2: JP-A-2013-193782

SUMMARY OF INVENTION

TECHNICAL PROBLEM

In view of the above problems, the present invention has an object to provide a packing box configured to accommodate an article therein, the packing box including an upper cover and a lower box that are formed by cardboard, the upper cover including a top board covering the entire interior of the lower box, and side boards extending vertically downward from

the respective sides of the top board and substantially covering side surfaces of the lower box, the top board having at least one pair of perforated portions at locations point-symmetrical to each other about the center of gravity of the top board, the perforated portions being configured to be bendable.

SOLUTION TO PROBLEM

In order to achieve the object, the present invention provides a packing box configured to accommodate an article therein, the packing box including an upper cover formed by cardboard and a lower box formed by cardboard. The upper cover includes a top board covering the entire interior of the lower box, and side boards extending vertically downward from the respective sides of the top board and substantially covering side surfaces of the lower box. The top board has at least one pair of perforated portions at locations point-symmetrical to each other about the center of gravity of the top board. The perforated portions are configured to be bendable.

According to such a packing box of the present invention, while the perforated portions are bent, a worker can lift the upper cover with a finger(s) in the holes. Thus, the present invention improves work efficiency of opening the packing box. The holes formed at the perforated portions operate not only for the worker to place the finger(s) but also as air holes, thereby allowing the worker to open the box more easily. The packing box of the present invention is configured such that the perforated portions are bendable into the lower box. Accordingly, the worker

can lift the upper cover using the holes formed and open the box without being bothered by the protruding portions formed by bending the perforated portions.

The packing box of the present invention is configured such that when bent, the perforated portions each has a portion that curves outward from a surface of the top board of the upper cover.

According to such a packing box, the bent portions are spaced outward from the center inside the lower box, and thus the bent portions avoid contact with a film roll contained in the box, allowing the content to be safely handled.

The packing box of the present invention may be configured such that the upper cover further includes a pair of notches at a lower edge of each of the side boards in a longitudinal direction of the upper cover such that each pair of the notches is separated from the respective end portions by an equal distance.

According to such a packing box, when two workers stand at both end portions of the packing box and place their hands at the upper cover to open the box, the workers can place their hands at the notches, thereby improving work efficiency of opening the box. The notches may be formed in a variety of shapes, including one having a portion inclined upward at a predetermined angle from close to the center in the longitudinal direction and an arc portion continuous with the inclined portion. Provision of at least one notch can improve efficiency of opening the box. In this way, the packing box is configured considering the work at a site where the workers often work individually. Such a configuration that is provided with at least one notch

can reduce manufacturing costs of the upper cover.

The packing box of the present invention may be configured such that the lower box is provided with a graduation at an upper side of a longitudinal side board of the lower box, the graduation indicating lengths along the longitudinal direction.

According to such a packing box, in cutting the film while pulling out it from a film roll accommodated inside the box, the worker can grasp the desired width and easily determine the cutter position.

The packing box of the present invention may be configured such that at least longitudinal upper edges of the lower box are formed by folding back the cardboard.

According to such a packing box of the present invention, the longitudinal strength of the lower box can be improved, and cut surface of the cardboard is not exposed to inhibit scattering of paper dust particles. In addition, in taking out the film from the film roll, the film moves smoothly on the upper edges, thereby improving efficiency of taking out the film.

ADVANTAGEOUS EFFECTS OF INVENTION

According to the present invention, a packing box that is formed by cardboard and is long in the longitudinal direction can be improved in strength. The present invention can also improve work efficiency of a worker opening the box. Further, the present invention can improve efficiency of taking out a film from a film roll to be contained in the box to inhibit scattering of paper dust particles from the material, cardboard. In addition, a desired length of a film to be taken out

can be determined easily, improving efficiency of taking out the film.

BRIEF DESCRIPTION OF DRAWINGS

[FIG. 1A] Fig. 1A is a perspective view of a packing box according to the present invention that is in use.

[FIG. 1B] Fig. 1B is a perspective view of an upper cover of the packing box according to the present invention.

[FIG. 1C] Fig. 1C is a perspective view of a lower box of the packing box according to the present invention.

[FIG. 1D] Fig. 1D is a perspective view of a modification of the upper cover of the packing box according to the present invention.

[FIG. 2A] Fig. 2A is a developed view of the upper cover.

[FIG. 2B] Fig. 2B is a developed view of the lower box.

[FIG. 3A] Fig. 3A is a cross-sectional view of the packing box according to the present invention illustrating the packing box accommodating a content, a film roll.

[FIG. 3B] Fig. 3B is a perspective view of the packing box illustrating a film being taken out from the film roll accommodated in the box.

[FIG. 4] Fig. 4 is a plan view of example configurations of a perforated portion provided on the upper cover.

[FIG. 5] Fig. 5 is a perspective view of example configurations of a notch provided at a longitudinal lower edge of a side board of the upper cover.

[FIG. 6A] Fig. 6A is a perspective view of example configurations of graduation provided on a side surface

of the lower box.

[FIG. 6B] Fig. 6B is a perspective view of a modification where a slit is further provided in addition to the graduation.

[FIG. 7] Fig. 7 is a perspective view of a packing box according to another embodiment of the present invention.

[FIG. 8] Fig. 8 is a developed view showing yet another embodiment of the lower box of the packing box according to the present invention.

[FIG. 9] Fig. 9 is a developed view showing yet another embodiment of the upper cover of the packing box according to the present invention.

DESCRIPTION OF EMBODIMENTS

Fig. 1A is an overall perspective view of an example packing box 1 in use according to an embodiment of the present invention that is made of cardboard.

Figs. 1B and 1C are, respectively, perspective views of an example upper cover 10 and an example lower box 100 that form the packing box 1. The upper cover 10 includes a rectangular top board 11 that has longer sides extending in a longitudinal direction X and shorter sides extending perpendicular to the longer sides, in a shorter-side direction Y. The top board 11 is provided with side boards 12a, 12b, 12c, and 12d extending vertically downward from the respective sides and each substantially covering the corresponding side surface of the lower box 100.

The top board 11 is provided with a pair of perforated portions 20a and 20b at locations point-symmetrical to each other about the center of gravity G

of the upper cover 10. In opening the packing box 1 by oneself, a worker presses the perforated portions 20a and 20b to bend them into the box, place a finger(s) in the hole thus made, and lift the upper cover 10. At this time, the hole operates not only for placing the worker's finger(s) but also as an air hole, thereby further improving the efficiency of opening the box. The perforated portions may be configured to be bent outward.

Considering the work of opening the box, it is contemplated that the perforated portions 20a and 20b will be positioned to be point-symmetrical to each other about the center of gravity G, as in Fig. 1B. It is known that, generally, it is effective in such an opening work that the perforated portion corresponding to the worker's dominant arm, which is often the right arm, is farther than the one corresponding to the other arm. Thus, another pair of perforated portions 21a and 21b may also be provided. In this way, the worker may be at any working position relative to the packing box. The perforated portions may have any shapes as long as holes made by bending the perforated portions are as large as to receive one or two fingers. Each perforated portion, however, desirably has an arc-shaped periphery without a corner, because a corner in the perforated portion might cause a problem like easily breaking the cardboard from the corner. The positions of the perforated portions are not limited to those shown in Fig. 1B, and the perforated portions may be provided at any positions irrelevant to the center of gravity G. Also, the number of the perforated portions may be set appropriately, considering the work and convenience of

the worker. The perforated portions are not necessarily configured to be bent, and they may be configured to be removed. Moreover, a hole may be simply provided that can receive the worker's finger(s) at the location of each perforated portion, instead of the perforated portion. The perforated portions will be described later in detail.

The upper cover 10 is provided with notches 30a and 30b on both side boards 12b and 12d formed along longer sides of the upper cover 10. On each of the side boards, the notches 30a and 30b are formed at a predetermined distance from respective end portions of the side board. This configuration improves work efficiency, for two workers standing on the opposite end portions, of placing their hands at the upper covers and lifting the upper covers to open the box. The positions and the shape of the cuts are determined appropriately, but the cuts are positioned at an equal distance from the respective end portions. It is desirable that each cut be generally as large as a palm. The notch is basically formed in a triangle whose base aligned with a lower edge of the side board, and the triangle may be deformed appropriately. As an example, the notch may have a portion inclined at a predetermined angle from the center toward the end portion and an arc continuous with the inclined portion, as shown in Fig. 1B. The upper cover 10 may be provided with the notch 30a on only one of the side boards, close to one end surface, as shown in Fig. 1D. The provision of the only one notch can sufficiently improve work efficiency, considering that workers often work individually at a site, and also reduces the

manufacturing cost of the upper cover. It is desirable that the notch be formed to have no corners, similarly to the perforated portions. The notch will also be described later in detail.

Fig. 2A and Fig. 2B are developed view of the upper cover 10 and the lower box 100, respectively. Both the upper cover 10 and the lower box 100 can be formed by bending a piece of cardboard. As shown by a portion d in Fig. 2A, shorter sides of the upper cover 10 are formed by folding back the cardboard. Also, as shown by a portion d in Fig. 2B, longer sides of the lower box 100 are formed by folding back the cardboard. Because of the configuration, both the upper cover and the lower box can be improved in structural strength. In particular, the lower box 100 is improved in strength in the longitudinal direction. This avoids problems like bending of the lower box at the middle portion when accommodating a heavy object, or inhibits a depression due to an external impact or a depression that would be formed at the middle portion when the packing box is lifted. Further, the improved strength allows mounting of a cutter on a side surface of the lower box that will be described later. In addition, adoption of such a fold-back configuration prevents exposure of the cut surface of the cardboard to inhibit scattering of paper dust particles from the cardboard. The paper dust particles easily adhere to the film due to static electricity, and thus the inhibition of the scattering of them significantly improves the work efficiency. Moreover, the longer sides of the lower box are each formed by a surface of the cardboard, allowing the worker to smoothly take out the film contained.

Such graduation can be provided even if the packing box is configured to have only one notch, like in Fig. 1D.

Fig. 3A is a cross-sectional view of the packing box 1 in use, illustrating the packing box 1 accommodating the content, the film roll 40 and 41. Fig. 3B is a perspective view of the packing box 1 illustrating the content being taken out. The film roll 40 and 41 is a film 41 wound around a core 40 of a predetermined diameter and is supported by a pair of core holders/protectors 50a and 50b that are provided at both ends in the lower box 100. As shown in Fig. 3A, the perforated portions 20a and 20b are desirably shaped such that they will not contact the film 41 when bent to protrude into the lower box 100. The film 41 is to be stuck to a glass window or other surfaces by hand and examples of the film 41 include a so called shatterproof film, a thermal insulation film, and a UV-cutting film. As shown in Fig. 3B, the film 41 is taken out in a direction shown by a character L or other directions at, for example, a construction site, and cut in desired width and length, before stuck to a window or other surfaces. A cutter 60 may be configured such that it is fixed at a side surface of the lower box 100 by piercing the side surface with the cutter 60 and mounting the cutter 60, and cuts the film 41 as the film 41 is taken out, thereby providing a film of a desired width.

Fig. 4 is a plan view of example perforated portions 20a. It is desirable that the perforated portions be shaped not to contact the surface of the accommodated film and become spaced outward from the central line of the packing box, when the perforated

portions are bent to protrude into the box. Specifically, as shown in (1), (3), and (6) in Fig. 4, the perforated portions may each have a side inclined outwardly from the central line of the top board, so that the inclination inhibits the contact with the film. As shown in (2), (4), and (5) in Fig. 4, the perforated portions may each have a portion that curves outwardly from the central line, so that the curved portion inhibits the contact with the film. Desirably, these shapes have as few corner portions as possible. It is possible that the perforated portions and the film will not contact with each other even if the perforated portions protrude, depending on the size of the film roll contained. In that case, the perforated portions may be shaped like those in (7) or (8) in Fig. 4, and there is no need to consider spacing the perforated portions outward relative to the packing box. Cardboard processing costs for manufacturing the upper cover can be reduced by forming the perforated portions in a shape without any corners like in (7) or a simple shape like in (8). The perforated portions formed in shapes like in (2), (5), and (7), each of which has no corner and is rounded entirely, are punched clearly into the box when pressed by a finger(s) in starting the work, or is not broken at the bent portion when bent outwardly, making the worker more comfortable with the work.

Perforated portions shown in (9) to (11) of Fig. 4, each has a cut 1 at the center of the perforated portion and has a pair of bending pieces 20a1 and 20a2 that are separated from the cut to protrude into the lower box as they are pressed by the worker' finger(s).

Such a configuration allows the worker to make a hole at the perforated portion with less force, and also, can improve the work efficiency. Additionally, with such a configuration, only a desired one of the pair of bending portions can be bent or both of the pair of bending portions can be bent toward the respective sides, and thus, the configuration flexibly meets the work.

Fig. 5 is a perspective view of example notches 30a each of which is provided at the lower edge of the side board of the upper cover 10. The shape, positions, and number of the notches may be set appropriately. The notches are, however, intended for two workers standing at the opposite ends of the packing box for opening the box to lift the upper cover in cooperation with each other. Accordingly, it is desirable that the notches be provided on opposite side boards and that the notches on each side board be at an equal distance from the respective sides. It is also desirable that each cut be generally as large as a palm, so that the workers can easily place their hands. With this configuration, each worker moves their finger(s) along the linear portion, position the finger inside the arc portion, and open the box.

In Fig. 5, (1) shows a notch 30a having a linear portion inclined from the center of the packing box toward the end portion and an arc portion continuous with the linear portion. The angle of the inclined portion may be optimally set in accordance with the length of the longer sides of the upper cover, the physiques of the workers, or other factors. For example, the inclined portion is preferably inclined at

an angle of 25 degrees to 40 degrees relative to the lower side, and more preferably in the range of from 30 degrees to 36 degrees. The provision of the inclined portion allows the finger to smoothly move from the center of the packing box toward the end portion and easily fit into the arc portion.

A portion of the arc portion close to the lower edge may protrude further toward the center as shown in (3) in Fig. 5. In this way, the workers can stably hold the end portion of the upper cover with their fingers each placed on an upper surface of the protruding portion to be fixed.

In Fig. 5, (2) shows a notch that is formed at the lower edge of the side board, in a semi-circular shape having a diameter of the length of the notch. With such a configuration, the workers' fingers that fit inside the notches 30a are stabilized and the workers can stably hold the end portions of the upper cover.

In Fig. 5, (4) to (6) each shows a notch whose upper surface is formed in a flat portion. This configuration improves flexibility in the position of the worker's finger inside the notch. In particular, the configuration sufficiently accommodates different sizes of the workers' palms. Such a configuration is effective because of the fact that the content of the packing box, a film roll, which is in high demand both domestically and in foreign countries, is treated by workers of a variety of races with non-uniform physiques.

Fig. 6A is a perspective view of example lower boxes 100 having graduations 70a and 70b indicating a length, at a longitudinal upper edge of the lower box

100. In this way, in taking out the film 41 from the packing box and cutting the film 41 at a desired position along the longitudinal direction of the lower box 100, that is, the transverse direction of the film 41, the positions can be determined accurately and quickly. Such a graduation can be provided at a packing box that is configured to have only one notch like the one in Fig. 1d.

In Fig. 6A, (1) shows an example lower box that is graduated at a longitudinal upper edge of a side board at predetermined intervals. The origin of the graduation may be marked considering the thickness of the core holder/protector 50a in advance. In this case, the graduation may be provided not only at the side board 12b, but also on the side board 12d opposite to the side board 12b so as to make the work more efficient, based on the working procedure in opening the packing box.

In Fig. 6A, (2) shows an example lower box that additionally has a graduation 70b on the back of each of the side boards. It is probable that the worker needs to grasp the longitudinal length of the film within the inside of the packing box, depending on the working procedure. The provision of the graduation on the back of each side board is effective in such a case. Further, when the worker mounts the cutter 60 as in Fig. 3b, the provision of the graduation on both sides of the side board makes it easy to mount the cutter 60 such that the cutter 60 is oriented precisely perpendicular to the surface of the side board. In such mounting of the cutter, a graduated unit and a display position of the graduation on the front is desirably

aligned with those on the back. The graduated unit, however, is not necessarily the same in the front and the back and may be set appropriately in accordance with the necessity in the work. For example, the front and the back may be graduated differently, like in centimeters on the front and in inches on the back.

In Fig. 6A, (3) shows an example lower box having a graduation that is marked differently at portions 80 positioned at predetermined intervals than other portions. The interval may be determined appropriately in accordance with the necessity in the working procedure, such as 5 centimeters or 10 centimeters. With such a configuration, the worker can easily grasp the length of the film in the longitudinal direction, and quickly and reliably mount a slitting blade 85 that is used for cutting the film in a desired width while taking out the film, thereby improving the work efficiency. The slitting blade 85 may include a clip portion 85a for mounting the slitting blade 85 on the upper edge of the lower box and a blade portion 85b, for example. The blade portion 85b may be formed like a pin, depending on the material of the film.

One having a clip-shaped body that can be mounted on the upper edge of the lower box 100 and a blade provided upward on the clip-shaped body is suitably used as the slitting blade 85. With a slitting blade of such a configuration, the worker can cut the film while taking out the film.

In Fig. 6A, (4) shows a lower box 100 having such a graduation that includes special indications provided at predetermined intervals, also on the inside of the lower box 100.

Fig. 6B shows a lower box having a slit 90 at a predetermined position of the graduation 80. It can be more convenient to cut the taken out film while pulling the film downward than to cut the film over the lower box 100, depending on the material of the film. In such a case, it is advantageous in terms of work efficiency to mount the cutter 60 on the side board of the lower box 100 as shown in Fig. 3b. The advance provision of the slit 90 for attaching the cutter 60 improves work efficiency.

The packing box has been described that has a rectangular top board and is made of cardboard as shown in Fig. 1A as an embodiment of the present invention, while the present invention is not limited to such an embodiment.

For example, when the content of the box is not a film roll but in the form of cut-sheet paper of about 0.5 to 2 meters long and about 0.5 to 2 meters wide, an almost square box as shown in Fig. 7 is used. Such a packing box can also be provided with notches 30a and 30b as appropriate at a lower edge of an upper cover to improve work efficiency. A top board of the upper cover may have a perforated portion or a hole. Further, in order to make it easy to unfold the packing box after use, arc-shaped or semi-circular notches 31a to 31f, 32a, and 32b may be provided at tip edges of the fold-back flaps formed at the upper cover shorter sides or at tip edges of the fold-back flaps formed at the lower box longer sides to allow the worker to place a finger(s) at the notches, as shown in Figs. 8 and 9. The shape and the number of these notches may be set appropriately, considering the size, strength, and

shape of the entire box, and ease of placing a finger(s). It is contemplated that the notches are formed in an almost semi-circular shape or an almost U-shape of a size to receive about one to two fingers.

The configuration of the present invention has been described in detail, while the above description is intended merely to illustrate the invention, and those who have ordinary knowledge in the technical field to which the present invention belongs can make various modifications without departing from the essential characteristics of the invention. For example, the present invention can be configured as follows:

(1) a packing box configured to accommodate an article therein, the packing box including an upper cover and a lower box that are formed by cardboard, the upper cover including a top board covering the entire interior of the lower box, and side boards extending vertically downward from the respective sides of the top board and substantially covering side surfaces of the lower box, the top board having at least one pair of perforated portions at locations point-symmetrical to each other about the center of gravity of the top board, the perforated portions being configured to be bendable.

(2) the packing box according to the item (1), in which the perforated portions are configured to be bendable into the lower box.

(3) the packing box according to the item (1) or (2), in which when the perforated portions are bent into the lower box, the bent portions become spaced from the central line of the top board.

(4) the packing box according to any one of the items

(1) to (3), in which the bent portions of the perforated portions each have a line inclined outwardly from the central line of the top board.

(5) the packing box according to any one of the items (1) to (3), in which the bent portions of the perforated portions each have a portion that curves outwardly from the central line of the top board.

(6) the packing box according to any one of the items (1) to (5), in which the perforated portions each have a cut that is perpendicular to a longitudinal direction of the upper cover, and a pair of bending pieces configured to be separated from the cut and protrude into the lower box when bent.

(7) the packing box according to any one of the items (1) to (6), in which the upper cover is provided with at least one notch at a lower edge of a side board in a longitudinal direction of the upper cover.

(8) the packing box according to the items (1) to (7), in which the upper cover is provided with a pair of the notches at lower sides of both side boards in the longitudinal direction, at an equal distance from the respective ends.

(9) the packing box according to any one of the items (1) to (8), in which each of the notches has a flat portion that is parallel with the lower side.

(10) the packing box according to any one of the items (1) to (9), in which each of the notches has a linear part inclined vertically upward at a predetermined angle toward the corresponding end and an arc part continuous with the linear part.

(11) the packing box according to any one of the items (1) to (10), in which the predetermined angle is in a

range of from 25 degrees to 40 degrees.

(12) the packing box according to the items (1) to (11), in which each of the notches has a semi-circular shape having a diameter of the length of the notch.

(13) the packing box according to any one of the items (1) to (12), in which a flat portion is provided at an upper part of each of the notches.

(14) the packing box according to any one of the items (1) to (13), in which the lower box has a graduation at an upper side of a side board in a longitudinal direction, the graduation indicating a length in the longitudinal direction.

(15) the packing box according to any one of the items (1) to (14), in which the graduation is provided on both side boards in the longitudinal direction.

(16) the packing box according to any one of the items (1) to (14), in which the graduation is marked differently once every predetermined number of divisions, than other marks.

(17) the packing box according to any one of the items (1) to (16), in which the graduation is provided both on a front and a back of the side board.

(18) the packing box according to any one of the items (1) to (17), in which the lower box is further provided with a slit at a portion of the graduation provided with a division mark.

(19) the packing box according to any one of the items (1) to (18), in which at least longitudinal upper edges of the lower box are formed by folding back the cardboard.

Therefore, the embodiments disclosed herein are not intended to limit the present invention but to

describe the present invention, and the embodiments will not limit the spirit and scope of the present invention. The scope of the present invention should be interpreted from the appended claims, and all techniques within the range of equivalency should be interpreted as being included in the scope of the present invention.

REFERENCE SIGNS LIST

1	Packing box
10	Upper cover
11	Top board
12a to 12d	Side board
20a, 20b	Perforated portion
30a, 30b	Notch
100	Lower box
40, 41	Film roll
50a, 50b	Core holder/protector
60	Cutter
70a, 70b, 80	Graduation
85	Slitting blade
85a	Clip portion
85b	Blade portion
90	Slit

CLAIMS

1. A packing box configured to accommodate an article therein, the packing box comprising:

an upper cover formed by cardboard; and

a lower box formed by cardboard,

wherein the upper cover includes a top board covering an entire interior of the lower box, and side boards extending vertically downward from respective sides of the top board and substantially covering side surfaces of the lower box,

the upper cover has at least one notch for opening the upper cover at lower edges of the side boards such that the notch is located off a center of the packing box in a longitudinal direction and separated from both end portions in the longitudinal direction by a predetermined distance,

each of the notches has a linear part inclined vertically upward at a predetermined angle toward the corresponding end portion and an arc part continuous with the linear part, and

the notch is of a size large enough for at least one finger to be inserted thereinto.

2. The packing box according to claim 1, wherein the lower box is not provided with a notch at a position corresponding to the at least one notch.

3. The packing box according to claim 1 or 2, wherein the predetermined angle is in a range of from 25 degrees to 40 degrees.

4. The packing box according to claims 1 or 2,

wherein each of the notches has a flat portion that is parallel with the lower edge.

5. The packing box according to claims 1 or 2, wherein the upper cover is provided with a pair of the notches at a lower edge of each of the side boards in a longitudinal direction of the upper cover such that each pair of the notches is separated from respective end portions by an equal distance.

6. The packing box according to claim 1 or 2, wherein

longitudinal upper edges of the lower box have flaps formed by folding the cardboard back into the lower box, and

tip edges of the flaps are each provided with at least one notch.

7. The packing box according to claim 1 or 2, wherein

transverse lower edges of the upper cover have flaps formed by folding the cardboard back into the upper cover, and

tip edges of the flaps are each provided with at least one notch.

8. The packing box according to claim 1 or 2, wherein the top board of the upper cover is provided with at least one perforated portion.

9. The packing box according to claim 1 or 2, wherein the top board of the upper cover has at least

one hole.

10. The packing box according to claim 8, wherein the perforated portion is configured to be bendable or removable.

11. The packing box according to claim 8, wherein at least a pair of the perforated portions are provided at locations point-symmetrical to each other about a center of gravity of the top board.

12. The packing box according to claim 1 or 2, wherein the lower box is provided with a graduation at an upper side of a side board in a longitudinal direction of the lower box, the graduation indicating lengths along the longitudinal direction.

PACKING BOX

ABSTRACT

The purpose of the present invention is to provide a packing box wherein strength is improved and efficiency of opening, content retrieval, etc. is improved. The present invention is a packing box obtained from an upper cover and a lower box configured from cardboard for accommodating articles therein, in which: the upper cover is obtained from a top board that covers the entire interior of the lower box and side boards that extend vertically downward from each side of the top board and substantially cover the side surfaces of the lower box; and at least one notch is provided on one of the lower edges of the upper cover.

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FIG.1A

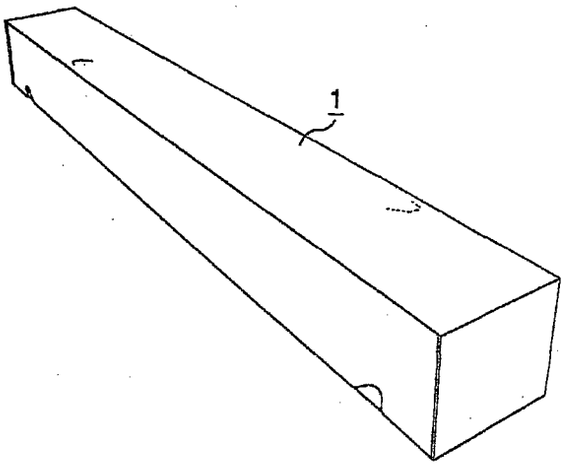
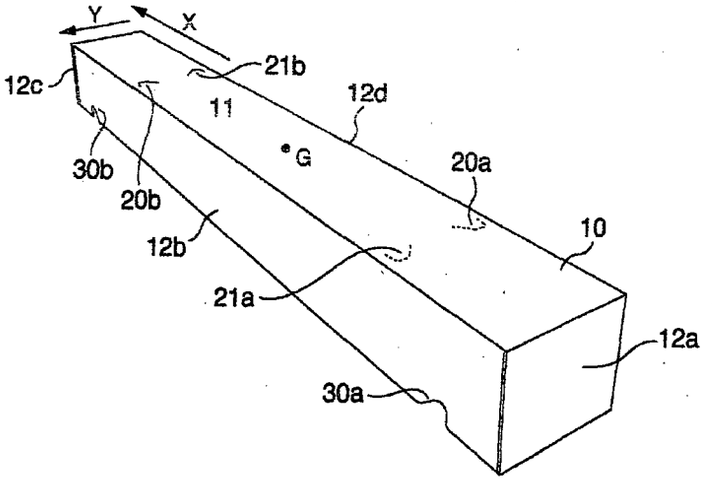


FIG.1B



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Resident Agent

FIG.1C

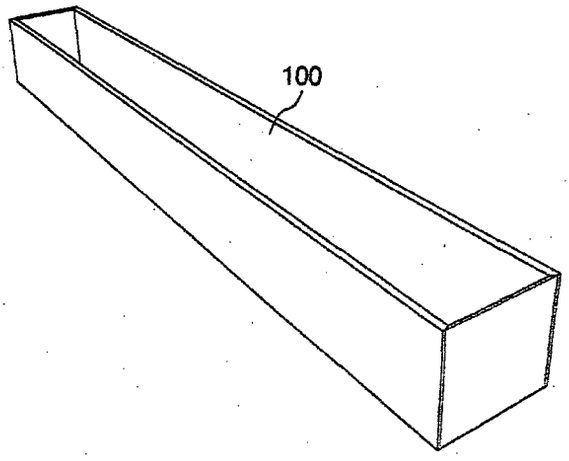
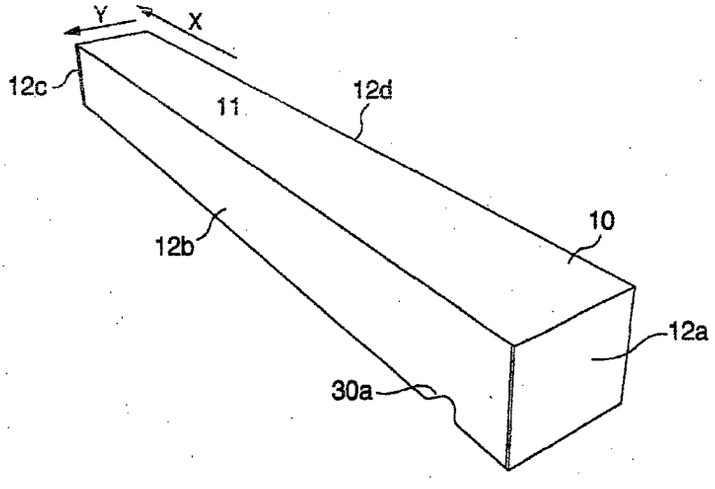


FIG.1D



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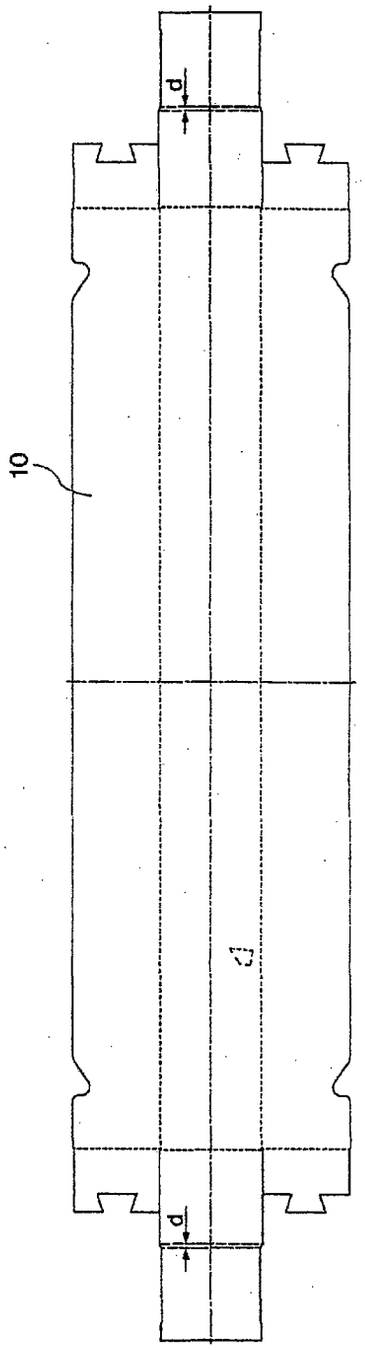

FIG.2A

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FIG.2B

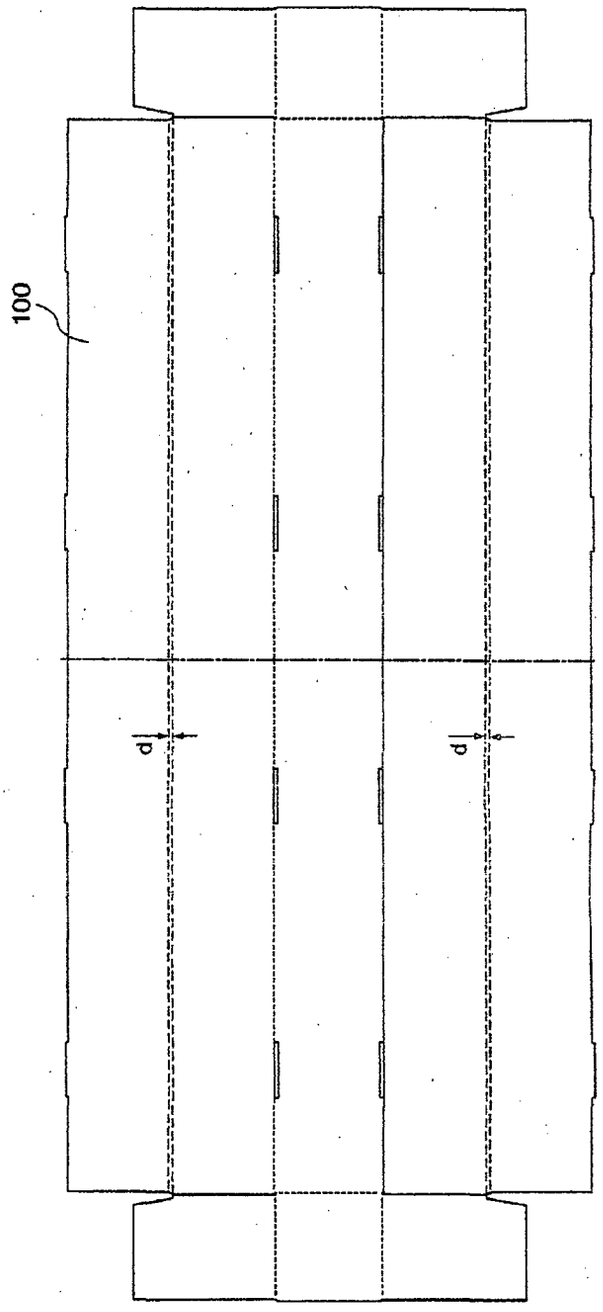

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FIG.3A

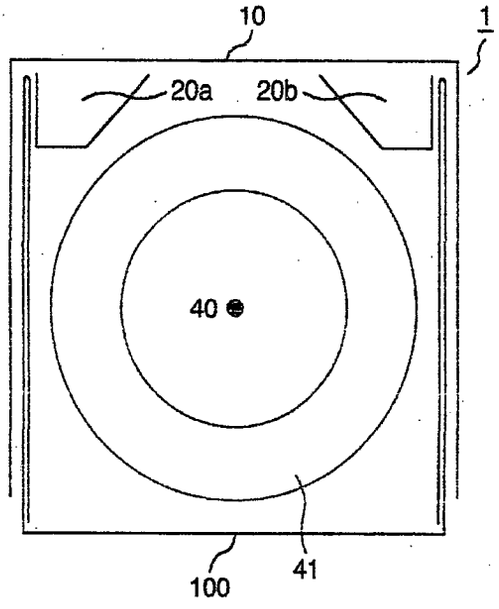

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FIG.3B

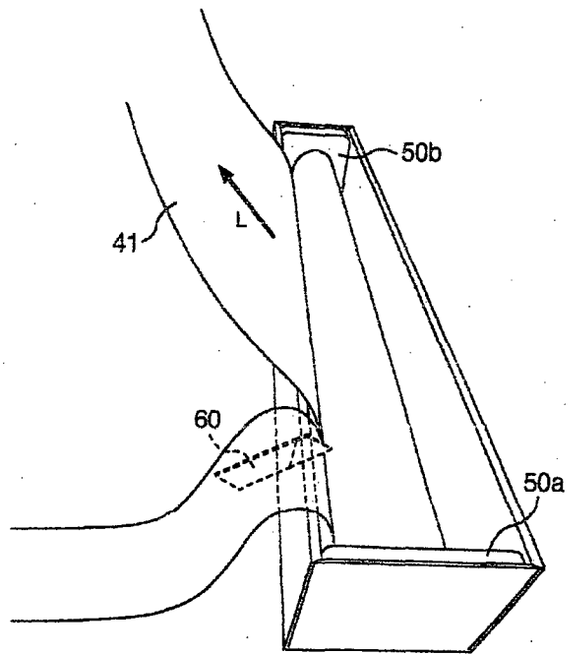

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FIG.4

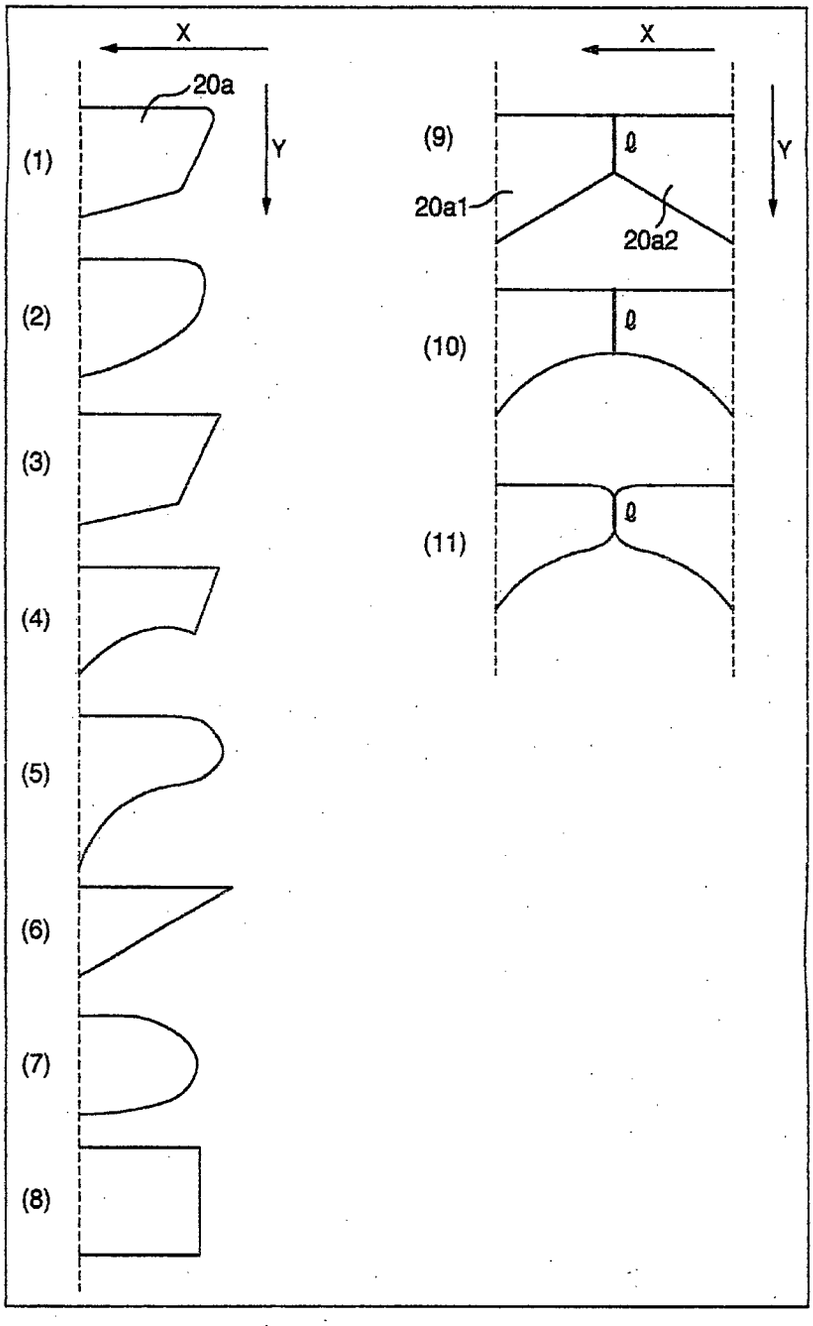

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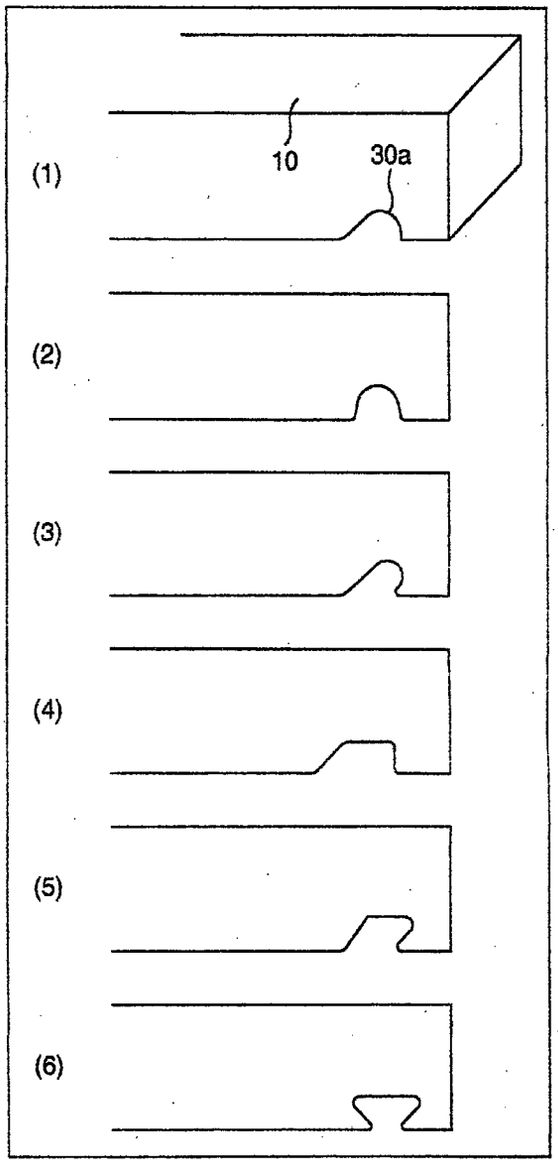
FIG.5



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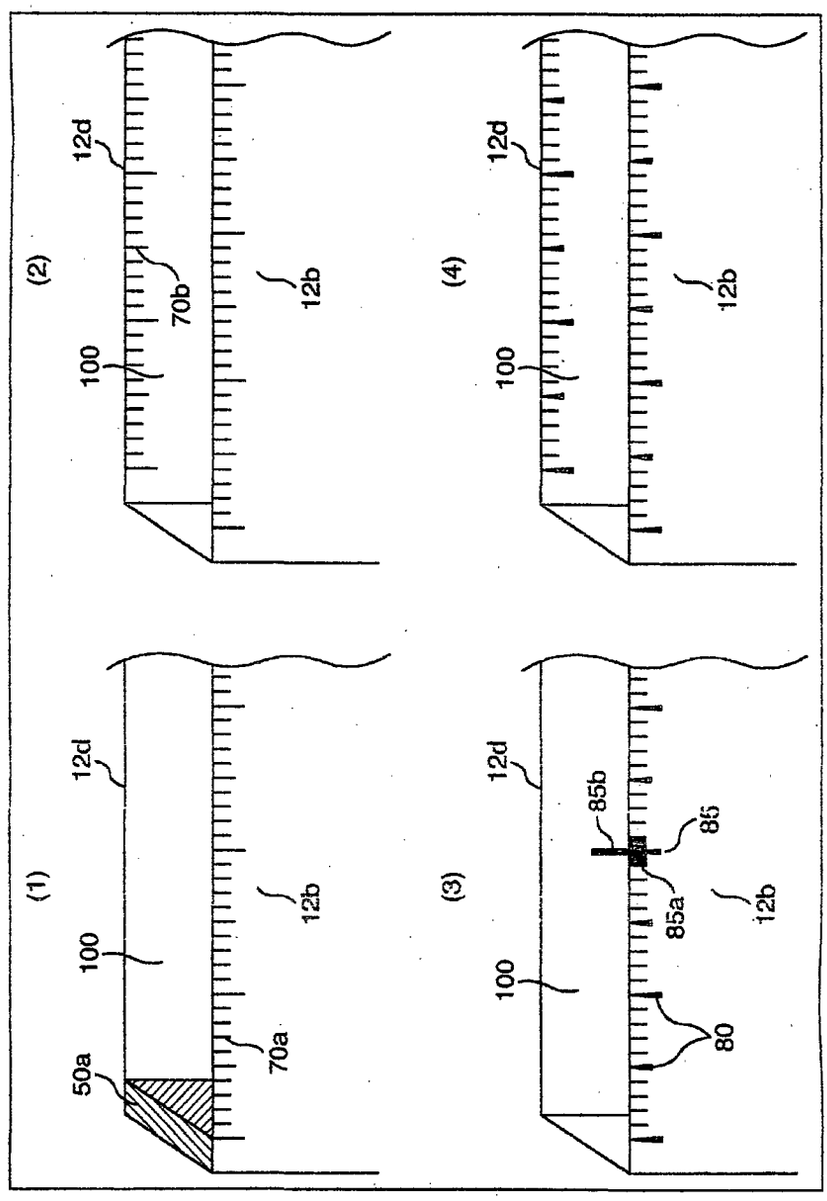

FIG.6A

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FIG.6B

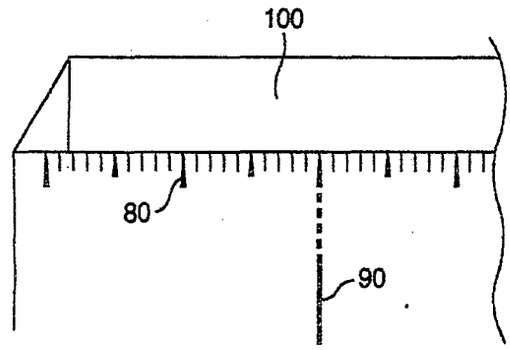

FIG.7

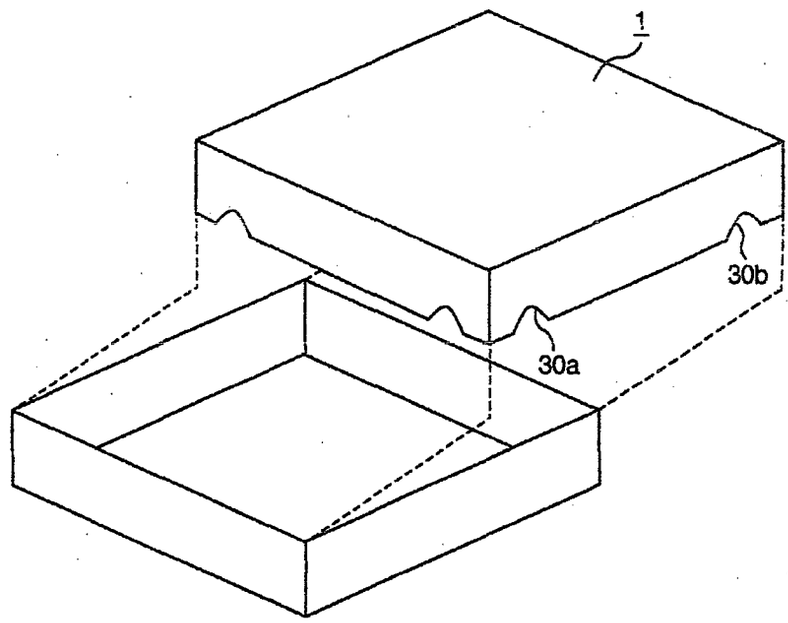

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FIG.8

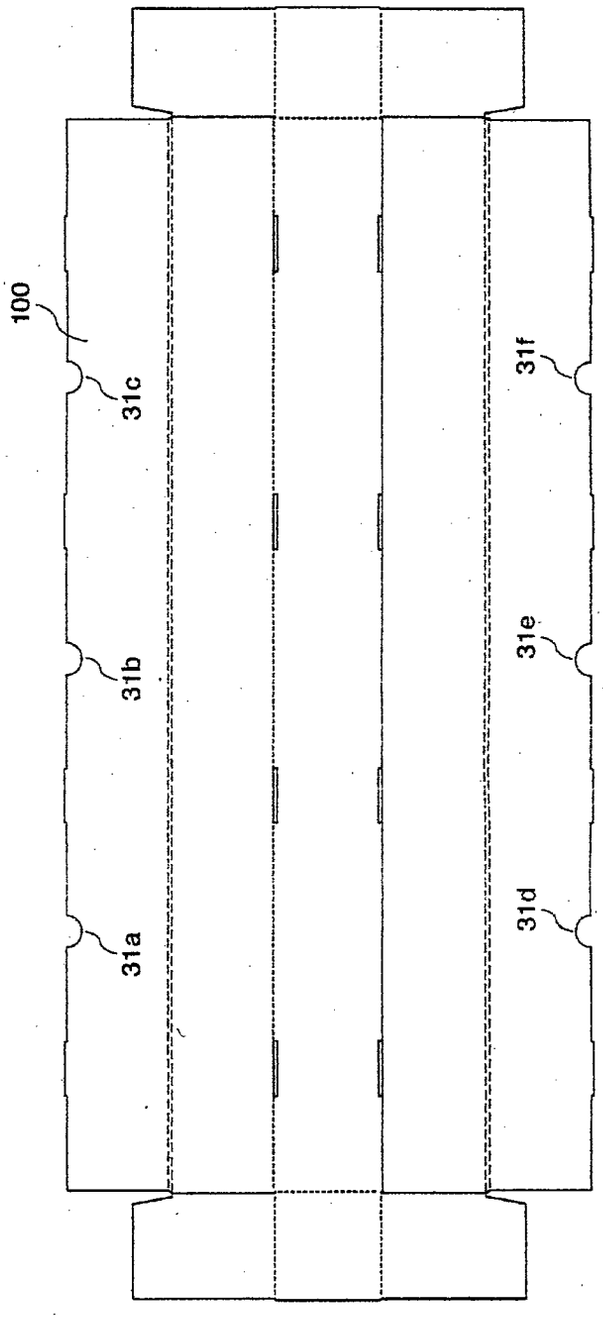

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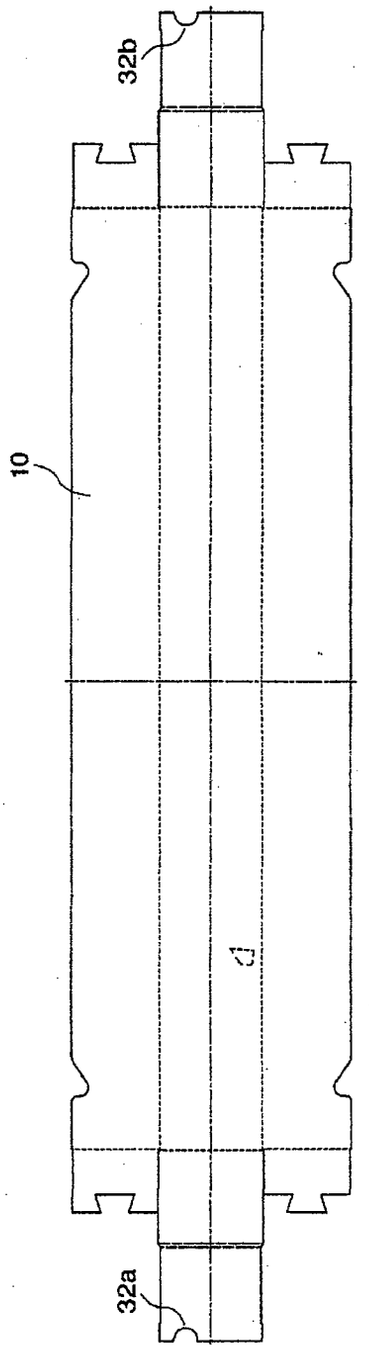
FIG.9



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