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(54) **PACKAGE-TYPE CARRIER AND METHOD FOR UNWRAPPING SAME**

(57) A package-type carrier, wherein a packaged object that is a biosensor can be easily taken out of the package-type carrier and attached to a measuring device without touching the packaged object. A package-type carrier (10) has an unsealed portion (15) outside a sealed portion (12) and near a connection electrode of a biosensor (16), and has, at the end of or near the unsealed portion (15), a leading end processed portion (14) such that a space (18) is provided in a portion between an upper cover (11a) and a lower cover (11b) of the package-type carrier (10).

FIG. 3A

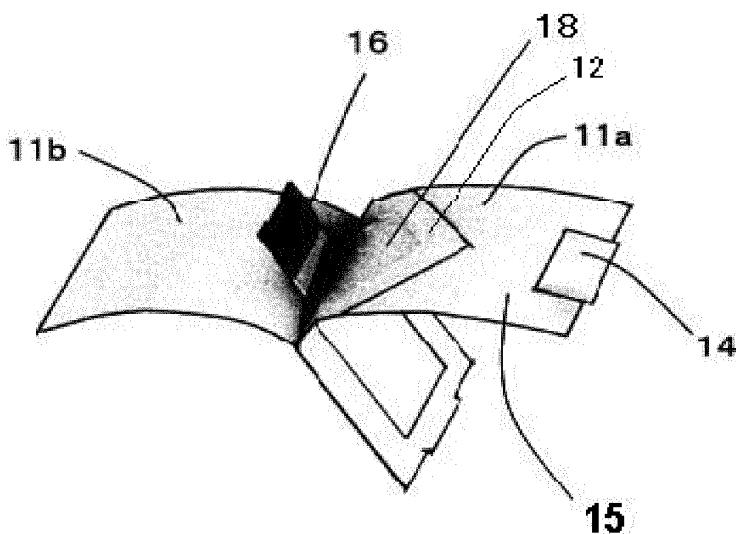
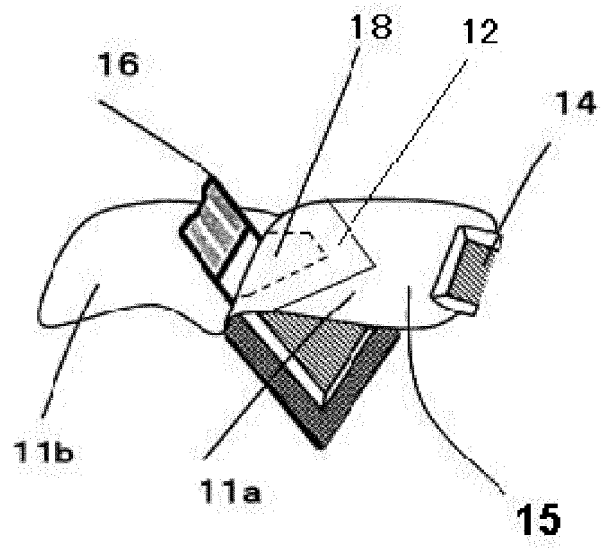


FIG. 3B



Description

Technical Field

5 **[0001]** The present invention relates to a package having an packaged object packaged in a package body, and a method for opening the same.

Background Art

10 **[0002]** Conventional packages are configured such that an object to be packaged such as food, medicine, electronic component or machine part is packaged in a package body.

15 **[0003]** More specifically, the package body includes an upper surface cover and a lower surface cover that are disposed on and under the packaged object, respectively, and is configured so that the upper surface cover and the lower surface cover adhere to each other at the outer peripheral part of the packaged object with the packaged object being covered with the upper surface cover and the lower surface cover. A technique similar to this is disclosed for example in PTL 1.

Citation List

Patent Literature

20

PTL 1

[0004] Japanese Patent Application Laid-Open No. 2000-203600

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Summary of Invention

Technical Problem

30 **[0005]** With the foregoing conventional configuration, however, the packaged object cannot be easily taken out of the package body and thus usability is extremely poor. As described above, the package body is formed by a upper surface cover and a lower surface cover and the two covers contact with each other at their outer peripheral surface.

35 **[0006]** Thus, when opening the package, a part of the contact surface between the upper surface cover and the lower surface cover at the outer peripheral surface is peeled away, the peeled outer peripheral surfaces are held by fingers, and then the upper surface cover and the lower surface cover are fully separated from each other. However, separation of the upper surface cover and the lower surface cover from each other at their contact surface is extremely difficult. For this reason, the packaged object cannot be easily taken out of the package body thus leading to poor usability.

40 **[0007]** The present invention relates to a package that offers improved usability by allowing the contact surface between the upper surface cover and lower surface cover to be easily separated from each other, and a method for opening the package.

Solution to Problem

45 **[0008]** A package according to one aspect of the present invention includes a package body and a packaged object packaged by the package body, wherein the packaged object is a sensor which has a flat plate shape and of which one end portion has a connection electrode, the package body includes a sheet-like upper surface cover and a sheet-like lower surface cover which are arranged above and below the packaged object, respectively, the package body includes an adhesive portion which seals the packaged object by attaching the upper surface cover and the lower surface cover that interpose the packaged object there between in a surrounding part of the packaged object, at least one of the upper surface cover and the lower surface cover includes a protrusion or a recess on a surface of the upper surface cover or the lower surface cover in a part which is on an outer side of the adhesive portion and is close to the connection electrode, and a non-contact space is formed between the upper surface cover and the lower surface cover in a surrounding part of the protrusion or the recess.

Advantageous Effects of Invention

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[0009] In the present invention, a protrusion or a recess is provided on the surface of at least one of the upper surface cover and the lower surface cover in such a manner that non-contact space is formed between the upper surface cover and the lower surface cover in the surrounding part of the protrusion or recess. Accordingly, the user can easily peel

the contact surface between the upper surface cover and the lower surface cover. As a result, the usability of the package can be improved. Furthermore, in the present invention, since the protrusion or recess is provided in an area close to the connection electrode, the user can mount the sensor into the measuring apparatus without touching the sensor.

[0010] That is, according to the present invention, when the package is opened, a finger is easily caught by the protrusion or recess. In addition, according to the present invention, the contact area between the upper surface cover and the lower surface cover is reduced due to the non-contact space formed in the surrounding part of the protrusion or recess, and thus the upper surface cover and the lower surface cover are easily separated from each other. Furthermore, in the present invention, the non-contact space serves as a start point where separation between the upper surface cover and the lower surface cover occurs. As a result, in the present invention, the user can easily peel the contact surface between the upper surface cover and the lower surface cover, thereby improving the usability of the package.

[0011] Moreover, in the present invention, when the user opens the upper surface cover and the lower surface cover from the side where the protrusion or recess is provided, first, the user separates the upper surface cover and the lower surface cover from each other until the connection electrode is exposed, with an adhesive portion on the opposite side to the protrusion or recess being attached. Then, the user peels away the entire adhesive portion after mounting the connection electrode into a measuring apparatus. In the present invention, with this opening method, the user can mount the sensor into the measuring apparatus without touching the sensor.

Brief Description of Drawings

[0012]

FIG. 1 is a perspective view illustrating a state of a package of the present invention before opened;
FIGS. 2A and 2B are perspective and structural views respectively illustrating the state of the package of the present invention before opened;

FIGS. 3A and 3B are perspective and structural views respectively illustrating a state after the package of the present invention is opened;

FIGS. 4A to 4D illustrate an opening method which uses the package of the present invention;

FIGS. 5A to 5D illustrate another opening method which uses the package of the present invention;

FIGS. 6A and 6B are perspective views illustrating a use method after the package of the present invention is opened;

FIG. 7 is a structural view illustrating another example of the package of the present invention;

FIG. 8 is a structural view illustrating another example of the package of the present invention;

FIG. 9 is a structural view illustrating another example of the package of the present invention;

FIG. 10 is a structural view illustrating another example of the package of the present invention;

FIG. 11 is a structural view illustrating another example of the package of the present invention;

FIG. 12 is a structural view illustrating another example of the package of the present invention;

FIGS. 13A and 13B are structural views illustrating other examples of the package of the present invention;

FIG. 14 is a structural view illustrating another example of the package of the present invention;

FIG. 15 is a structural view illustrating another example of the package of the present invention;

FIG. 16 is a structural view illustrating another example of the package of the present invention;

FIG. 17 is a structural view illustrating another example of the package of the present invention;

FIG. 18 is a structural view illustrating another example of the package of the present invention;

FIG. 19 is a structural view illustrating another example of the package of the present invention;

FIG. 20 is a structural view illustrating another example of the package of the present invention;

FIGS. 21A and 21B are structural views illustrating other examples of the package of the present invention;

FIGS. 22A and 22B are views illustrating the front surface and the rear surface of the package of the present invention illustrated in FIG. 21A;

FIG. 23 illustrates a cross-section of the package of the present invention illustrated in FIG. 21A;

FIG. 24 is a structural view illustrating another example of the package of the present invention;

FIG. 25 is a structural view illustrating another example of the package of the present invention;

FIG. 26 is a structural view illustrating another example of the package of the present invention;

FIG. 27 is a structural view illustrating another example of the package of the present invention;

FIG. 28 is a structural view illustrating another example of the package of the present invention;

FIG. 29 is a structural view illustrating another example of the package of the present invention;

FIG. 30 is a structural view illustrating another example of the package of the present invention;

FIG. 31 is a structural view illustrating another example of the package of the present invention;

FIG. 32 is a structural view illustrating another example of the package of the present invention;

FIG. 33 is a structural view illustrating another example of the package of the present invention;

FIG. 34 is a structural view illustrating another example of the package of the present invention;

FIG. 35 is a structural view illustrating another example of the package of the present invention; and
FIG. 36 is a structural view illustrating another example of the package of the present invention.

Description of Embodiments

[0013] Hereinafter, a package according to Embodiment 1 of the present invention will be described with reference to the drawings. In this embodiment, a package will be described wherein a flat plate-shaped biosensor for measuring the substrate concentration (e.g., glucose concentration) of a biological sample is used as an example of the packaged object in the package. FIGS. 1 to 36 are merely examples of the embodiment of the present invention, and the embodiment is not limited thereto.

(Embodiment 1)

[0014] FIG. 1 is a perspective view illustrating unopened packages according to Embodiment 1 of the present invention. FIG. 1 illustrates five packages 10 connected to one another.

[0015] As understood from FIGS. 1 to 3B, package 10 of this embodiment includes biosensor 16, an example of a flat plate-shaped packaged object, enclosed in package body 11. Package body 11 has a rectangular shape and is formed of sheet-like upper surface cover 11a and lower surface cover 11b. Biosensor 16 is interposed between upper surface cover 11a and lower surface cover 11b.

[0016] For at least one of upper surface cover 11a and lower surface cover 11b, first processed portion 13, sealed portion 12, and unsealed portion 15 are formed. First processed portion 13 has a protrusion shape and defines space 18 for accommodating therein biosensor 16. Sealed portion 12 is provided around biosensor 16 with a predetermined space in between in order to seal biosensor 16 accommodated in space 18.

[0017] Sealed portion 12 is formed for example by heat-sealing upper surface cover 11a and lower surface cover 11b to each other. Upper surface cover 11a and lower surface cover 11b have a sealing layer on the inside thereof. Biosensor 16 is shielded from the outside air and is completely sealed by sealed portion 12. Therefore, biosensor 16 is not contaminated by dirt, dust and the like and is not affected by the humidity of the outside. Accordingly, package 10 enhances the storage stability of biosensor 16.

[0018] Unsealed portion 15 is a portion which is not sealed (e.g., heat-sealed) on one end side of space 18 between upper surface cover 11a and lower surface cover 11b. Unsealed portion 15 may function as gripping margins 15a and 15b when package 10 is opened (see FIG. 4B).

[0019] Front end processed portion 14 is provided at a portion of unsealed portion 15 and is disposed at an end of package 10. A user grips unsealed portion 15 as gripping margins 15a and 15b with fingers to open the package body. Here, front end processed portion 14 functions as a fulcrum for gripping gripping margins 15a and 15b with the fingers. Accordingly, the user can easily grip gripping margins 15a and 15b with the fingers and thus can separate upper surface cover 11a from lower surface cover 11b to open the package body and can pull out biosensor 16, the packaged object (see FIGS. 3A and 3B).

[0020] FIGS. 3A and 3B illustrate a state where package body 11 of package 10 is opened from front end processed portion 14 side.

[0021] First processed portion 13 can form space 18 between upper surface cover 11a and lower surface cover 11b.

[0022] Furthermore, when package 10 is manufactured, package body 11 is processed to form space 18 which has a slightly greater size than that of biosensor 16, a packaged object. That is, package body 11 is appropriately processed according to the size of the packaged object accommodated in package body 11. Accordingly, a reduction in the size of package 10 can be achieved. Moreover, the orientation of biosensor 16 accommodated in space 18 can be maintained.

[0023] As illustrated in FIGS. 6A and 6B, the user opens package 10 to expose the connection electrode part of biosensor 16 accommodated therein. Thereafter, the user can insert biosensor 16 into sensor mounting portion 21 of measuring apparatus 20 without directly touching biosensor 16 with the fingers. Therefore, foreign matter such as moisture and oil attached to the fingers of the user does not adhere to biosensor 16. Accordingly, the reliability of measurement by biosensor 16 can be enhanced. Note that measurement results and the like are displayed on display portion 22 of measuring apparatus 20.

[0024] Next, a method for opening package 10 of Embodiment 1 will be described with reference to FIGS. 4A to 5D.

[0025] FIGS. 4A to 4D illustrate an example of the method for opening package 10 in the order of FIG. 4A, FIG. 4B, FIG. 4C, and FIG. 4D.

[0026] In FIG. 4A, the user grips package 10 with fingers 17 of the left hand. Then, the user peels away front end processed portion 14 at the end portion of package 10 with fingers 19 of the right hand to separate upper surface cover 11a from lower surface cover 11b. Since front end processed portion 14 is provided, in the case of FIG. 4A, there is a catch on finger 19 of the right hand, and thus unsealed portion 15 is easily peeled. That is, gripping margin 15a of upper surface cover 11a and gripping margin 15b of lower surface cover 11b can be easily opened at front end processed

portion 14 as the fulcrum. Subsequently, in FIG. 4B, the user grips gripping margin 15a (the above-described portion of unsealed portion 15) of separated upper surface cover 11a with fingers 19 of the right hand. In FIG. 4C, the user grips gripping margin 15b (the above-described portion of unsealed portion 15) of separated lower surface cover 11b with fingers 17 of the left hand. Thereafter, in FIG. 4D, the user pulls upper surface cover 11a and lower surface cover 11b with fingers 17 of the left hand and fingers 19 of the right hand, respectively, in opposite directions. Accordingly, sealed portion 12 (see FIGS. 2A to 3B) shielded by heat-sealing or the like is peeled away such that biosensor 16, a packaged object sealed in package body 11 of package 10, is exposed (the state illustrated in FIGS. 3A and 3B).

[0027] Here, package body 11 of package 10 has front end processed portion 14 subjected to blister processing (protrusion-forming processing). A gap is formed between upper surface cover 11a and lower surface cover 11b by front end processed portion 14. Therefore, upper surface cover 11a and lower surface cover 11b do not come into close contact with each other due to the presence of front end processed portion 14, and front end processed portion 14 functions as a catch for finger 17, finger 19 or the like. Accordingly, the user easily separates upper surface cover 11a from lower surface cover 11b at front end processed portion 14 and can pinch gripping margin 15a with the fingers. Thus, package 10 is easy to open.

[0028] The planar shape of sealed portion 12 of package body 11 processed by heat-sealing or the like is not particularly limited. For example, the outline shape of sealed portion 12 is a polygonal shape (e.g., pentagonal shape as illustrated in FIGS. 2A and 2B), and the apex of the polygon faces front end processed portion 14. Accordingly, when front end processed portion 14 side is peeled to separate upper surface cover 11a from lower surface cover 11b, package body 11 is opened from the apex of the polygon. Therefore, a load needed for the opening gradually increases, and thus a load on the finger of the user can be easily adjusted.

[0029] Moreover, the package of this embodiment is so configured that biosensor 16 can be mounted in sensor mounting portion 21 of measuring apparatus 20 with only a portion of space 18 where biosensor 16 is accommodated being opened, without having to fully open space 18 (see FIGS. 3A and 3B and the like). Therefore, package 10 allows even persons with less strength to easily open package body 11 and mount biosensor 16.

[0030] Next, another example of the opening method, which is illustrated in FIGS. 5A to 5D, will be described. With the opening method in FIGS. 5A to 5D, upper surface cover 11a and lower surface cover 11b are separated from each other by sliding a finger of a hand (in the example of FIGS. 5A to 5D, finger 19 of the right hand) which holds package body 11.

[0031] In FIG. 5A, first, the user pinches an end portion of unsealed portion 15 side of package 10 with fingers of one hand. That is, the user pinches front end processed portion 14 provided on the end portion of package 10 with fingers. Subsequently, the user slides finger 19 that holds package 10 thereby easily separating upper surface cover 11a from lower surface cover 11b.

[0032] This effect is obtained because the blister-processed portion on the surface of front end processed portion 14 acts as an antislip portion for the finger and because the surfaces of upper surface cover 11a and lower surface cover 11b which abut on each other are made of material or subjected to treatment that offer good slidability so as to reduce friction the surfaces.

[0033] That is, since front end processed portion 14 which is a part where upper surface cover 11a and lower surface cover 11b do not abut on each other is provided, the friction between the two covers is small, and front end processed portion 14 is caught by the finger of the hand (in the example of FIGS. 5A to 5D, finger 19 of the right hand). Accordingly, unsealed portion 15 of upper surface cover 11a or lower surface cover 11b is easily turned back.

[0034] In FIG. 5B, due to the slide movement of finger 19, upper surface cover 11a is turned back allowing gripping margin 15b on the rear surface side of lower surface cover 11b to be exposed. The user then grips gripping margin 15b with fingers 19 of the right hand. Thereafter, in FIG. 5C, the user grips gripping margin 15a having front end processed portion 14 on the surface with fingers 17 of the left hand. In FIG. 5D, the user pulls upper surface cover 11a and lower surface cover 11b in opposite directions allowing package body 11 to be opened by peeling of sealed portion 12 of package body 11. The user then exposes biosensor 16 accommodated in first processed portion 13.

[0035] Since package body 11 has front end processed portion 14 formed on the end portion thereof, the contact area between upper surface cover 11a and lower surface cover 11b is reduced. Therefore, the opening operations according to the method illustrated in FIGS. 4A to 4D and the method illustrated in FIGS. 5A to 5D are easily performed.

[0036] Next, a method for using biosensor 16 exposed by opening package 10 will be described with reference to FIGS. 6A and 6B.

[0037] Not entire biosensor 16 in package 10 opened with the above-described method illustrated in FIGS. 4A to 4D or FIG. 5D is exposed; about 1/3 to 2/3 of biosensor 16 is exposed. The exposure width of biosensor 16 may be equal to or greater than the depth of sensor mounting portion 21 of measuring apparatus 20 to which biosensor 16 is mounted. The "depth" herein means, a distance from a contact portion (not illustrated) which is provided in sensor mounting portion 21 and comes into contact with the connection electrode part when biosensor 16 is inserted into the inside of sensor mounting portion 21, to the entrance of sensor mounting portion 21.

[0038] Therefore, the exposure width of biosensor 16 may be equal to or greater than the "depth" mentioned above.

More preferably, the exposure width may be equal to or greater than the distance from the inside of the sensor mounting portion 21 to the entrance of sensor mounting portion 21.

[0039] Accordingly, the user who intends to make measurement using biosensor 16 can mount biosensor 16 to the sensor mounting portion 21 of measuring apparatus 20 without directly touching biosensor 16 with fingers. Therefore, possible human-induced adverse effects on biosensor 16 accompanied by the opening of package body 11 is limited. That is, with a part of biosensor 16 being retained in package body 11, the user can mount biosensor 16 to measuring apparatus 20 while pinching the outside of the unopened part of package 10 with fingers 19 (FIGS. 6A and 6B). Therefore, package 10 provides high measurement reliability and operation efficiency.

[0040] Human-induced adverse effects include measurement failure due to a short-circuit between the electrodes caused by a touch of a wet finger to the connection electrode part of biosensor 16, and abnormal measurement values caused by a touch of a wet finger to a reagent area of biosensor 16, which causes elution of the reagent before application of blood.

[0041] In package 10, the area ratio of the sealed package portion (sealed portion 12 + the first processed portion 13) to unsealed portion 15 may be in a range of about 5 : 1 to 1 : 5, and more preferably 4 : 1 to 1 : 1.

[0042] In this embodiment, sealed portion 12 and unsealed portion 15 are respectively disposed on one side and on the other side in the longitudinal direction of package 10. Accordingly, the efficiency of the opening operation such as pinching with fingers can be enhanced.

[0043] When the connection electrode part of biosensor 16 is inserted into sensor mounting portion 21 of measuring apparatus 20, the connection electrode comes into contact with a connector (not illustrated) in sensor mounting portion 21 and is electrically connected to a measurement circuit and the like. Biosensor 16 is then held in measuring apparatus 20 by the contact pressure of the connector. Therefore, while biosensor 16 is mounted to measuring apparatus 20, only package body 11 of package 10 is drawn out by fingers 19 so as to be separated from biosensor 16 (FIG. 6B). Thereafter, the user punctures a finger using an external puncture apparatus so that a biological sample is exuded from the punctured skin and the biological sample is applied to biosensor 16. Accordingly, measuring apparatus 20 measures and analyzes for example the substrate concentration of the biological sample applied to biosensor 16.

[0044] Upper surface cover 11a and lower surface cover 11b of package body 11 may each be a laminated film, and for example, may be configured by laminating PET (polyethylene terephthalate; base material layer), AL (aluminum material), PE (polyethylene; sealing layer), and the like. The configuration of upper surface cover 11a or lower surface cover 11b is not limited to the laminated configuration.

[0045] For example, in upper surface cover 11a and lower surface cover 11b, a drying layer (also called a moisture absorption layer or dehumidifying layer) having a desiccant kneaded therein may be laminated. By laminating the drying layer, there is no need to additionally enclose a desiccant such as silica gel or alumina as a countermeasure against the humidity of biosensor 16 in space 18 that accommodates biosensor 16, unlike the related art.

[0046] Furthermore, sealed portion 12 of package 10 may be formed by overlapping the sealing layer of upper surface cover 11a and the sealing layer of lower surface cover 11b to face each other and heat-sealing the overlapping layers at 100 to 200°C. Alternatively, sealed portion 12 may be formed by thermocompression bonding or the like.

[0047] The drying layer having the desiccant kneaded therein may be provided between the base material layer and the sealing layer forming upper surface cover 11a or lower surface cover 11b.

[0048] Since the drying layer is the countermeasure against the humidity on biosensor 16, the drying layer may be disposed between the outside air and biosensor 16 and is not limited to a case of providing the drying layer between the base material layer and the sealing layer as described above. In this case, it is appropriate to dispose the drying layer in the internal portion except the outermost layer.

[0049] The size of the base of package 10 is not particularly limited. For example, the size of biosensor 16 having a flat plate-shaped content may be in a range of 10 to 60 mm in overall length, a range of 3 to 20 mm in width, and a range of 0.1 to 3 mm in thickness. Preferably, the size of biosensor 16 may be in a range of 20 to 35 mm in overall length, a range of 4 to 10 mm in width, and a range of 0.2 to 1 mm in thickness. The size of biosensor 16 of this embodiment may be about 30 mm in overall length, about 7 mm in width, and about 0.4 mm in thickness. Therefore, the overall size of package 10 may be dimensions in which biosensor 16, a packaged object, is included, and may be 60 mm in overall length, 22.5 mm in width, and about 0.2 mm in thickness. Accordingly, a reduction in the size of package 10 to a size of about 2/3 of the size according to the related art of about 70 mm in overall length, about 30 mm in width, and about 0.2 mm in thickness is possible.

[0050] The thickness of package 10 is enlarged by blister processing to an extent that biosensor 16 can be accommodated. That is, by sealed portion 12 and blister processed first processed portion 13, a space is ensured for accommodation of biosensor 16.

(Embodiment 2)

[0051] Another embodiment related to package 10 of the present invention will be described below with reference to

FIGS. 7 to 36. Like elements described above in Embodiment 1 are denoted by like reference numerals, and the description thereof will be omitted.

[0052] FIGS. 7 to 36 are perspective views of package 10 illustrating modified examples of front end processed portion 14 and enlarged top views of the main parts of front end processed portion 14 viewed from the upper surface thereof.

Here, the example of FIG. 7 is the same as that of Embodiment 1. Hereinafter, detailed description will be provided.

[0053] In the example of FIG. 7, first processed portion 13 and sealed portion 12 are provided in package 10 having a substantially quadrangular shape to form space 18 which accommodates biosensor 16 (see FIGS. 3A and 3B and the like). In this configuration, package 10 seals and stores biosensor 16 accommodated therein. First processed portion 13 is the hatched part in FIG. 7 and is subjected to blister processing. Sealed portion 12 is the meshed part in FIG. 7 and seals the periphery of first processed portion 13 by heat-sealing or the like. The outline of sealed portion 12 is polygonal (pentagonal in the example of FIG. 7).

[0054] In FIG. 7, the boundary part (white part) between sealed portion 12 and first processed portion 13 illustrates that a difference generates between the heights of sealed portion 12 and first processed portion 13 by performing the blister processing on first processed portion 13.

[0055] At the position of package 10 adjacent in the longitudinal direction to sealed portion 12, unsealed portion 15 which becomes gripping margins 15a and 15b (see FIGS. 4A to 5D) during opening is operated. Unsealed portion 15 is a part where upper surface cover 11a and lower surface cover 11b are not attached to each other.

[0056] On an end portion of unsealed portion 15 on upper surface cover 11a side, front end processed portion 14a (which is the same as front end processed portion 14 illustrated in FIG. 2B) is provided. Processing such as blister processing is performed on front end processed portion 14a (the hatched part) in a range indicated by the rectangle. Gap 18a which is an area where upper surface cover 11a and lower surface cover 11b do not come into contact with each other is formed in a portion of front end processed portion 14a. The processing (blister processing) performed on front end processed portion 14a may be performed simultaneously with a process of forming first processed portion 13, or may be performed simultaneously with the manufacturing process of upper surface cover 11a. Accordingly, the production cost can be suppressed.

[0057] The cross-section of gap 18a in FIG. 7 which is perpendicular to the longitudinal direction of package 10 is rectangular, trapezoidal, or the like.

[0058] The finger of the user is easily caught by gap 18a during the opening. Therefore, the efficiency of the opening operation by the fingers of the user can be enhanced.

[0059] Next, FIG. 8 will be described. Front end processed portion 14b in FIG. 8 is different from front end processed portion 14a in FIG. 7 in the arrangement. That is, in the example of FIG. 8, front end processed portion 14b is provided not in the end portion of package 10 (specifically, unsealed portion 15) but on the inward side of the end portion. In FIG. 8, similarly to the configuration of FIG. 7, an area where upper surface cover 11a and lower surface cover 11b do not come into contact with each other is provided, and during the opening, front end processed portion 14b that is a protrusion and the finger are easily caught by each other in the portion of unsealed portion 15. Therefore, the efficiency of the opening operation can be enhanced. Particularly in the method for opening package 10 by sliding the fingers illustrated in FIGS. 5A to 5D, the configuration of FIG. 8 facilitates an operation of smoothly separating or peeling upper surface cover 11a and lower surface cover 11b from each other.

[0060] Next, FIG. 9 will be described. In FIG. 9, front end processed portion 14c is provided over the entire width in the transverse direction of package 10. That is, in the configuration of FIG. 9, front end processed portion 14c is longer than that of the configuration of FIG. 8, and front end processed portion 14c extends from the end portion of one long side to the end portion of the other long side. Accordingly, in the configuration of FIG. 9, the degree of freedom of a part to be gripped by the fingers is increased during the opening operation, and the efficiency of the opening operation can be enhanced to be equal to or higher than that of the configuration of FIG. 8.

[0061] That is, front end processed portion 14c is provided so that an area where upper surface cover 11a and lower surface cover 11b do not come into contact with each other is wider than those of front end processed portions 14a and 14b in FIGS. 7 and 8, and the friction therebetween is reduced. Furthermore, a range to be gripped by the fingers can be arbitrarily set to be wide. Therefore, the efficiency of opening operation is equal to or higher than those of the configurations of FIGS. 7 and 8.

[0062] Next, FIG. 10 will be described. In FIG. 10, front end processed portion 14d is provided in the end portion of unsealed portion 15 of package 10 as in the configuration of FIG. 7. However, in FIG. 10, the shape of front end processed portion 14d when viewed from above package 10 is different from the rectangular shape of FIG. 7 and may be substantially trapezoidal shape, semicircular shape, or hill shape (mound shape). The configuration of FIG. 10 can also obtain the same effect as that of the configuration of FIG. 7.

[0063] Next, FIG. 11 will be described. In FIG. 11, front end processed portion 14e is provided also in the end portion of lower surface cover 11b unlike the case where front end processed portion 14a of FIG. 7 is provided only in the end portion of upper surface cover 11a (or of lower surface cover 11b, or any one thereof).

[0064] Accordingly, the width of gap 18a between upper surface cover 11a and lower surface cover 11b formed by

front end processed portion 14e becomes greater than that of the case of FIG. 7. Therefore, when the user grips front end processed portion 14e with the fingers, the fingers on both sides are easily caught by front end processed portion 14e. Accordingly, by front end processed portion 14e of FIG. 11, the operations of shifting, separating and peeling of upper surface cover 11a and lower surface cover 11b from each other can be more easily performed compared to when performing using front end processed portion 14a of FIG. 7.

[0065] Next, FIG. 12 will be described. Front end processed portion 14f illustrated in FIG. 12 is provided in the end portion of unsealed portion 15 of package body 11 of package 10 over the entire width in the transverse direction in a bank shape. The configuration of FIG. 12 can obtain the same effect as that of the configuration of FIG. 9.

[0066] Next, FIGS. 13A and 13B will be described. Front end processed portions 14g and 14g' illustrated in FIGS. 13A and 13B are different from the front end processed portions of FIGS. 7 to 12. That is, each of front end processed portions 14g and 14g' has a plurality of protrusions in a triangular prism shape. In FIG. 13A, the plurality of protrusions are configured so that one apex of the triangle of each of the protrusions faces first processed portion 13 in which biosensor 16 is accommodated. In FIG. 13B, the plurality of protrusions are configured so that one apex of the triangle of each of the protrusions faces the end face of unsealed portion 15.

[0067] Accordingly, the user can visually recognize a direction in which unsealed portion 15 is peeled away and a position to be gripped by the fingers. Thus, the configurations of FIGS. 13A and 13B enable the opening operation to be appropriately performed and enhance the efficiency of the opening operation.

[0068] In FIG. 13A and 13B, front end processed portion 14g has the protrusions in triangular prism shape. However, the present invention is not limited thereto, and for example, front end processed portion 14g may have protrusions in polygonal shape, cloud shape, circular shape, semicircular shape, or the like.

[0069] Next, FIGS. 14 and 15 will be described. Front end processed portion 14h illustrated in FIG. 14 and front end processed portion 14i illustrated in FIG. 15 function as a sign that indicates the opening point and an opening instruction instead of the protrusions of front end processed portions 14a to 14g described above. In FIG. 14, front end processed portion 14h is an "OPEN" sign (character information) that indicates opening. This sign is formed on the surface of the end portion of package 10 in a protruding manner. In FIG. 15, front end processed portion 14i is braille corresponding to "OPEN" and is formed on the surface of the end portion of package 10 in a protruding manner.

[0070] In FIG. 14, characters such as "OPEN" are formed by protruding upper surface cover 11a or lower surface cover 11b. The characters may be arbitrarily selected and may be realized by typing or printing characters of predetermined language. As a matter of course, front end processed portions are not limited to characters and may also employ pictographs, figures, symbols, graphics, and marks.

[0071] With front end processed portion 14h illustrated in FIG. 14, the user can directly sense (either visually or by touch) the opening indicator and opening point. In addition, front end processed portion 14i illustrated in FIG. 15 is convenient for persons with visual impairment.

[0072] Moreover, front end processed portion 14h of FIG. 14 and front end processed portion 14i of FIG. 15 may be used together with front end processed portions (14a to 14g, 14j, 14k, and the like) according to the other modified examples.

[0073] Next, FIG. 16 will be described. Front end processed portion 14j illustrated in FIG. 16 does not have protrusions provided in front end processed portions (14a to 14g) of the above-described modified examples but is formed by cutting an end portion of any one of upper surface cover 11a and lower surface cover 11b. Thus, the user can reliably grip the end of the one of the sheet where upper surface cover 11a or lower surface cover 11b is not cut. Therefore, the user can easily open package body 11 by separating upper surface cover 11a from lower surface cover 11b.

[0074] Next, FIG. 17 will be described. Front end processed portion 14k illustrated in FIG. 17 is a modified example of front end processed portion 14j of FIG. 16. That is, front end processed portion 14k is provided with cut parts in both upper surface cover 11a and lower surface cover 11b at different positions (positions that do not oppose each other). In FIG. 17, front end processed portion 14k is provided with one cut part for each of the front surface (upper surface cover 11a) and the rear surface (lower surface cover 11b), that is, a total of two cut parts. In the present invention, any number of front end processed portions 14k may be provided.

[0075] Accordingly, the user can more smoothly separate upper surface cover 11a from lower surface cover 11b, and thus the efficiency of the opening operation can be enhanced.

[0076] In FIGS. 16 and 17, protruding portions may be formed in parts of upper surface cover 11a or lower surface cover 11b which are adjacent to front end processed portions 14j and 14k.

[0077] Next, FIG. 18 will be described. Front end processed portion 14L illustrated in FIG. 18 is formed as an arc-shaped protrusion provided in unsealed portion 15 of upper surface cover 11a. The protrusion that forms front end processed portion 14L is different from a straight shape (front end processed portion 14b of FIG. 8, front end processed portion 14c of FIG. 9, or the like). Therefore, even when the opening operation is performed in any direction of front end processed portion 14L, the finger is easily caught by front end processed portion 14L. Therefore, gripping margins 15a and 15b can be reliably separated from each other, and thus a reliable opening operation can be performed.

[0078] Next, FIG. 19 will be described. A protrusion that forms front end processed portion 14m having a protruding

shape illustrated in FIG. 19 is different from the arc-shaped protrusion of FIG. 18 in that the direction of the arc is reversed. In the configuration illustrated in FIG. 19, similarly to front end processed portion 14L in FIG. 18, even when the opening operation is performed in any direction of front end processed portion 14m, the finger is easily caught by front end processed portion 14m. Therefore, gripping margins 15a and 15b can be reliably separated from each other. Furthermore, in the configuration illustrated in FIG. 19, the arc shape of front end processed portion 14m widens toward the outside of package 10. Accordingly, the user can put a finger along the raised part of the arc shape of front end processed portion 14m and can grip package 10. That is, in the configuration illustrated in FIG. 19, the finger is easily caught by gripping margins 15a and 15b (see FIGS. 4A to 5D) of the unsealed portion 15, and thus a gripping force is increased. Therefore, front end processed portion 14m having the protruding shape illustrated in FIG. 19 further enhances the reliability of the opening operation compared to front end processed portion 14L illustrated in FIG. 18.

[0079] Next, FIG. 20 will be described. Front end processed portion 14n illustrated in FIG. 20 is formed as a plurality of protrusions having straight shapes that are provided in parallel, in a part of unsealed portion 15 of upper surface cover 11a of package 10.

[0080] When front end processed portion 14n is viewed from above, the plurality of protrusions having elongated quadrangular shapes are provided in parallel to the width of package 10. In addition, the lengths of the elongated quadrangular shapes are reduced toward the inside, and the length on the end portion side of package 10 is largest.

[0081] According to front end processed portion 14n illustrated in FIG. 20, there is provided a catch between the flat surface of the finger of the user and front end processed portion 14n during the opening operation. Therefore, the user can separate gripping margins 15a and 15b (see FIGS. 4A to 5D) of the unsealed portion 15 from each other more easily. Accordingly, according to front end processed portion 14n illustrated in FIG. 20, the efficiency of the opening operation can further be enhanced.

[0082] In FIG. 20, three protrusions having elongated quadrangular shape are provided in parallel in front end processed portion 14n. However, in the present invention, the number of protrusions is not limited to three and may be two, or four or more. Furthermore, in FIG. 20, the widths of the plurality of protrusions of front end processed portion 14n, which have elongated quadrangular shape and are parallel to one another, are different from one another. However, the present invention is not limited thereto, and the widths of all the protrusions may be the same or the widths of some of the protrusions may be the same.

[0083] Next, FIGS. 21A to 22B, and 23 will be described. Regarding package 10 illustrated in FIG. 21A, in unsealed portion 15 of upper surface cover 11a (see FIGS. 3A and 3B), front end processed portion 14n illustrated in FIG. 20 is provided in the vicinity of the end portion of package 10. Regarding package 10 illustrated in FIG. 21B, front end processed portion 14n' is provided in the vicinity of the end portion of package 10. The lengths of three protrusions having elongated quadrangular shape that form front end processed portion 14n' are different from those of front end processed portion 14n and are increased toward the inside, and the length on the end portion side of package 10 is smallest. Furthermore, each of packages 10 illustrated in FIGS. 21A and 21B is additionally provided with front end processed portion 14o formed by extraction on the entire end portion of one side of package 10.

[0084] FIG. 22A is a top view of package 10 illustrated in FIG. 21A, and FIG. 22B is a bottom view of package 10 illustrated in FIG. 21A. In FIG. 23, reference numeral 100 denotes the surface of package 10 (the same diagram as in FIG. 22A) illustrated in FIG. 21A, reference numeral 200 denotes the cross-section of package 10 in the transverse direction (a part indicated by the vertical dot-dashed line), and reference numeral 300 denotes the cross-section of package 10 in the longitudinal direction (a part indicated by the horizontal dot-dashed line).

[0085] Front end processed portion 14o is formed by extracting the end portion of only upper surface cover 11a (similarly to gripping margin 15a, see FIGS. 3A to 5D). That is, the end face of upper surface cover 11a and the end face of lower surface cover 11b (similarly to gripping margin 15b, see FIGS. 3A to 5D) are not aligned with each other but are shifted from each other. In the opening method described with reference to FIGS. 4A to 4D, the user turns up parts of gripping margins 15a and 15b of unsealed portion 15 with fingers 17 and 19 so as to be separated from each other. At this time, only one gripping margin (in this case, gripping margin 15b on lower surface cover 11b side) can be gripped first. Then, the user first turns up gripping margin 15a and thereafter can grip the other gripping margin (in this case, gripping margin 15a on upper surface cover 11a side). Therefore, the user can easily grip the end portion of package body 11 with the fingers and can easily open package body 11.

[0086] As illustrated in FIGS. 21A and 21B, front end processed portion 14n in which the three protrusions having the elongated quadrangular shapes are provided in parallel and finger 19 are caught by each other, and thus the user can reliably and easily separate gripping margins 15a and 15b from each other.

[0087] That is, since front end processed portion 14n or 14n' is provided with the plurality of protrusions as in the configuration of FIG. 20, compared to the configurations of FIGS. 7 to 19, a wide contact surface is ensured. As a result, a contact part of the finger is large, and thus the finger and front end processed portion 14n or 14n' are more easily caught by each other.

[0088] Thereafter, the user grips gripping margins 15a and 15b with fingers 17 and 19 and pulls gripping margins 15a and 15b in the opposite directions to open package body 11 from the mountain-shaped front end side of sealed portion

12. The user then can separate upper surface cover 11a and lower surface cover 11b from each other to expose biosensor 16, a packaged object accommodated in first processed portion 13 (see FIGS. 4A to 4D).

[0089] Packages 10 illustrated in FIGS. 21A and 21B are appropriate for not only the opening method illustrated in FIGS. 4A to 4D but also the opening method illustrated in FIGS. 5A to 5D. The opening method illustrated in FIGS. 5A to 5D is a method for separating gripping margins 15a and 15b from each other by sliding fingers 19 of one hand (the right hand in FIGS. 5A to 5D).

[0090] With the opening method illustrated in FIGS. 5A to 5D, the user pinches gripping margins 15a and 15b of unsealed portion 15 of package 10 with fingers 19 of one hand and moves fingers 19 in opposite directions. In this way, front end processed portion 14n provided on gripping margin 15a side (that is, upper surface cover 11a) and finger 19 are caught by each other such that only gripping margin 15a is turned up and separated from gripping margin 15b.

[0091] In this case, when an arbitrary position of finger 19 is caught by any one of the plurality of protrusions of front end processed portion 14n, the user can simply separate gripping margins 15a and 15b from each other.

[0092] Furthermore, packages 10 of FIGS. 21A and 21B are configured so that the end portion of upper surface cover 11a and the end portion of lower surface cover 11b are shifted from each other in front end processed portion 14o. That is, the end portion of gripping margin 15a is positioned on the inside in relation to the end portion of gripping margin 15b. Therefore, in the case where the user slides fingers 19 of one hand, while holding gripping margin 15b of which the end portion is positioned on the outside with one finger, the user slides another finger on gripping margin 15a of which the end portion is positioned on the inside and which is provided with front end processed portion 14n including the plurality of protrusions having elongated quadrangular shape. Accordingly, the user can reliably and easily separate gripping margins 15a and 15b from each other.

[0093] Thereafter, the user grips gripping margins 15a and 15b with fingers 17 and 19 and pulls gripping margins 15a and 15b in opposite directions so as to open package body 11 from the mountain-shaped front end side of sealed portion 12. The user can separate upper surface cover 11a and lower surface cover 11b from each other to expose biosensor 16, a packaged object accommodated in first processed portion 13 (see FIGS. 5A to 5D).

[0094] In the above description, the case where front end processed portion 14o is formed by extraction is illustrated. However, the present invention is not limited thereto, and front end processed portion 14o may also be formed by cutting. In addition, in the present invention, front end processed portion 14o may be formed by, in a process of attaching upper surface cover 11a to lower surface cover 11b, attaching upper surface cover 11a to lower surface cover 11b so that the end faces thereof are shifted from each other.

[0095] Furthermore, in the present invention, in packages 10 illustrated in FIGS. 21A and 21B, embossing processing may be performed on the surfaces of upper surface cover 11a and lower surface cover 11b which form package body 11.

[0096] Accordingly, on the surfaces of upper surface cover 11a and lower surface cover 11b which come into contact with each other and gripping margins 15a and 15b that form unsealed portion 15, embossed portions are formed. Accordingly, gripping margins 15a and 15b do not come into close contact with each other and the fingers are easily caught by gripping margins 15a and 15b, thereby increasing the gripping force.

[0097] Particularly, embossing processing is performed on the surfaces of not only upper surface cover 11a provided with front end processed portion 14n but also lower surface cover 11b. Accordingly, in the case where gripping margins 15a and 15b are gripped by the fingers, the fingers are easily caught by the embossed portions provided in upper surface cover 11a and lower surface cover 11b. Therefore, the separating operation can be more reliably performed.

[0098] Next, FIG. 24 will be described. Package 10 illustrated in FIG. 24 is a modified example of package 10 illustrated in FIG. 21A. That is, package 10 of FIG. 24 has both front end processed portion 14j (see FIG. 16) and front end processed portion 14n (see FIG. 20), and the shape of an extracted portion thereof is different from that of front end processed portion 14o of FIG. 21A. In the configuration of FIG. 24, the same effect as that of the configuration of FIG. 21A can be obtained.

[0099] Front end processed portion 14j of FIG. 24 is formed by, in the same manner as FIG. 16, extracting or cutting the end portion of either upper surface cover 11a or lower surface cover 11b.

[0100] Front end processed portion 14n of FIG. 24 is provided with a plurality of protrusions which have straight shapes and are parallel to each other, in a part of unsealed portion 15 of upper surface cover 11a of package 10, as in FIG. 20. That is, when front end processed portion 14n is viewed from above, a plurality of elongated quadrangular shapes are provided in parallel to the transverse direction of package 10. In addition, the lengths of the elongated quadrangular shapes are reduced toward the inside, and the length on the end portion side of package 10 is the largest.

[0101] According to the configuration of FIG. 24, the user can reliably grip the end of the sheet of either upper surface cover 11a or lower surface cover 11b which is not subjected to cutting. In addition, according to the configuration of FIG. 24, there is provided a catch between the flat surface of the finger of the user and front end processed portion 14n. Accordingly, the user can grip gripping margins 15a and 15b (see FIGS. 4A to 5D) of unsealed portion 15 more reliably and easily. Therefore, the configuration of FIG. 24 has excellent efficiency in the opening operation.

[0102] Next, FIG. 25 will be described. Front end processed portion 14p illustrated in FIG. 25 is formed by a plurality of protrusions which have a substantially circular shape. The protrusions are provided on upper surface cover 11a (see

FIGS. 3A and 3B and the like) side in the vicinity of the end portion of package 10 and are arranged in parallel to the transverse direction of package 10.

[0103] The plurality of protrusions that form front end processed portion 14p are arranged in parallel to the transverse direction in the end portion of package 10. Therefore, during the opening, even when the user puts finger 19 at any position in upper surface cover 11a, finger 19 can be reliably caught by any of the plurality of protrusions. Accordingly, the configuration of FIG. 25 enhances the reliability in the opening operation.

[0104] Next, FIG. 26 will be described. Front end processed portion 14q illustrated in FIG. 26 is formed by a plurality of recesses which have a substantially circular shape. The recesses are provided on upper surface cover 11a (see FIGS. 3A and 3B and the like) side in the vicinity of the end portion of package 10 and are arranged in parallel to the transverse direction of package 10.

[0105] The plurality of recesses which form front end processed portion 14q are arranged in two rows and in a zigzag pattern as illustrated in FIG. 26. Accordingly, a part (that is, a gap) where gripping margin 15a of upper surface cover 11a and gripping margin 15b of lower surface cover 11b (see FIGS. 3A and 3B) do not come into contact with each other is formed. Therefore, in the configuration of FIG. 26, the user can easily grip gripping margins 15a and 15b during the opening.

[0106] Next, FIG. 27 will be described. Front end processed portion 14r illustrated in FIG. 27 is a modified example of front end processed portion 14q of FIG. 26. That is, while front end processed portion 14q has a concave shape, front end processed portion 14r has a convex shape. In addition, a plurality of protrusions that form front end processed portion 14r are disposed in the vicinity of the end portion of upper surface cover 11a (see FIGS. 3A and 3B) as in FIG. 26 and are arranged in a plurality of rows to be parallel to the end face thereof. Furthermore, the protrusions are arranged in a zigzag pattern as in FIG. 26. Therefore, in the configuration of FIG. 27, the finger can be reliably caught by the protrusions provided in front end processed portion 14r in the same manner as package 10 of FIG. 25, thereby enhancing the reliability of the opening operation.

[0107] Next, FIG. 28 will be described. Front end processed portion 14s illustrated in FIG. 28 is a combination of front end processed portion 14q of FIG. 26 and front end processed portion 14r of FIG. 27. Front end processed portion 14s is disposed in the vicinity of the end portion of upper surface cover 11a, and protrusions and recesses are arranged in two rows to be parallel to the end face of upper surface cover 11a. In each of the rows, the protrusions and the recesses are alternately arranged.

[0108] According to the configuration of FIG. 28, during the opening, even when the user puts finger 19 at any position in upper surface cover 11a, finger 19 can be reliably caught by any of the plurality of protrusions. Therefore, the configuration of FIG. 28 enhances the reliability in the opening operation. In addition, according to the configuration of FIG. 28, a part (that is, a gap) where gripping margin 15a of upper surface cover 11a and gripping margin 15b of lower surface cover 11b (see FIGS. 3A and 3B) do not come into contact with each other is formed by the plurality of recesses. Therefore, the user can easily grip gripping margins 15a and 15b during the opening. That is, package 10 having front end processed portion 14s illustrated in FIG. 28 can enhance the reliability and ease of opening.

[0109] Next, FIG. 29 will be described. Front end processed portion 14t illustrated in FIG. 29 is provided with convex shapes and concave shapes over the entire width in the transverse direction of package 10. That is, in FIG. 29, as front end processed portion 14t, a plurality of bank-shaped protrusions is provided. In FIG. 29, the plurality of bank-shaped protrusions are arranged in parallel to the transverse direction, and thus non-contact parts (that is, gaps) are formed between gripping margins 15a and 15b (see FIGS. 3A and 3B and the like) by the bank-shaped protrusions. Therefore, according to the configuration illustrated in FIG. 29, a load on the separating operation is reduced. Furthermore, in FIG. 29, during the opening, even when the user puts the finger at any position in the bank-shaped protrusions, the finger can be reliably caught by the bank-shaped protrusions. Accordingly, package 10 illustrated in FIG. 29 can enhance the reliability and ease of the opening.

[0110] Next, FIG. 30 will be described. Front end processed portion 14u illustrated in FIG. 30 has a configuration in which the arrangement of convex shapes and concave shapes is reversed to that of front end processed portion 14t illustrated in FIG. 29. Therefore, the configuration of FIG. 30 has the same effect as that of the configuration illustrated in FIG. 29.

[0111] Next, FIG. 31 will be described. Front end processed portion 14v illustrated in FIG. 31 includes a recess having a large quadrangular shape in the vicinity of the end portion of unsealed portion 15 of upper surface cover 11a.

[0112] In the periphery of the large recess having the quadrangular shape, a non-contact part (that is, a gap) is formed between gripping margins 15a and 15b. Therefore, the non-contact part is provided in the end portion of package 10. Accordingly, when the user grips gripping margins 15a and 15b with the fingers to open package 10, the finger can be easily caught by front end processed portion 14v. As a result, the configuration illustrated in FIG. 31 enhances the ease of the separating operation.

[0113] Next, FIG. 32 will be described. Front end processed portion 14w illustrated in FIG. 32 includes a plurality of recesses having a triangular shape in the end portion of unsealed portion 15 on upper surface cover 11a side. Accordingly, gaps that are non-contact parts are formed in the end portion between upper surface cover 11a and lower surface cover

11b.

[0114] The recesses having the triangular shape are arranged so that one sides of the triangular shapes abut on the end portion of unsealed portion 15. In addition, the recesses having the triangular shape are arranged along the end face of unsealed portion 15. Therefore, in the configuration illustrated in FIG. 32, the finger of the user can be easily caught by front end processed portion 14w during the opening. Accordingly, the configuration illustrated in FIG. 32 enhances the ease of the separating operation.

[0115] Next, FIG. 33 will be described. Front end processed portion 14x illustrated in FIG. 33 includes a recess having a large quadrangular shape in a part of the end portion of unsealed portion 15 on upper surface cover 11a side. Accordingly, in the end portion of package 10, a non-contact part (that is, a gap) is formed between gripping margins 15a and 15b.

[0116] As a result, in the configuration illustrated in FIG. 33, in the case where the user grips gripping margins 15a and 15b with the fingers to open package 10, the finger can be easily caught by the end portion of front end processed portion 14x. Therefore, the configuration illustrated in FIG. 33 enhances the ease of the separating operation.

[0117] Next, FIG. 34 will be described. Front end processed portion 14y illustrated in FIG. 34 includes a recess having a quadrangular shape and a protrusion having a quadrangular shape in a part of the end portion of unsealed portion 15 on upper surface cover 11a side. The recess having the quadrangular shape and the protrusion having the quadrangular shape are arranged along the end portion of unsealed portion 15. In addition, in the configuration illustrated in FIG. 34, a plurality of non-contact parts (that is, gaps) are formed between gripping margins 15a and 15b in the end portion of package 10.

[0118] Accordingly, in the configuration illustrated in FIG. 34, in the case where the user grips gripping margins 15a and 15b with the fingers to open package 10, the finger can be easily caught by the end portion of front end processed portion 14y. Therefore, the configuration illustrated in FIG. 34 enhances the ease of the separating operation.

[0119] Next, FIG. 35 will be described. Package 10 illustrated in FIG. 35 includes front end processed portion 14b illustrated in FIG. 8 and front end processed portion 14o illustrated in FIG. 21A or 21B in the vicinity of the end portion of unsealed portion 15 of upper surface cover 11a (see FIGS. 3A and 3B).

[0120] Front end processed portion 14o is formed by extracting the end portion of only upper surface cover 11a (similarly to gripping margin 15a, see FIGS. 3A to 5D). That is, the end face of upper surface cover 11a is not aligned with the end face of lower surface cover 11b (similarly to gripping margin 15b, see FIGS. 3A to 5D) but is shifted therefrom. With the opening method described with reference to FIGS. 4A to 4D, the user turns up parts of gripping margins 15a and 15b of unsealed portion 15 with fingers 17 and 19 so as to be separated from each other. At this time, only one gripping margin (in this case, gripping margin 15b on lower surface cover 11b side) can be gripped first. Then, the user first turns up gripping margin 15a and thereafter can grip the other gripping margin (in this case, gripping margin 15a on upper surface cover 11a side). Therefore, the user can easily open package body 11.

[0121] In the configuration illustrated in FIG. 35, as front end processed portion 14b, a protrusion having quadrangular shape is provided in the vicinity of the end portion of package 10. Therefore, finger 19 is easily caught by the protrusion and thus the user can reliably and easily grip gripping margins 15a and 15b.

[0122] Furthermore, the configuration illustrated in FIG. 35 is also appropriate for the opening method illustrated in FIGS. 5A to 5D. That is, the user pinches gripping margins 15a and 15b of unsealed portion 15 of package 10 with fingers 19 of one hand and moves fingers 19 in opposite directions. This allows finger 19 to be caught by front end processed portion 14n provided on gripping margin 15a side (that is, upper surface cover 11a), so that only gripping margin 15a is turned up and separated from gripping margin 15b.

[0123] In package 10 of FIG. 35, front end processed portion 14o is disposed by extraction on one side of the end portion thereof. Therefore, the end portion of upper surface cover 11a and the end portion of lower surface cover 11b are formed to be shifted from each other. That is, the end portion of gripping margin 15a is positioned on the inside in relation to the end portion of gripping margin 15b. Therefore, in the case where the user slides fingers 19 of one hand, while holding gripping margin 15b (of which the end portion is positioned on the outside) with one finger, the user slides another finger on gripping margin 15a provided with front end processed portion 14n (of which the end portion is positioned on the inside and which includes the plurality of protrusions having the elongated quadrangular shapes). Accordingly, the user can reliably and easily separate gripping margins 15a and 15b from each other.

[0124] Next, FIG. 36 will be described. Package 10 illustrated in FIG. 36 is Modified Example of package 10 illustrated in FIG. 35. That is, package 10 of FIG. 36 is a combination of front end processed portion 14j (see FIG. 16) and front end processed portion 14b (see FIG. 8), and the shape of an extracted portion thereof is different from that of front end processed portion 14o illustrated in FIG. 35. In the configuration of FIG. 36, the same effect as that of the configuration of FIG. 35 can be obtained.

[0125] In the package described above in each of the embodiments of the present invention, the front end processed portion is provided in the end portion or in the vicinity of the unsealed portion in advance so that a space is provided in a part of the package between the upper surface cover and the lower surface cover. By applying the front end processed portion, the user can enhance the efficiency of the opening when the user separates the upper surface cover and the lower surface cover from each other. In addition, the package described above is useful as a package of a disposable

biosensor having high accuracy or the like. When the biosensor is packaged, the user does not directly touch the biosensor, which is the content, with the finger or the like before the use and can perform the opening operation in conjunction with the operation of mounting the biosensor into the measuring apparatus.

[0126] While the embodiments of the present invention have been described above, the description is merely an example, and various modifications can be made.

[0127] The disclosures of the specifications, the drawings, and the abstracts included Japanese Patent Application No. 2011-285027, filed on December 27, 2011 and Japanese

[0128] Patent Application No. 2012-181475, filed on August 20, 2012 are incorporated herein.

Industrial Applicability

[0129] The present invention is useful for a package which has an packaged object packaged in a package body, and a method for opening the same.

Reference Signs List

[0130]

10	Package
11	Package body
11a	Upper surface cover
11b	Lower surface cover
12	Sealed portion
13	First processed portion
14, 14a, 14b, 14c, 14d, 14e, 14f	Front end processed portion
14g, 14g', 14h, 14i, 14j, 14k, 14L, 14m	Front end processed portion
14n, 14n', 14o, 14p, 14q, 14r, 14s, 14t	Front end processed portion
14u, 14v, 14w, 14x, 14y	Front end processed portion
15	Unsealed portion
15a, 15b	Gripping margin
16	Biosensor
17, 19	Finger
18	Space
18a	Gap
20	Measuring apparatus
21	Sensor mounting portion

Claims

1. A package comprising:

a package body; and
a packaged object packaged by the package body,
wherein the packaged object is a sensor which has a flat plate shape and of which one end portion has a connection electrode,
the package body includes a sheet-like upper surface cover and a sheet-like lower surface cover which are arranged above and below the packaged object, respectively,
the package body includes an adhesive portion which seals the object by attaching the upper surface cover and the lower surface cover that interpose the packaged object therebetween in a surrounding part of the packaged object,
at least one of the upper surface cover and the lower surface cover includes a protrusion or a recess on a surface of the upper surface cover or the lower surface cover in a part which is on an outer side of the adhesive portion and is close to the connection electrode, and
a non-contact space is formed between the upper surface cover and the lower surface cover in a surrounding part of the protrusion or the recess.

2. The package according to claim 1, wherein an outer peripheral part of at least one of the upper surface cover and

the lower surface cover includes the protrusion or the recess.

3. The package according to claim 1, wherein the protrusion or the recess is provided on an inward side of an outer peripheral part of at least one of the upper surface cover and the lower surface cover.

4. The package according to claim 2, wherein at least one of the upper surface cover and the lower surface cover includes a plurality of the protrusions or the recesses.

5. The package according to claim 4, wherein widths of the plurality of the protrusions or the recesses are not the same, and the width of the protrusion or the recess in a vicinity of an end portion of the upper surface cover or the lower surface cover is greater than the width of the protrusion or the recess on an inward side in relation to the end portion.

6. The package according to claim 1, wherein the protrusion or the recess has a display function.

7. The package according to claim 1, wherein the protrusion or the recess has a braille display function.

8. The package according to claim 1, wherein at least one of the upper surface cover and the lower surface cover is a laminated film and has a desiccant on a surface that faces the packaged object.

9. The package according to claim 1, wherein an end portion of an outer peripheral part of at least one of the upper surface cover and the lower surface cover is shifted to an inside in relation to an outer peripheral end portion of the other cover in a vicinity of the protrusion or the recess.

10. The package according to claim 1, wherein the upper surface cover and the lower surface cover have a rectangular shape, and at least one of the upper surface cover and the lower surface cover has the protrusion or the recess on a short side that is close to the connection electrode.

11. A method for opening the package according to claim 1, comprising:

separating the upper surface cover from the lower surface cover on a short side where the protrusion is provided in a state where the adhesive portion remains on the opposite side to the protrusion until the connection electrode is exposed;

mounting the connection electrode into a measuring apparatus; and

separating the upper surface cover from the lower surface cover over the entire adhesive portion.

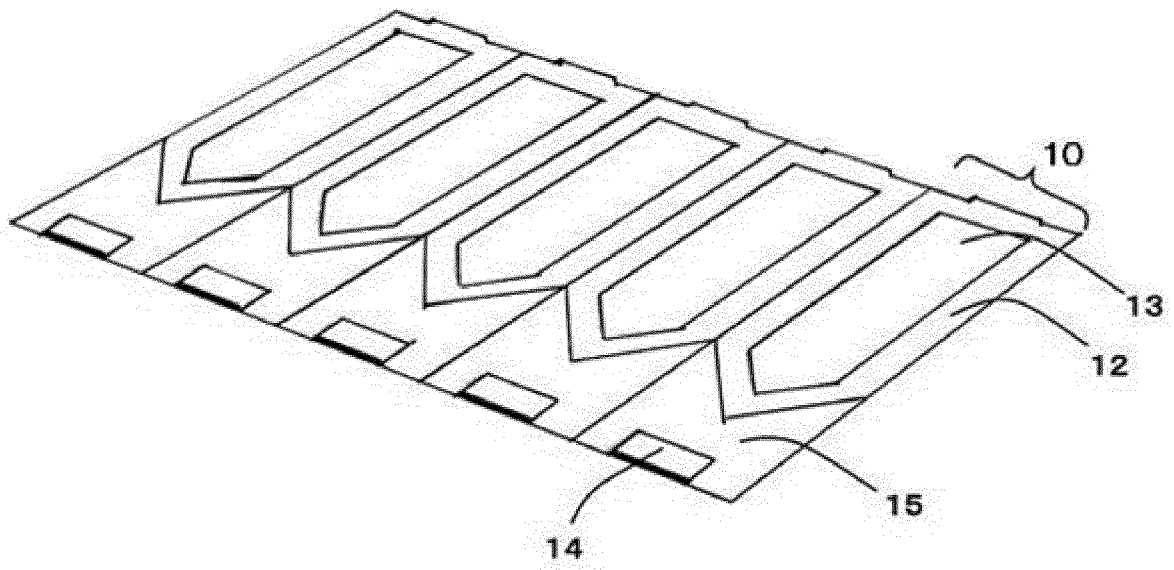


FIG. 1

FIG. 2A

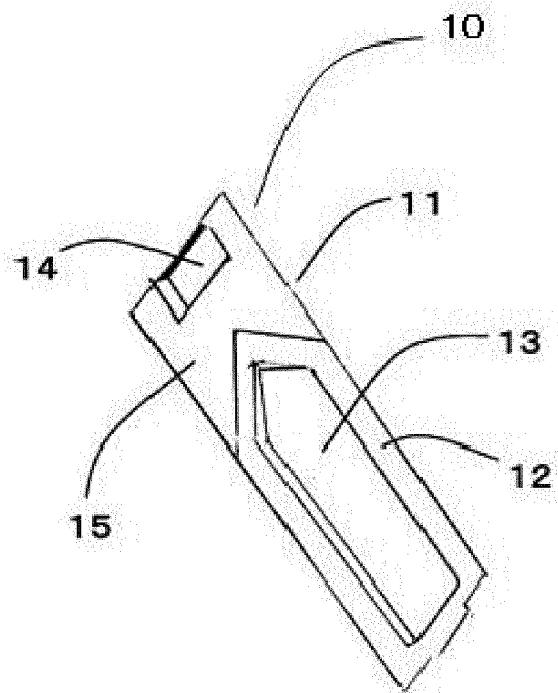


FIG. 2B

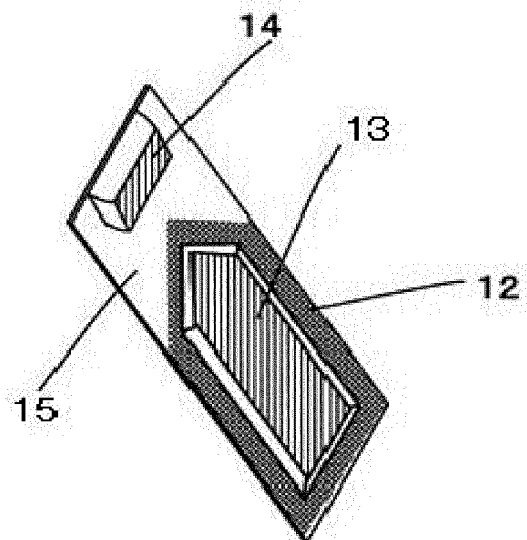


FIG. 3A

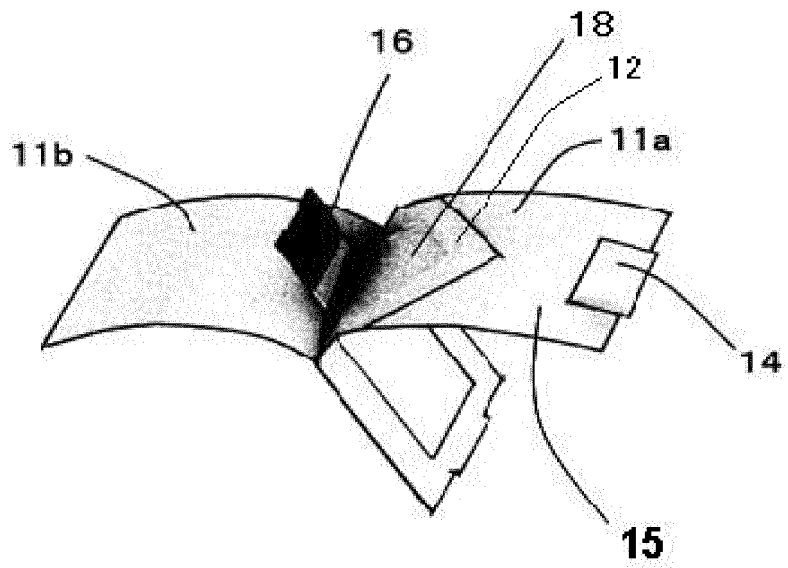
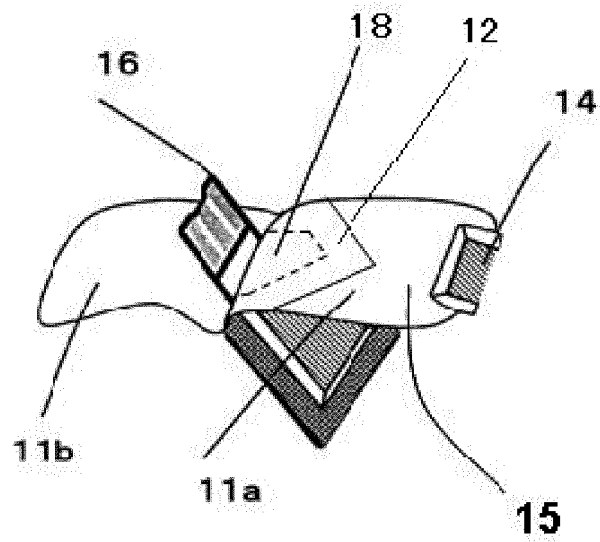
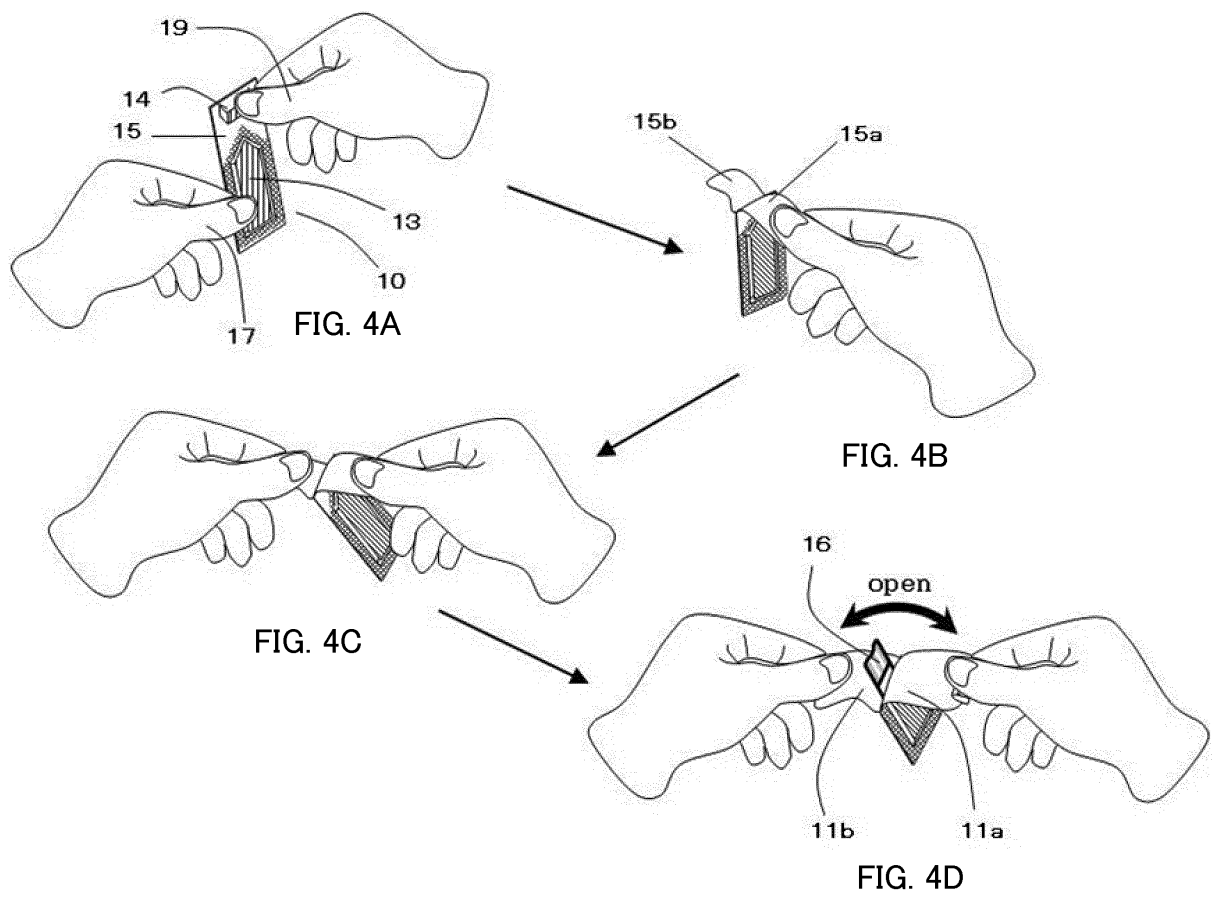
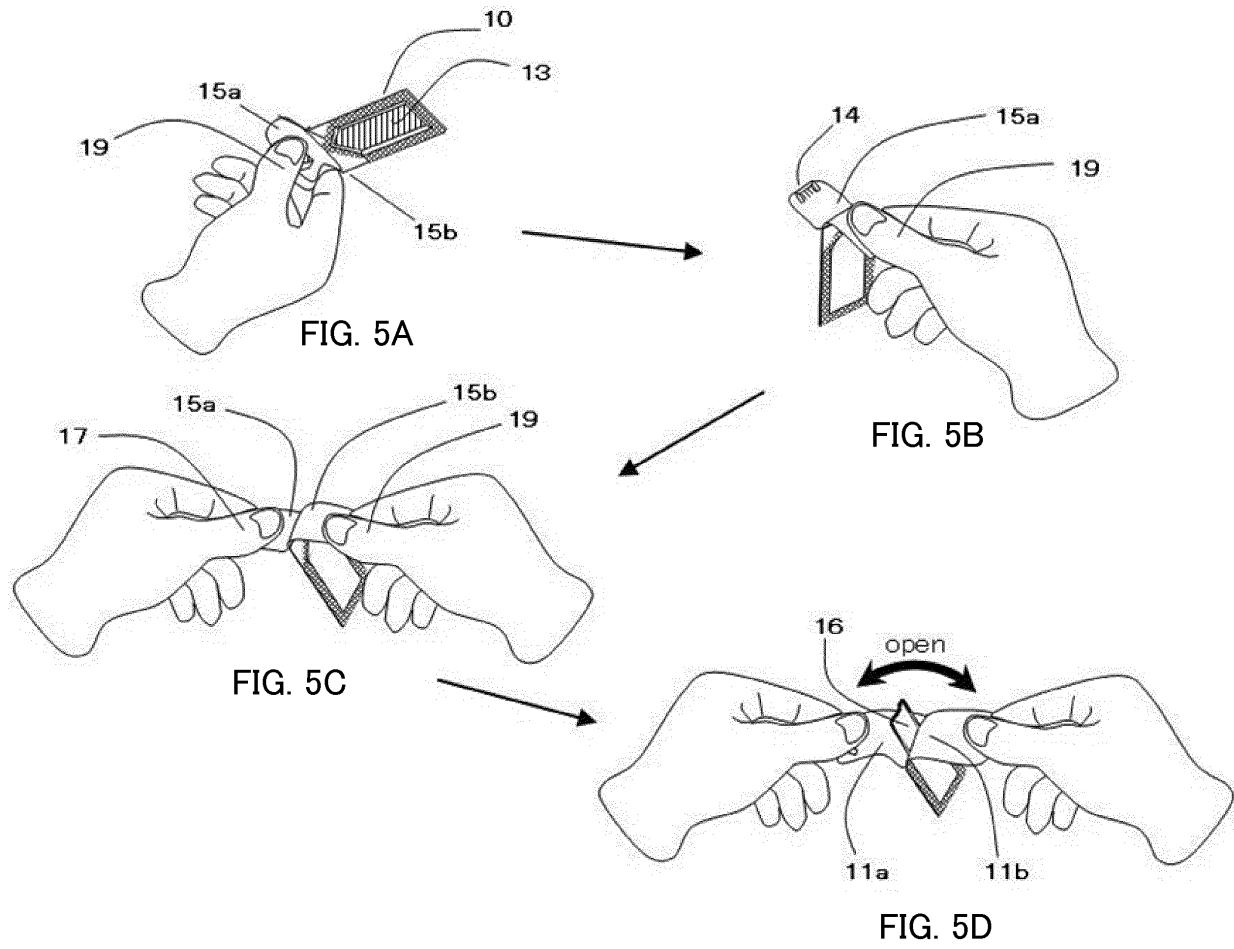


FIG. 3B







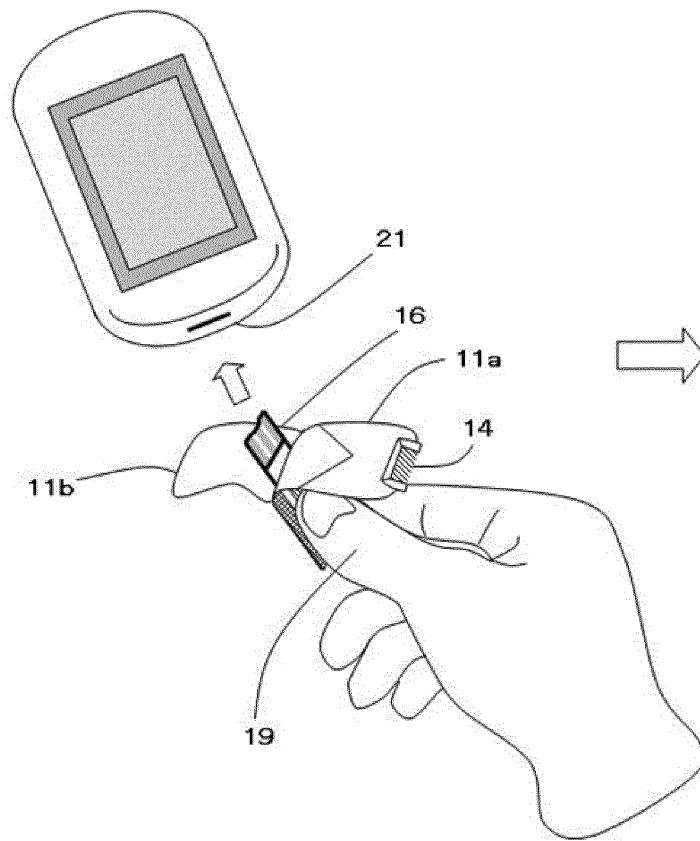


FIG. 6A

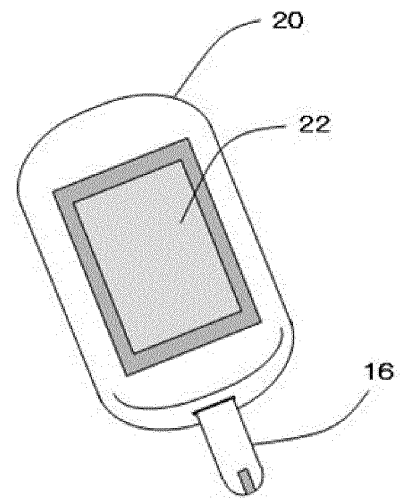


FIG. 6B

FIG. 7

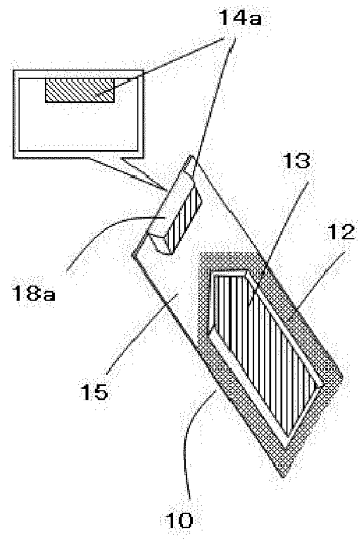


FIG. 8

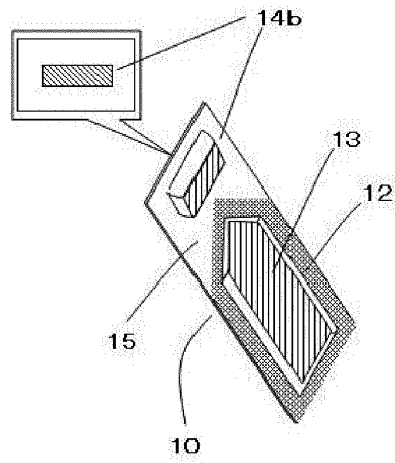


FIG. 9

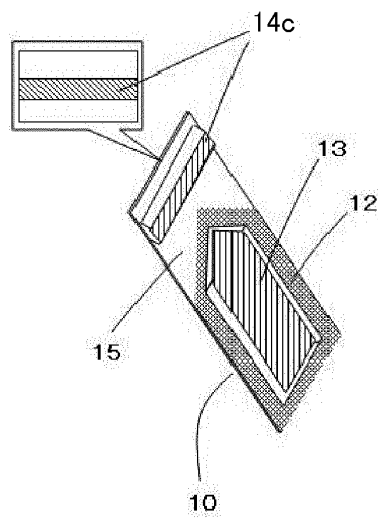


FIG. 10

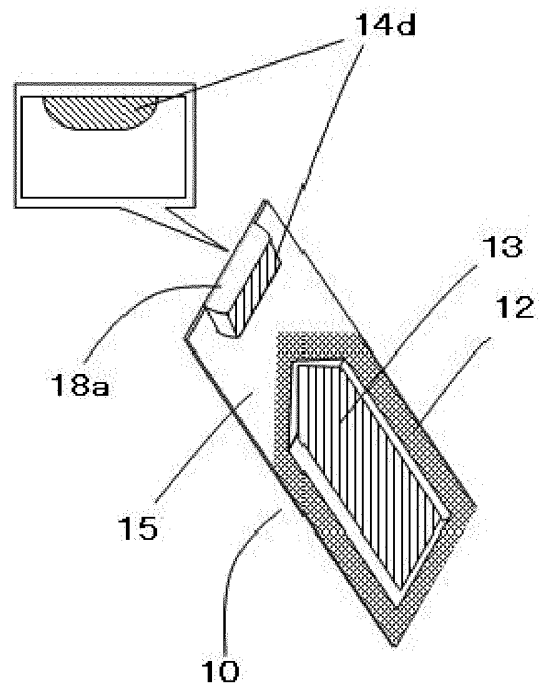
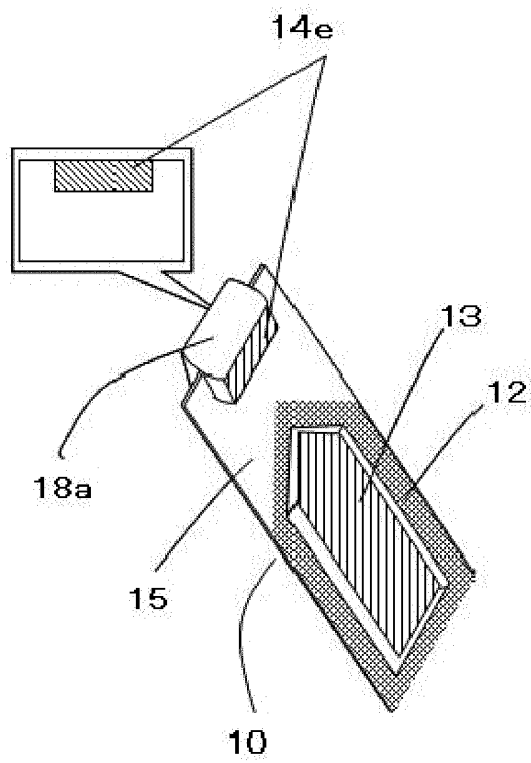


FIG. 11



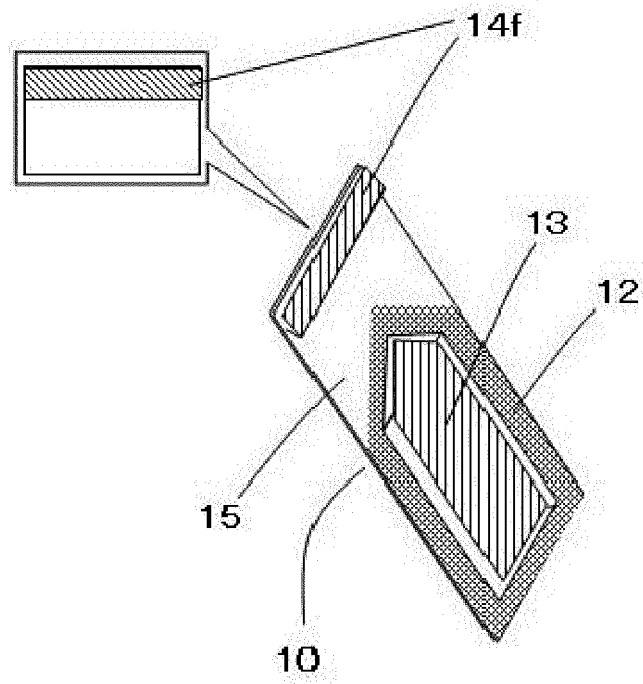


FIG. 12

FIG. 13A

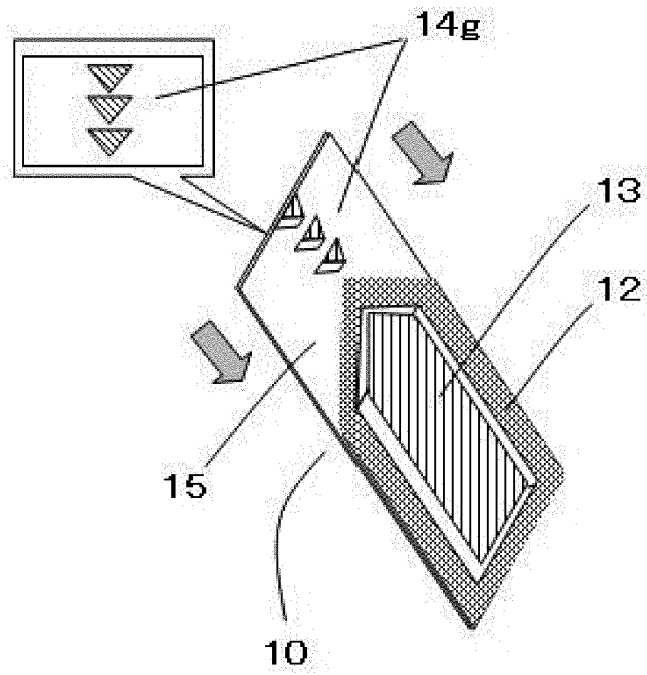


FIG. 13B

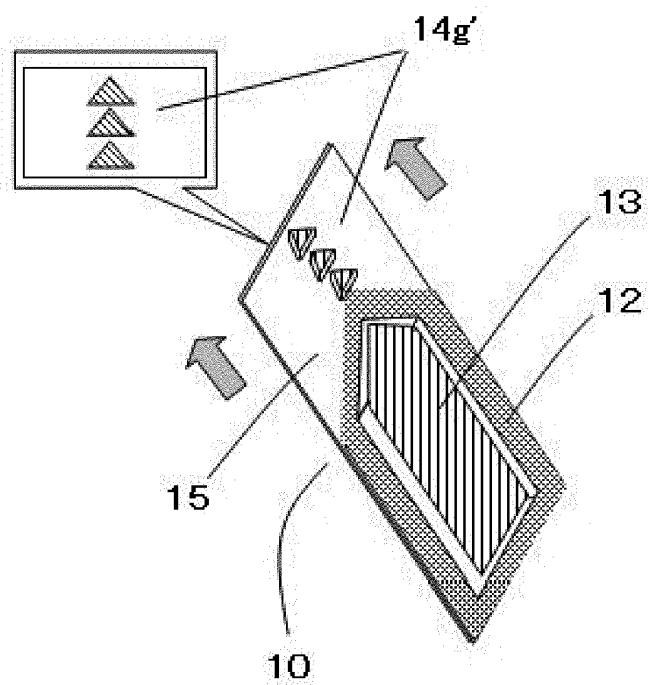


FIG. 14

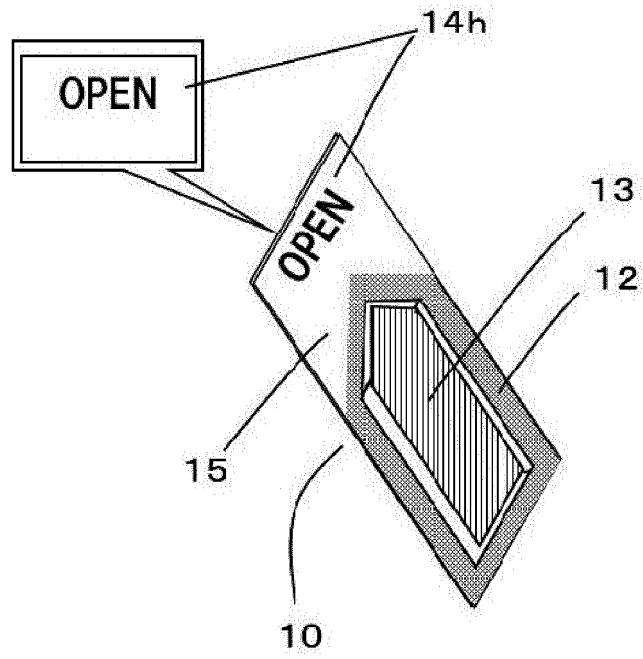


FIG. 15

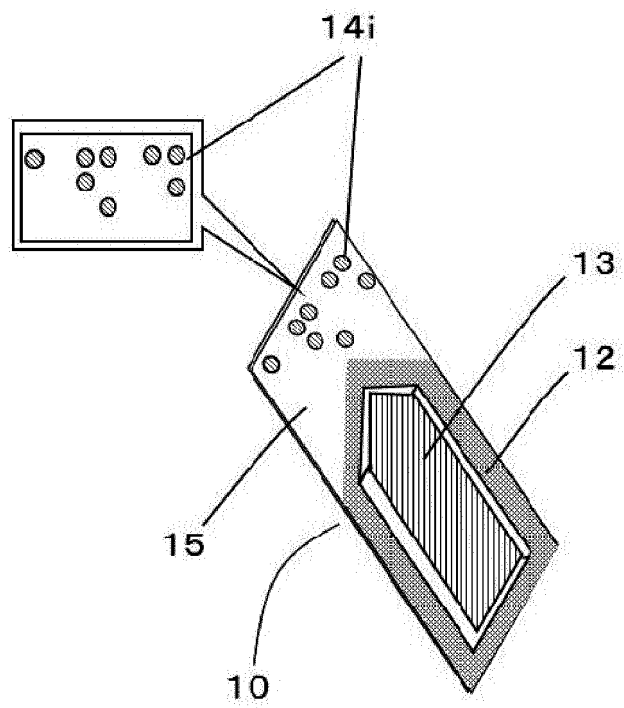


FIG. 16

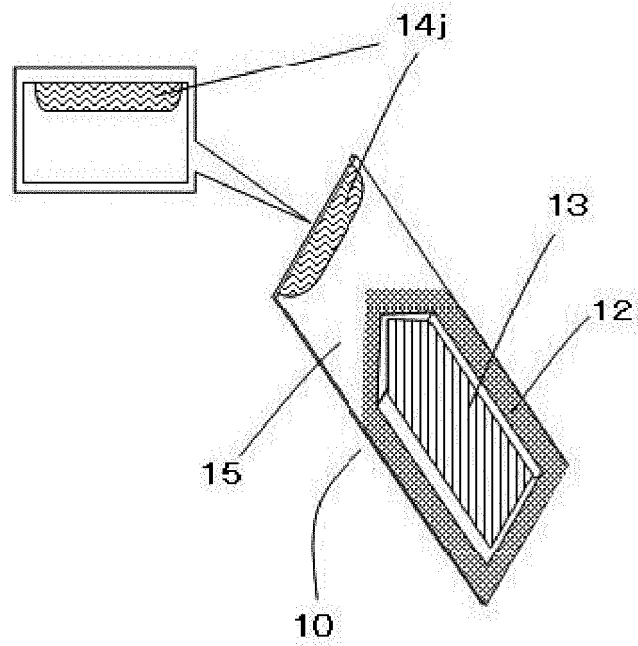


FIG. 17

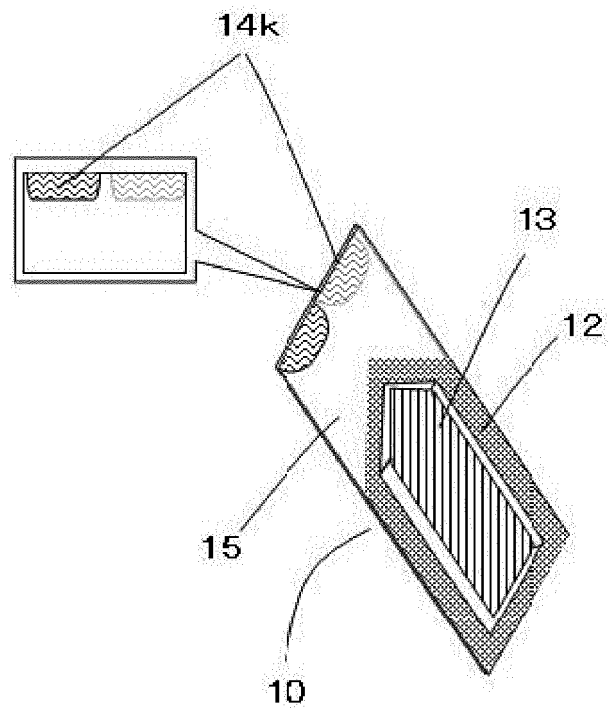


FIG. 18

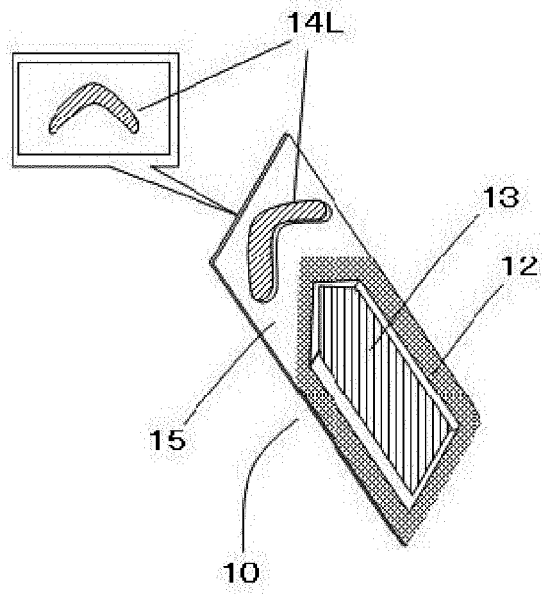
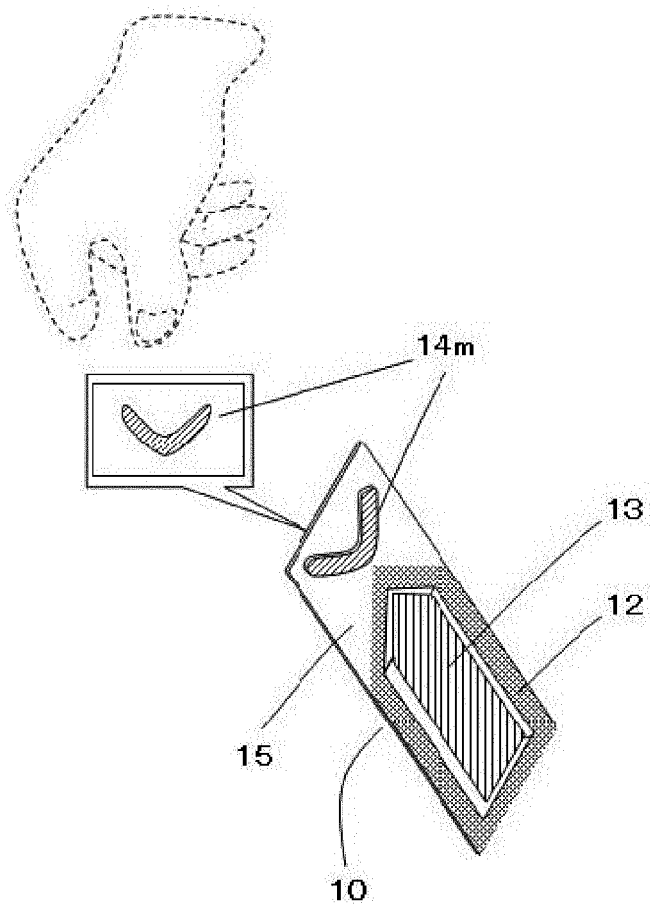


FIG. 19



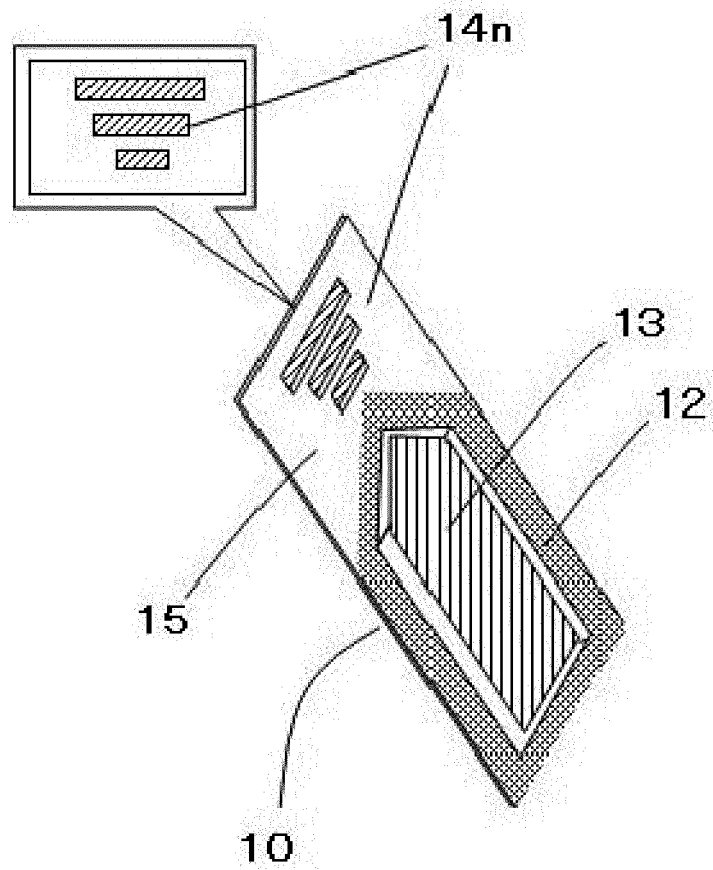


FIG. 20

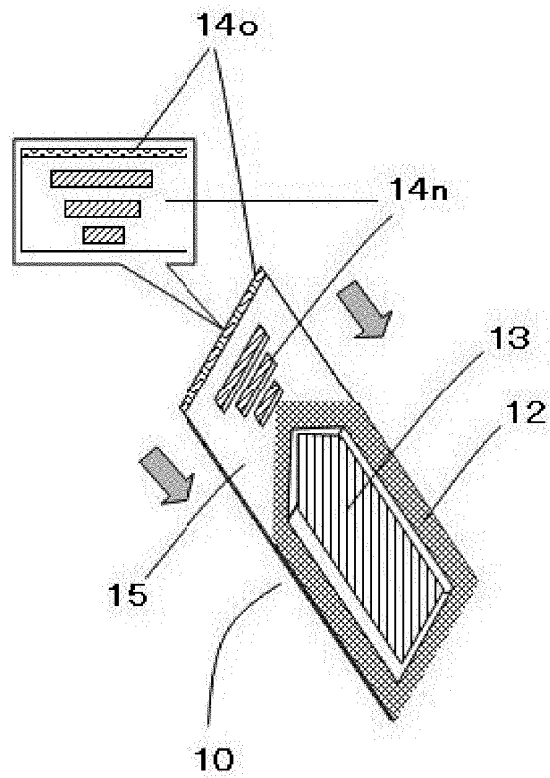


FIG. 21A

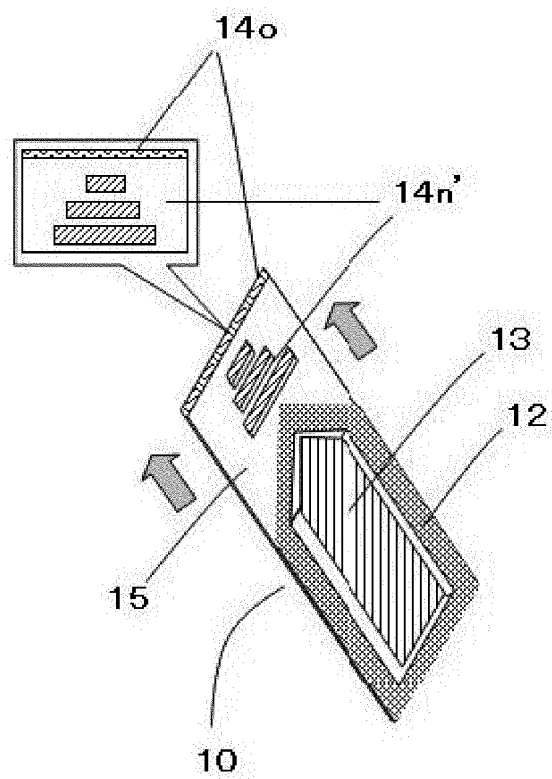


FIG. 21B

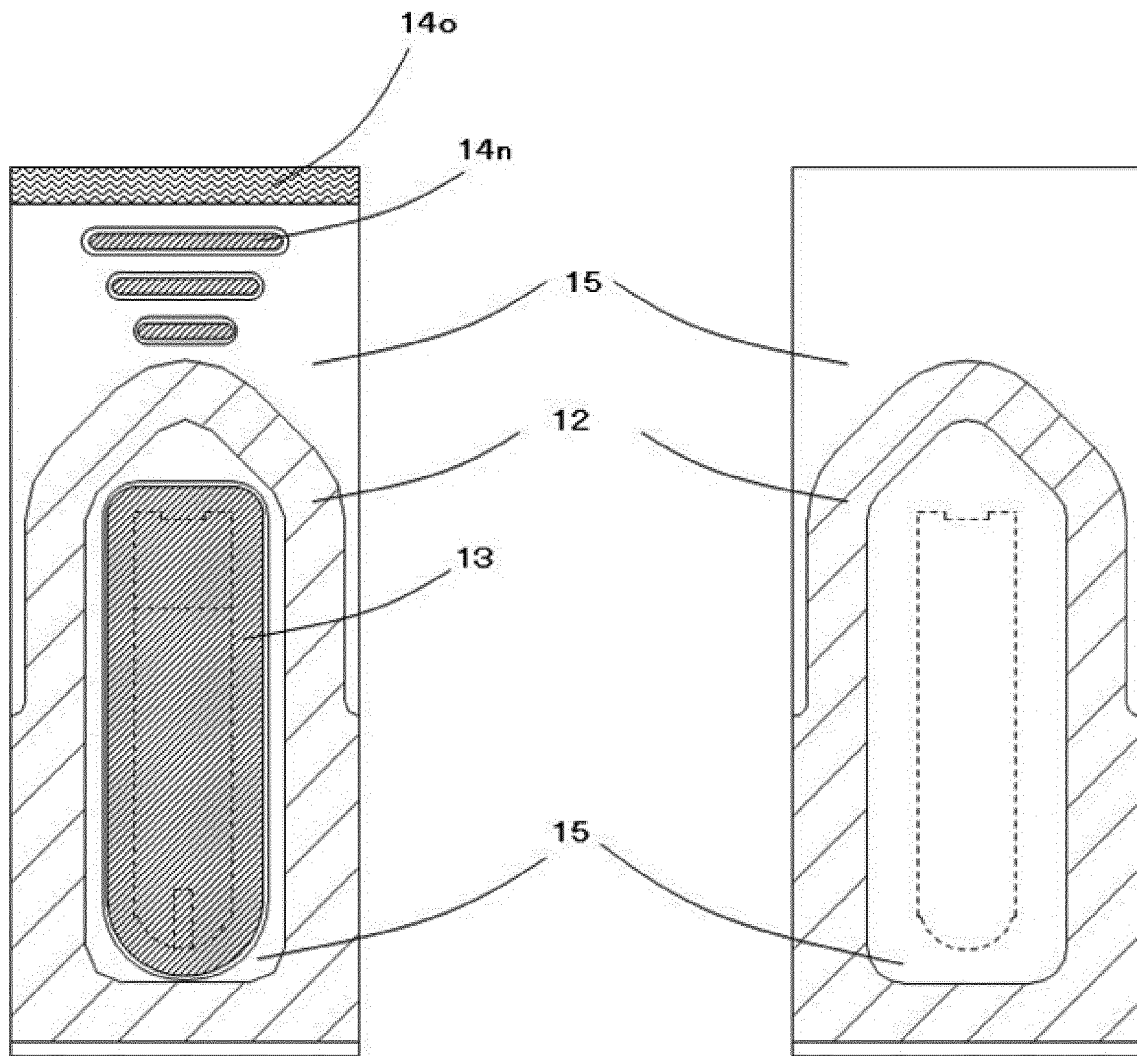


FIG. 22A

FIG. 22B

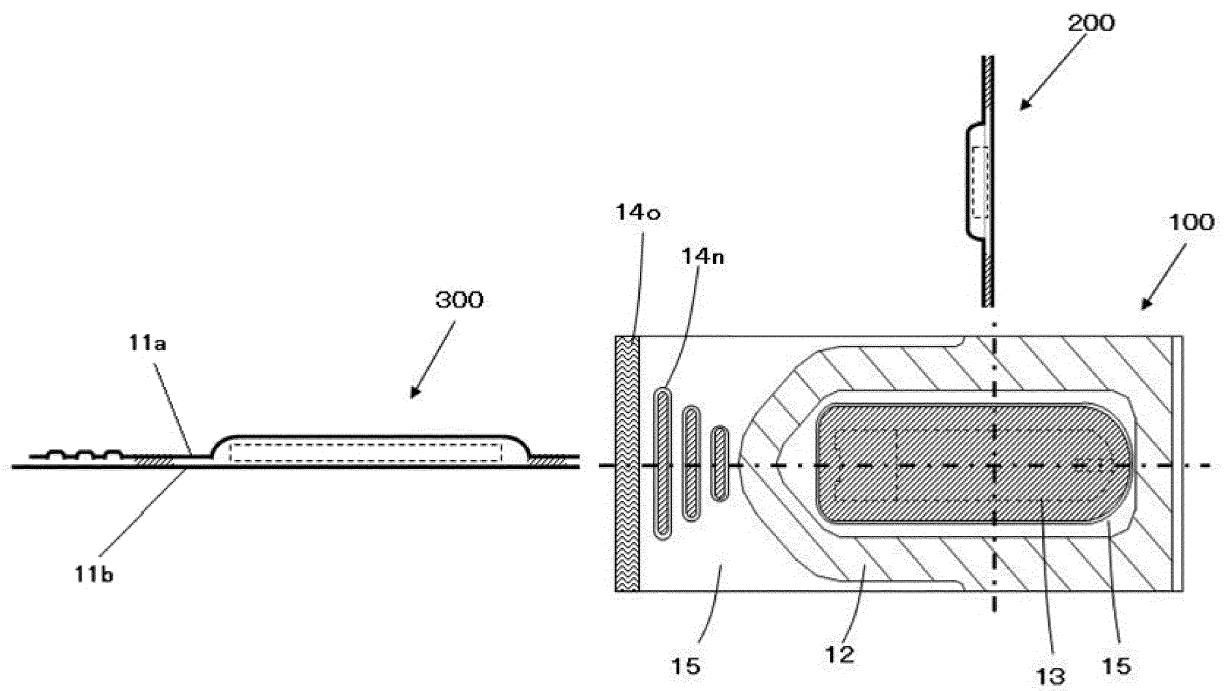


FIG. 23

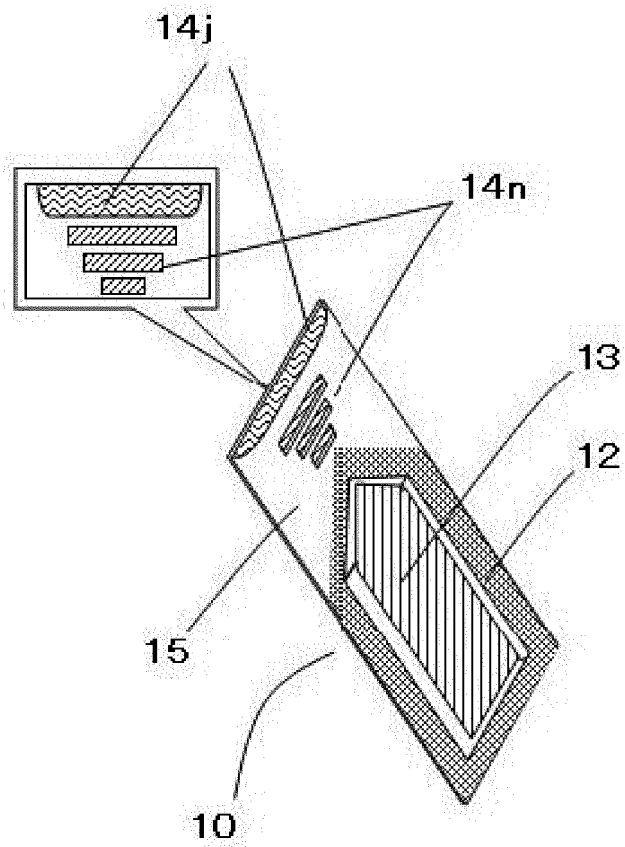


FIG. 24

FIG. 25

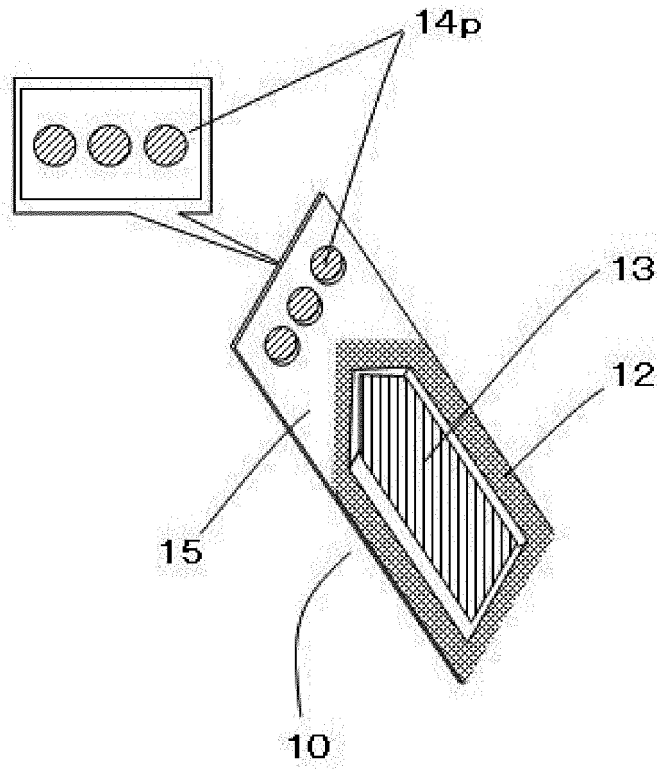


FIG. 26

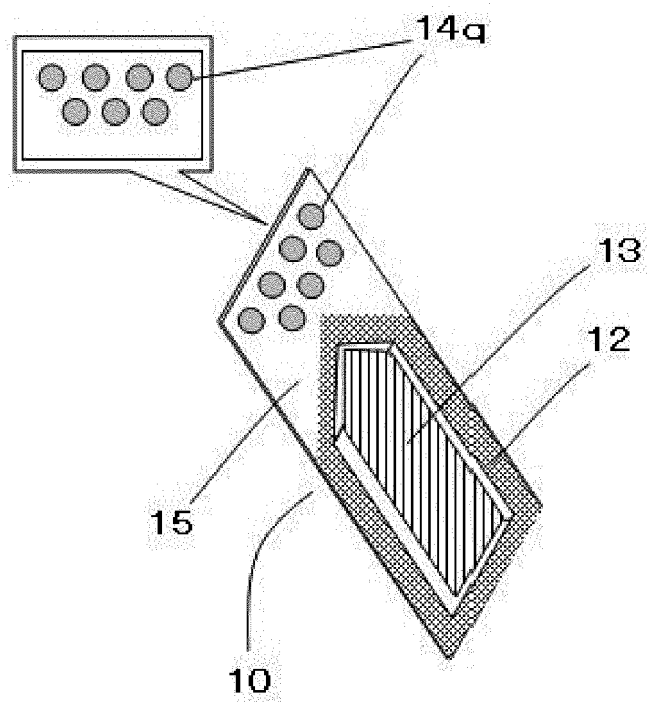


FIG. 27

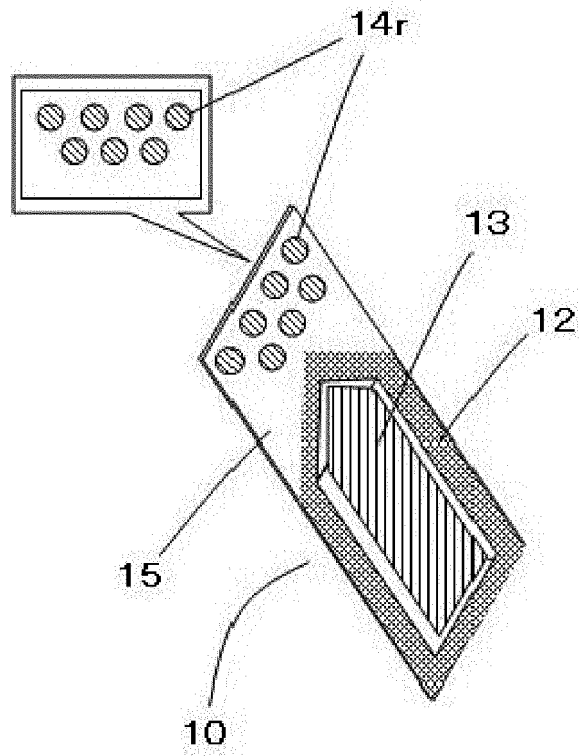


FIG. 28

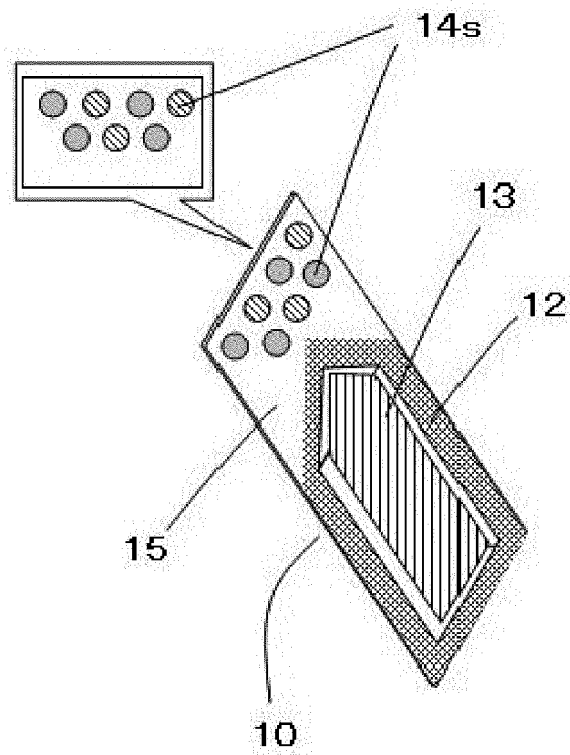


FIG. 29

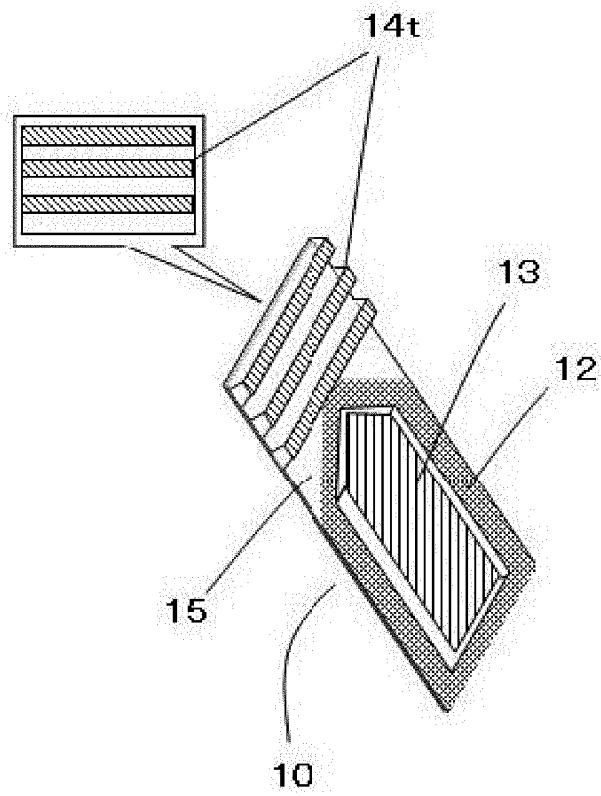


FIG. 30

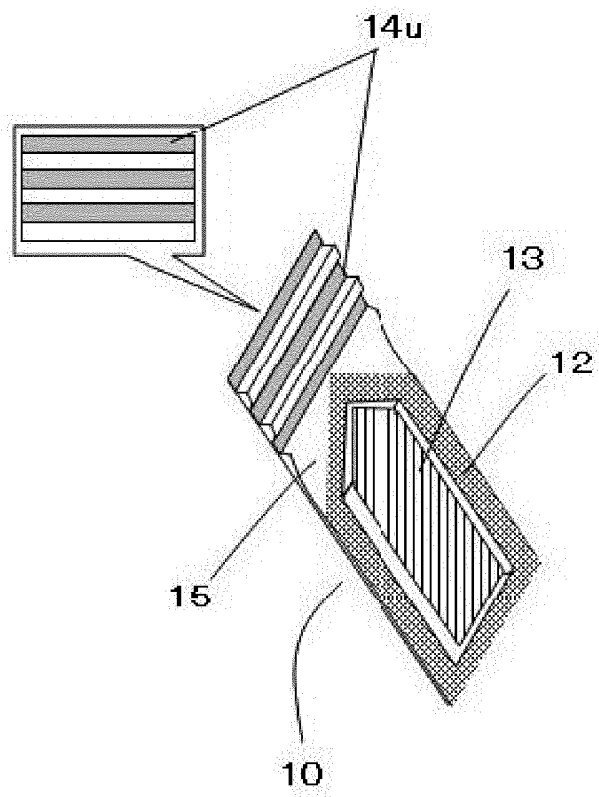


FIG. 31

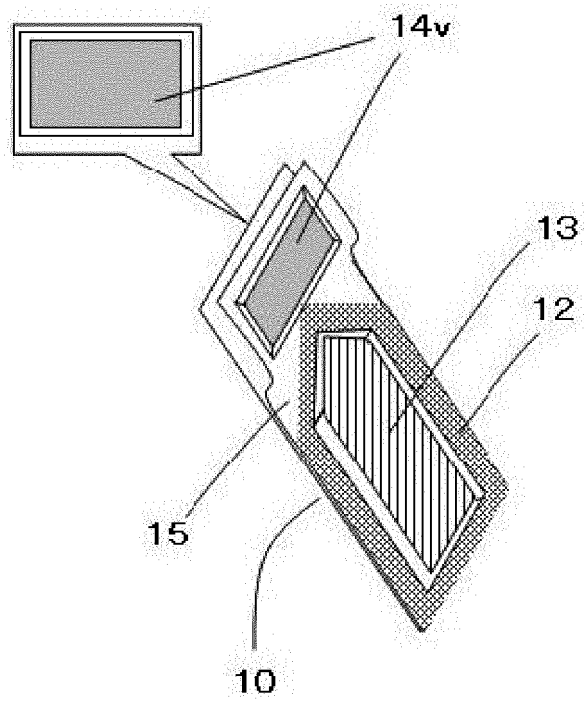


FIG. 32

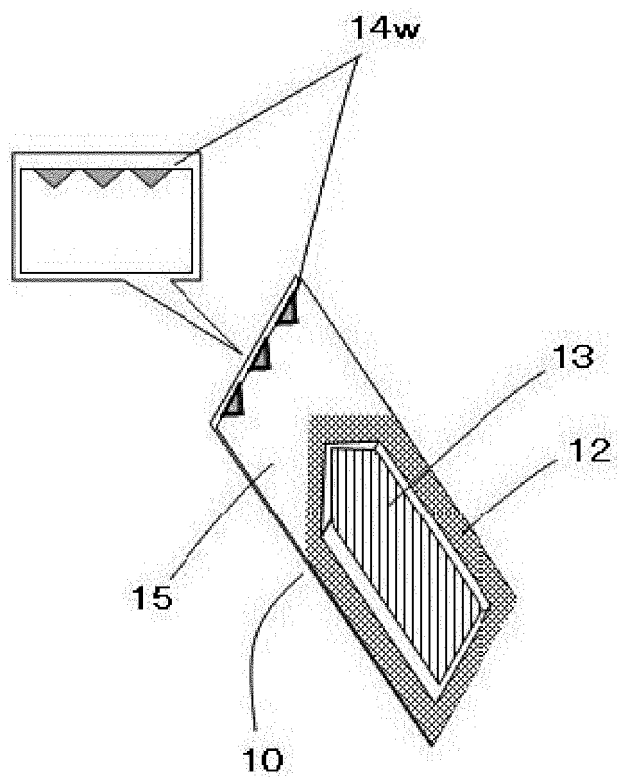


FIG. 33

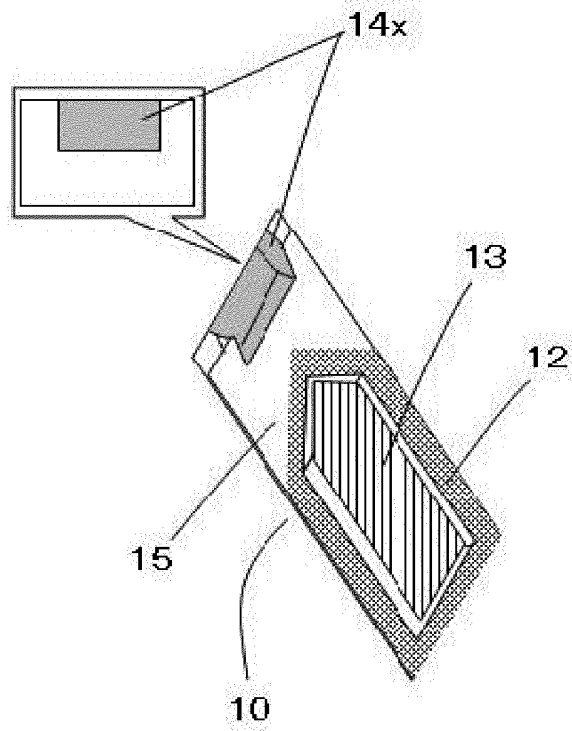


FIG. 34

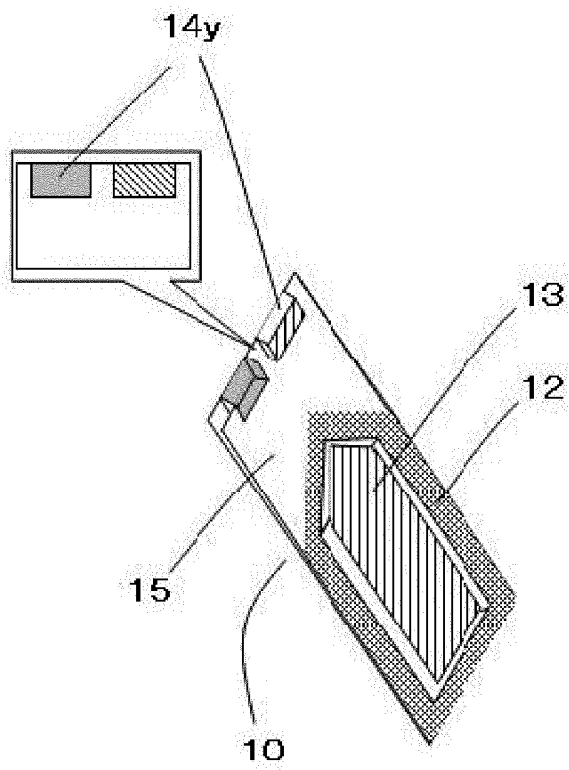


FIG. 35

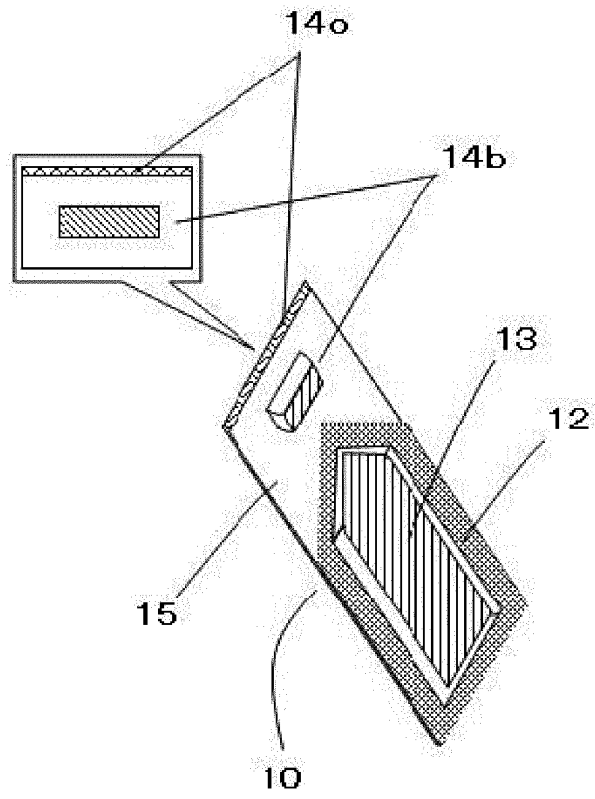
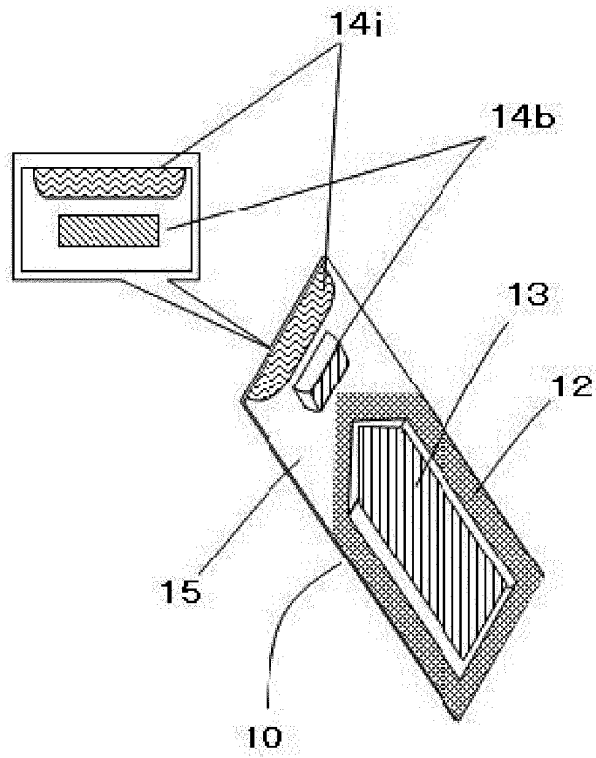


FIG. 36



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2012/008377

A. CLASSIFICATION OF SUBJECT MATTER

B65D85/86(2006.01)i, B65D33/00(2006.01)i, B65D75/30(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)

B65D85/86, B65D30/00-33/38, B65D67/00-79/02, B65D81/18-81/30, B65D81/38, G01N27/28

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	1996-2013
Kokai Jitsuyo Shinan Koho	1971-2013	Toroku Jitsuyo Shinan Koho	1994-2013

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.
Y	JP 2003-065996 A (Matsushita Electric Industrial Co., Ltd.), 05 March 2003 (05.03.2003), paragraphs [0003] to [0005]; fig. 11 to 12 (Family: none)	1-11
Y	JP 2000-043906 A (Okura Industrial Co., Ltd.), 15 February 2000 (15.02.2000), paragraphs [0013] to [0018]; fig. 1 to 6 (Family: none)	1-11
Y	JP 2002-205769 A (Dainippon Printing Co., Ltd.), 23 July 2002 (23.07.2002), paragraphs [0009] to [0012], [0021] to [0024]; fig. 1 to 3 (Family: none)	1-11

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

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"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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

"&" document member of the same patent family

Date of the actual completion of the international search
29 March, 2013 (29.03.13)Date of mailing of the international search report
09 April, 2013 (09.04.13)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2012/008377

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 026811/1989 (Laid-open No. 117367/1990) (Pfizer Pharmaceuticals Inc.), 20 September 1990 (20.09.1990), page 4, line 16 to page 11, line 4; fig. 1 to 3 (Family: none)	1-11
A	JP 2009-150905 A (Arkray, Inc.), 09 July 2009 (09.07.2009), entire text; all drawings & US 2005/0221470 A1 & EP 1507143 A1 & WO 2003/100408 A1	1-11
A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 081864/1985 (Laid-open No. 196960/1986) (Kao Corp.), 09 December 1986 (09.12.1986), entire text; all drawings (Family: none)	1-11

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2012/008377

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Claim 1 discloses "having a protrusion or a recess on a surface of the upper cover or the lower cover and that a noncontact space between the upper cover and the lower cover is formed in a portion around the protrusion or the recess".

Since "or" is used more than once in the above sentence, the invention in claim 1 includes an invention that becomes unclear depending on a combination (for example, "having a protrusion on a surface of the upper cover, and that a noncontact space between the upper cover and the lower cover is formed in a portion around the recess").

Moreover, it is unclear in which direction the "protrusion" and the "recess" in the above description protrude or are recessed.

Therefore, in the case of the recess recessed in the direction of the upper cover in the lower cover, the interior of the recess is a noncontact space, but no noncontact space is present around the recess.

Therefore, since it is unclear in which direction the "protrusion" and the "recess" in the above description protrude or are recessed, the invention in claim 1 includes an inconsistent configuration.

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2000203600 A [0004]
- JP 2011285027 A [0127]
- JP 2012181475 A [0128]