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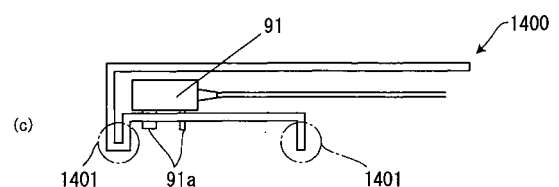
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(54) **Package for electric apparatus**

(57) To provide a package for an electric apparatus which allows a power cord to be efficiently housed when an electric apparatus is packed and which enables the power supply cord to be appropriately held in a packaging box. A power supply plug holding member 50 is formed by creating a cut-in portion 52 through which a power supply plug 611 is inserted, in a foldable packaging material such as a corrugated fiberboard and then folding the packaging material into a general U shape. The power supply plug 611 of an electric apparatus 61 is locked in the cut-in portion 52 in the power supply plug holding member 50, which is then housed between a packaging box 62 and the electric apparatus 61.

FIG. 14



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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a package for an electric apparatus, and in particular, to a package made taking into account housing of a power supply cord of an electric apparatus.

Description of the Related Art

[0002] Packaging boxes such as corrugated fiberboard boxes have hitherto been widely used to transport articles without damage. To pack an electric apparatus or the like which is not resistant to an impact, for example, a cushioning material such as styrene foam is filled into the box. Further, the electric apparatus may be provided with an accessory such as a power supply cord extending from the electric apparatus main body or a remote control device. Accordingly, packing of these members must be taken into account. Japanese Patent Laid-Open Publication No. 2001-315759, Japanese Patent Laid-Open Publication No. 2002-80027 and Japanese Utility Model Registration No. 3096243 (patent documents 1 to 3) disclose conventional techniques for housing a power supply cord and the like in such a packaging box.

[0003] The patent references deal with problems such as the complicatedness of an operation of housing a power supply cord in a dedicated packaging member (for example, a box) and higher costs resulting from an increase in the number of packaging members. According to the patent references, a power supply cord is locked or housed in a packaging box in which an electric apparatus is packed or in a cushioning material, thus eliminating the need for a packaging member in which the power supply cord and the like are housed. However, when the power supply cord connected to the electric apparatus main body is housed in the packaging box in which the electric apparatus is packed or in the cushioning material, that operation may be complicated (since the power supply cord is connected to the electric apparatus main body and there is a fixed relationship between the electric apparatus main body and the packaging box or cushioning material, the positional relationship between the power supply cord and the packaging box or cushioning material is limited, thus complicating operations such as fitting of the power cord into the packaging box or cushioning material) .

SUMMARY OF THE INVENTION

[0004] In view of these problems, it is an object of the present invention to provide a package for an electric apparatus which allows a power supply cord to be efficiently housed when an electric apparatus is packed and which enables the power supply cord to be appropriately

held in a packaging box.

[0005] According to Claim 1, there is provided a package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being characterized by comprising a power supply plug holding member constructed by folding a foldable packing material such as a corrugated fiberboard at one position into a general L-shape and forming a cut-in portion or a notch in one or both of two surfaces formed across the fold, a plug terminal of the power supply plug being inserted through the cut-in portion or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material.

[0006] According to this configuration, the "power supply plug holding member" can be formed simply by forming, in the corrugated fiberboard or the like, the cut-in portion or notch through which the plug terminal of the power supply plug is inserted and then folding the corrugated fiberboard into two. The power supply plug (power supply cord) can be locked in the "power supply plug holding member" simply by inserting the plug terminal into the cut-in portion or notch. Then, the power supply plug holding member holding the power supply plug is housed in the packaging box to hold the power supply plug (power supply cord) in the packaging box. The "power supply plug holding member" has two planes (L-shaped). Consequently, the plug terminal can be inserted and held in one of the planes, whereas the other plane separates (protects) the power supply plug (power supply cord) from the electric apparatus.

[0007] According to Claim 2, there is provided a package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being characterized by comprising a power supply plug holding member constructed by folding a foldable packing material such as a corrugated fiberboard at two positions into a general U shape and forming a cut-in portion or a notch in one or more of three surfaces formed across the folds, a plug terminal of the power supply plug being inserted through the cut-in portion or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material.

[0008] According to this configuration, the "power supply plug holding member" is substantially U-shaped. Consequently, the power supply plug (power supply cord) can be held so as to be sandwiched between three

planes.

[0009] According to Claim 3, the package for the electric apparatus according to Claim 1 or 2 is characterized in that when the power supply plug is locked in the power supply plug holding member, the plug terminal of the power supply plug is inserted through the cut-in portion or notch so that the power supply plug is held at an inside position in a direction in which the power supply plug holding member is folded, and the power supply plug holding member holding the power supply plug is accommodated in the gap portion between the electric apparatus and the packaging box so as to prevent the plug terminal of the power supply plug from projecting toward the electric apparatus.

[0010] With this arrangement, the power supply plug holding member is housed in the gap portion between the electric apparatus and the packaging box so as to prevent the plug terminal of the power supply plug from projecting toward the electric apparatus. This prevents the plug terminal from contacting the plug terminal.

[0011] According to Claim 4, the package for the electric apparatus according to any of Claims 1 to 3 is characterized by comprising a projecting portion that is substantially as long as or longer than the plug terminal of the power supply plug projected from the cut-in portion or notch in the power supply plug holding member by inserting the plug terminal through the cut-in portion or notch, the projecting portion being formed on a surface of the power supply plug holding member from which the plug terminal projects, by folding the power supply plug holding member or by using a tongue piece portion formed by creating a cut-in portion in a part of the power supply plug holding member.

[0012] With this arrangement, the projecting portion is formed on the surface from which the plug terminal projects; the projecting portion is substantially as long as or longer than the projected plug terminal. This prevents the plug terminal from contacting the electric apparatus or packaging box.

[0013] According to Claim 5, the package for the electric apparatus according to any of Claims 1 to 4 is characterized in that an accessory for the electric apparatus such as a remote control device is locked on the power supply plug holding member using a pressure-sensitive adhesive tape or a tying band to house the power supply plug holding member in the gap portion between the electric apparatus and the packaging box.

[0014] With this arrangement, the accessory for the electric apparatus such as a remote control device is housed in the packaging box while being held by the power supply plug holding member.

[0015] According to Claim 6, the package for the electric apparatus according to any of Claims 1 to 4 is characterized in that an accessory housing portion is formed in the power supply plug holding member by creating two substantially parallel cut-in portions of substantially the same length in the power supply plug holding member and bending a band portion sandwiched between the two

cut-in portions and an outside portion of the two cut-in portions in different directions so as to draw out the band portion, or creating one cut-in portion in the power supply plug holding member and bending portions located across the cut-in portion in different directions in a staggered manner, and an accessory for the electric apparatus such as a remote control device is housed in the accessory housing portion, while the power supply plug holding member is housed in the gap portion between the electric apparatus and the packaging box.

[0016] With this configuration, the power supply plug holding member itself forms the accessory holding portion in which the accessory for the electric apparatus such as a remote control device is held. This eliminates the need for a pressure-sensitive adhesive tape or a tying band used to lock the accessory such as a remote control device.

[0017] According to Claim 7, the package for the electric apparatus according to any of Claims 1 to 6 is characterized in that the power supply plug holding member is formed by folding a foldable packaging material such as a generally rectangular corrugated fiberboard, and the dimensions of one or more sides of an external shape of the power supply plug holding member are substantially the same as or slightly smaller than those of one or more sides of the gap portion between the electric apparatus and the packaging box.

[0018] With this arrangement, the dimensions of one or more sides of the external shape of the power supply plug holding member are substantially the same as or slightly smaller than those of one or more sides of the gap portion between the electric apparatus and the packaging box. Accordingly, the power supply plug holding member can be positioned relative to the packaging box.

This prevents the power supply plug holding member from becoming unsteady in the packaging box during transportation or the like. Moreover, an external load imposed on the packaging box can be partly held by the power supply plug holding member.

[0019] According to Claim 8, the package for the electric apparatus according to any of Claims 1 to 7 is characterized in that a plurality of cut-in portions or notches through which the plug terminal of the power supply plug is inserted are formed on the basis of a shape of the terminal of the power supply plug in accordance with a certain specification, or one or more fitting holes are formed into which a grip portion of the power supply plug is fitted.

[0020] With this arrangement, even if for example, the shape of the grip portion of the plug terminal or power supply plug varies depending on its destination, this can be dealt with using a single type of "power supply plug holding member" by forming the notch or fitting hole corresponding to each shape.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

FIG. 1 is a diagram schematically showing a power supply plug holding member in accordance with Embodiment 1; FIG. 1 (a) is a plan development and FIG. 1 (b) is a perspective view.

FIG. 2 is a perspective view showing that a package in accordance with Embodiment 1 is opened.

FIG. 3 is a partly exploded plan view of the package in accordance with Embodiment 1; FIG. 3(a) is a plan development and FIG. 3(b) is a perspective view.

FIG. 4 is a diagram schematically showing another power supply plug holding member; FIG. 4 (a) is a plan development and FIG. 4 (b) is a perspective view.

FIG. 5 is a diagram schematically showing a power supply plug holding member in accordance with Embodiment 2; FIG. 5 (a) is a plan development and FIG. 5(b) is a perspective view.

FIG. 6 is a perspective view showing that a package in accordance with Embodiment 2 is opened.

FIG. 7 is a perspective view illustrating a part of a packing operation for the package in accordance with Embodiment 2.

FIG. 8 is a partly exploded plan view of the package in accordance with Embodiment 2; FIG. 8 (a) is a plan view, FIG. 8 (b) is a side view, and FIG. 8(c) is a rear view.

FIG. 9 is a diagram showing the shapes of various power supply plugs.

FIG. 10 is a diagram showing how the various power supply plugs are associated with the power supply plug holding member in accordance with Embodiment 2.

FIG. 11 is a diagram schematically showing a power supply plug holding member in accordance with Embodiment 3; FIG. 11(a) is a plan development, FIG. 11 (b) is a perspective view, and FIG. 11 (c) is a plan view.

FIG. 12 is a partly exploded plan view of the package in accordance with Embodiment 3.

FIG. 13 is a diagram schematically showing another power supply plug holding member; FIG. 13 (a) is a plan development and FIG. 13 (b) is a perspective view.

FIG. 14 is a diagram schematically showing another power supply plug holding member; FIG. 14(a) is a plan development, FIG. 14(b) is a perspective view, and FIG. 14(c) is a plan view.

FIG. 15 is a diagram schematically showing another power supply plug holding member; FIG. 15 (a) is a plan development and FIG. 15 (b) is a perspective view.

FIG. 16 is a diagram schematically showing a power supply plug holding member in accordance with Embodiment 4; FIG. 11(a) is a plan development, FIG. 11 (b) is a perspective view, and FIG. 11 (c) is a perspective view showing that an accessory has been housed.

FIG. 17 is a partly exploded plan view of a package

in accordance with Embodiment 4.

FIG. 18 is a diagram schematically showing another power supply plug holding member; FIG. 18 (a) is a plan development and FIG. 18 (b) is a perspective view.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Specific embodiments of the present invention will be described with reference to the drawings. The embodiments below simply illustrate forms of implementation of the present invention and are not intended to limit the present invention within the scope of the embodiments.

[Embodiment 1]

[0023] FIG. 1 is a diagram schematically showing a power supply plug holding member in accordance with the present embodiment. FIG. 2 is a perspective view showing that a package for an electric apparatus in accordance with the present embodiment is opened. FIG. 3 is a partly exploded plan view of the package.

[0024] As shown in FIG. 1, a power supply plug holding member 11 in accordance with the present embodiment is generally L-shaped (FIG. 1b) by forming cut-in portions 111 through which a plug terminal 141a of a power supply plug 141 of an electric apparatus (television) 14 is inserted, in a corrugated fiberboard that is a foldable packaging material and folding the corrugated fiberboard at a dashed line 112 in FIG. 1a (FIG. 1b). The cut-in portions 111 are formed during a pressing operation of cutting the corrugated fiberboard into an external shape (rectangle) shown in FIG. 1a. Accordingly, only the required operation is folding of the corrugated fiberboard into a general L shape.

[0025] As shown in FIGS. 2 and 3, the package 1 is composed a packaging box 12, a cushioning material 13 (upper cushioning material 13a and lower cushioning material 13b), the electric apparatus 14, and the power supply plug holding member 11 to which the power supply plug 141 and an accessory (such as a remote control device or a connection cord) 15 are attached. An operation of constructing the package 1 (an operation of housing the electric apparatus 14 in the packaging box 12) may involve locking the accessory 15 on the power supply plug holding member 11 using a pressure-sensitive adhesive tape or a tying band (16a), fitting the plug terminal 141a of the power supply plug 141 into the cut-in portions 111 of the power supply plug holding member 11, attaching the power supply plug holding member 11 to which the accessory 15 and power supply plug 141 are attached, to the electric apparatus 14 using a pressure-sensitive adhesive tape 16b or the like, and then housing the electric apparatus 14 in the packaging box 12 together with the cushioning material 13. Alternatively, the operation may involve housing the lower cushioning

material 13b and the electric apparatus 14 in the packaging box 12, then in this state, attaching the power supply plug 141 to the power supply plug holding member 11 on which the accessory 15 has been locked, attaching the power supply plug holding member 11 to which the accessory 15 and power supply plug 141 are attached, to the electric apparatus 14 using the pressure-sensitive adhesive tape 16b or the like, and then housing the upper cushioning material 13a. As described above, with the package 1 in accordance with the present embodiment, the power supply plug holding member 11, which holds the power supply plug 141 (power supply cord), is independent of the packaging box 12 and cushioning material 13. This facilitates the operation of housing the power supply plug holding member 11. It is also possible to make the required operations flexible. In particular, with the former housing method, articles to be housed in the packaging box 12 can be combined together before being housed in the packaging box 12. This facilitates the operation of housing the articles to be easily housed in the packaging box 12. It is also easier to take the product out of the packaging box 12. This configuration is also effective in preventing users from forgetting to house or take out of the accessory (such as a remote control device or a connection cord) 15.

[0026] Moreover, as shown in FIG. 3, with the package 1 in accordance with the present embodiment, one of two surfaces (L shape) of the power supply plug holding member 11 can be used to separate (protect) the power supply plug 141 and accessory 15 from the electric apparatus 14. This prevents the accessory 15 or the like from contacting and damaging the electric apparatus 14 in spite of a swing or an impact during transportation or the like. Thus, the accessory 15 need not be packed in a vinyl bag or the like. This in turn contributes to environmental protection and reduces costs. Further, the power supply plug 141 is housed in the gap portion between the electric apparatus 14 and the packaging box 12 so as to prevent the plug terminal 141a of the power supply plug 141 from projecting toward the electric apparatus 14. This avoids contacting the plug terminal 141a with the electric apparatus 14 and thus prevents the terminal 141a of the power supply plug from contacting and damaging the electric apparatus 14 in spite of a swing or an impact during transportation or the like. This effect is more effective when a projecting portion 42a that is substantially as long as or longer than the projecting plug terminal 141a is formed by folding a tongue piece portion 42 formed, as shown by a power supply plug holding member 41 in FIG. 4, by creating a cut-in portion in a part of a power supply plug holding member 41. This is because the projecting portion 42a protects the plug terminal 141a and inhibits the surface of the power supply plug holding member 41 in which the cut-in portion 111 is formed from being bent toward the electric apparatus 14 (the angle of the L shape is increased).

[Embodiment 2]

[0027] FIG. 5 is a diagram schematically showing a power supply plug holding member in accordance with the present embodiment. FIG. 6 is a perspective view showing that a package for an electric apparatus in accordance with the present embodiment is opened. FIG. 8 is a partly exploded plan view of the package.

[0028] As shown in FIG. 5, a power supply plug holding member 50 in accordance with the present embodiment is generally U-shaped by forming cut-in portions 51, 52, and 53 through which a plug terminal of a power supply plug of an electric apparatus (recording and reproducing apparatus) 61 is inserted, in a substantially rectangular corrugated fiberboard (foldable packaging material) having a latitudinal (the latitudinal direction is shown by y in FIG. 5 (a)) length that is substantially the same as the inside height (shown by x in FIG. 8(c)) of a packaging box 62, and then folding the corrugated fiberboard, in the same direction, at two dashed lines 55 shown in FIG. 5 (a). A plurality of cut-in portions (51, 52, and 53) are formed in accordance with the shape of the plug terminal (different plug terminals may have respective numbers of terminals, respective shapes, or respective distances between the terminals). Moreover, fitting holes 54 are formed into which a grip portion of the power supply plug is fitted. FIG. 9 shows examples of various shapes of the power supply plug (power supply plugs 91 and 92). FIG. 10 shows cut-in portions in the power supply plug holding member 50 corresponding to the respective power supply plugs. Thus, the power supply plug holding member 50 in accordance with the present embodiment allows a single type of power supply plug holding member 50 to deal with the various shapes of the power supply plug.

[0029] FIG. 7 shows a perspective view illustrating a part of a process of housing the recording and reproducing apparatus 61 in the packaging box 62. As shown in the figure, a package 60 in accordance with the present embodiment is constructed by fitting the recording and reproducing apparatus 61 into a cushioning material 63, which is then housed in the packaging box 62, and then fitting a power supply plug (power supply cord) 611 into the power supply plug holding member 50, which is then housed in the gap portion between the recording and reproducing apparatus 61 and the packaging box 62. If a power supply plug 91 is housed in which a projecting direction of the plug terminal 91a is normal to an extending direction of the cord as shown in FIGS. 9 (a1) and 9 (a2), it is housed so that the plug terminal does not extend toward the electric apparatus (recording and reproducing apparatus 61) as shown in FIG. 8. Alternatively, as shown in FIG. 8, a pressure-sensitive adhesive tape or a tying band may be used to attach the accessory for the recording and reproducing apparatus 61 such as a remote control device or a connection cord to the power supply plug holding member 50 (its part corresponding to the inside of the general U shape).

[0030] As described above, with the package 60 in ac-

cordance with the present embodiment, the "power supply plug holding member 50" can be formed simply by folding twice a corrugated fiberboard already cut by pressing (having its external shape and cut-in portions and fitting holes already formed) (the power supply plug holding member 50 can be formed easily and inexpensively). The package 60 can then be formed (the electric apparatus can be housed in the packaging box) by inserting the power supply plug 611 (or power supply plug 91) into the power supply plug holding member 50 (which is independent of the packaging box 62 and cushioning material 63 and thus has a high degree of freedom to allow easy operations). This makes the required process clear and simple. Further, the general U shape of the "power supply plug holding member 50" enables the power supply plug 611 (power supply cord) to be held by being switched between three planes. This allows the "power supply plug holding member 50" to exert a stronger force to hold the power supply plug 611. The "power supply plug holding member 50" also enables the power supply plug 611 (power supply cord) to be separated from the electric apparatus (recording and reproducing apparatus 61). This prevents a plug terminal 611a of the power supply plug 611 from projecting toward the electric apparatus (recording and reproducing apparatus 61). The electric apparatus (or power supply cord) can thus be protected (the power supply plug is inhibited from "moving uncontrollably" and contacting and damaging the electric apparatus during transportation or the like). Further, as shown in FIG. 8 (a), the power supply plug holding member 50 folded into the general U shape is subjected to a certain degree of restoration force (which increases the folding angle).

Accordingly, the tip of a turn-up portion contacts the inner wall of the packaging box 62. Therefore, even with a slight difference between the dimensions of the gap in the packaging box 62 and the external dimensions of the power supply plug holding member 50, the power supply plug holding member 50 is prevented from becoming unsteady in the packaging box 62 and is provided with a certain degree of stability.

[0031] Moreover, the latitudinal (the latitudinal direction is shown by y in FIG. 5(a)) length of the power supply plug holding member 50 is formed to be substantially the same as the inside height (shown by x in FIG. 8(c)) of a packaging box 62. Accordingly, when for example, packages 60 are stacked, the power supply plug holding member 50 can partly hold a load imposed on the lower package 62 across the height (the general U shape serves to apply a high proof stress across the height). Consequently, when packages 60 are stacked, the packaging box 62 is inhibited from being collapsed by the weight. Furthermore, the power supply plug holding member 50 can hold an accessory 80 such as a remote control device. The accessory 80 such as a remote control device may be simply placed on a part of the power supply plug holding member 50 which corresponds to the inside of the U shape rather than being held by the power supply plug

holding member 50 (rather than being fixed using a tape or the like). Even in this case, since the latitudinal length of the power supply plug holding member 50 is formed to be substantially the same as the inside dimension of the packaging box 62 (a space is partitioned off), the accessory 80 such as a remote control device is inhibited from contacting the recording and reproducing apparatus 61 to prevent mutual damage. This reduces total costs including a cost required to form a "power supply plug holding member 50" and an operational cost for packing. It is also possible to reduce the risk that the packaging box 62 or its content (recording and reproducing apparatus 61 and accessory 80 or the like) is damaged during transportation or storage. Further, the high strength of the package allows a larger number of packages to be stacked, resulting in a secondary effect of a reduction in transportation and storage costs.

[Embodiment 3]

[0032] FIG. 11 is a diagram schematically showing a power supply plug holding member in accordance with the present embodiment. FIG. 12 is a partly exploded plan view of a package for an electric apparatus in accordance with the present embodiment. The same reference numerals as those in Embodiment 2 are used to denote components of the present embodiment which are similar to those of Embodiment 2.

[0033] As shown in FIG. 11, a power supply plug holding member 1100 in accordance with the present embodiment is generally U shaped as shown in FIGS. 11 (b) and 11(c) by forming cut-in portions 1101 and 1102 through which the plug terminal 611a of the power supply plug 611 (or power supply plug 93) of the recording and reproducing apparatus 61, which is an electric apparatus, is inserted, in a generally rectangular corrugated fiberboard (foldable packaging material) having a latitudinal (the latitudinal direction is shown by z in FIG. 11(a)) length that is substantially the same as the inside dimension of the packaging box 62 and then folding the corrugated fiberboard at dashed lines in FIG. 11(a). Further, projecting portions 1103 are formed on a surface of the power supply plug holding member 1100 from which the plug terminal 611a of the power supply plug 611 projects. As shown in FIG. 11(c), the projecting portions 1103 are formed so that when the plug terminal 611 is inserted through the cut-in portions 1101, the projecting portions 1103 are substantially as long as or longer than the projecting plug terminal 611a.

[0034] With a package 120 for an electric apparatus in accordance with the present embodiment, the projecting portions 1103 protect the plug terminal 611a as shown in FIGS. 11(c) and 12. This more effectively prevents the terminal 611a of the power supply plug from contacting and damaging the electric apparatus (recording and reproducing apparatus 61) or packaging box 62 (or prevents the plug terminal 611a from being damaged) in spite of a swing or an impact during transportation or the

like. FIG. 13 shows that a tongue piece portion 1302 is formed by creating a cut-in portion 1301 in a part of a power supply plug holding member 1300 and folding the power supply plug holding member 1300. FIG. 13 also shows that the tongue piece portion 1302 is used to form projecting portions on the surface of the power supply plug holding member from which the plug terminal of the power supply plug projects. FIGS. 14 and 15 show an example in which a projecting portion is formed on the surface of the power supply plug holding member from which a plug terminal of a power supply plug projects; the power supply plug is of the type in which an extending direction of the plug terminal is normal to an extending direction of the power supply cord (in FIG. 14, a projecting portion 1401 is formed by folding the corrugated fiberboard, and in FIG. 15, a projecting portion is formed using a tongue piece portion 1502 formed using cut-in portions 1501). The accessory may be locked on the power supply plug holding member 1100 as in the case of Embodiment 2. Alternatively, the projecting portions shown in FIGS. 11 and 13 to 15 may be combined to allow a single type of power supply plug holding member to deal with various shapes of power supply plugs (to protect the plug terminal).

[Embodiment 4]

[0035] FIG. 16 is a diagram schematically showing a power supply plug holding member in accordance with the present embodiment. FIG. 17 is a partly exploded plan view of a package for an electric apparatus in accordance with the present embodiment. The same reference numerals as those in Embodiment 2 are used to denote components of the present embodiment which are similar to those of Embodiment 2.

[0036] As shown in FIG. 16, a power supply plug holding member 1600 in accordance with the present embodiment is generally U shaped by forming cut-in portions 1601, 1602, and 1603 through which the plug terminal 611a of the power supply plug 611 (or power supply plug 91) of the recording and reproducing apparatus 61 is inserted, in a generally rectangular corrugated fiberboard (foldable packaging material) having a latitudinal length that is substantially the same as the inside dimension of the packaging box 62 and then folding the corrugated fiberboard at a dashed line 1604 in FIG. 16(a). Two substantially parallel cut-in portions 1605 of substantially the same length are also formed in the power supply plug holding member 1600. An accessory housing portion 1610 is formed by bending a band portion 1607 sandwiched between the two cut-in portions 1605 and the outside of the two cut-in portions 1605, in different directions so as to draw out the band portion 1607 (FIG. 16(b)).

[0037] As shown in FIGS. 16(c) and 17, with the package 170 in accordance with the present embodiment, the power supply plug holding member 1600 holds and houses the accessory 80 (such as a remote control device or various connection cables) for the electric apparatus (re-

cording and reproducing apparatus 61) in the packaging box 62. Further, the power supply plug holding member 1600 itself forms the structure for holding the accessory 80. This eliminates the need for a pressure-sensitive adhesive tape or a tying band which is used to lock the accessory 80. This contributes to environmental protection and reduces costs. Further, the band portion 1607 bent so as to be drawn out exerts a restoration force to enable the appropriate holding of the accessory 80 housed in the band portion 1607. FIG. 18 shows an example in which an accessory housing portion 1810 is formed by creating one cut-in portion 1805 in a power supply plug holding member 1800 and bending portions of the power supply plug holding member 1800 located across the cut-in portion 1805 in different directions in a staggered manner (folding the power supply plug holding member 100 at a fold 1807). In FIGS. 16 and 18, the cut-in portions used to form the accessory housing portion are substantially parallel to the longitudinal direction of the power supply plug holding member. However, the present invention is not limited to this. The cut-in portions may be substantially parallel to, for example, the latitudinal direction of the power supply plug holding member (so that the remote control device or the like is held substantially parallel to the longitudinal direction of the power supply plug holding member).

[0038] In the description of the embodiments, for easy understanding, the specific example of the electric apparatus is the recording and reproducing apparatus. However, the scope of the present invention is not limited to this. As is apparent from Embodiment 1, the present invention is effectively applicable to a package for what is called a "box-shaped" electric apparatus such as a refrigerator. The present invention is also effectively applicable to a package for what is called a "thin" electric apparatus such as a notebook personal computer. Specific examples of the "electric apparatus" include for example, a television, a VTR, a DVD recording and reproducing apparatus, an HDD reproducing/recording apparatus, a radio, a record player, a cassette deck, a home theater system, an audio component system, an AV amplifier, an MD recording/reproducing apparatus, a laser disc player, a microwave oven, an oven range, a toaster, an IH cooking heater, an iron, an air conditioner, a fan heater, an electric blanket, an electric fan, a refrigerator, a washing machine, a futon dryer, a clothes dryer, a dehumidifier, a humidifier, a toilet seat with a washlet, a ventilation system, a personal computer, a telephone, a cleaner, a game machine, and a projector. The present invention is effectively applicable to packages for electric apparatuses such as those listed above which comprise a power supply plug.

[0039] Claim 1 of the present invention sets forth a package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being characterized by comprising a power supply plug holding member constructed by folding a foldable packing material

such as a corrugated fiberboard at one position into a general L-shape and forming a cut-in portion or a notch in one or both of two surfaces formed across the fold, a plug terminal of the power supply plug being inserted through the cut-in portion or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material. According to this configuration, the "power supply plug holding member" can be formed simply by forming, in the corrugated fiberboard or the like, the cut-in portion or notch through which the plug terminal of the power supply plug is inserted and then folding the corrugated fiberboard into two (Actually, the "cut-in portion or notch" can be formed during a pressing step of cutting the corrugated fiberboard. The only required operation is "folding"). Consequently, the "power supply plug holding member" can be formed inexpensively and easily. The power supply plug (power supply cord) can be locked in the "power supply plug holding member" simply by inserting the plug terminal into the cut-in portion or notch. Then, the power supply plug holding member holding the power supply plug is housed in the packaging box to hold the power supply plug (power supply cord) in the packaging box. Consequently, the required operation is clear and simple. This reduces total costs including a cost required to form the "power supply plug holding member" and an operational cost for packing.

[0040] Claim 2 of the present invention sets forth a package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being characterized by comprising a power supply plug holding member constructed by folding a foldable packing material such as a corrugated fiberboard at two positions into a general U shape and forming a cut-in portion or a notch in one or more of three surfaces formed across the folds, a plug terminal of the power supply plug being inserted through the cut-in portion or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material. According to this configuration, the "power supply plug holding member" is substantially U-shaped. Consequently, the power supply plug (power supply cord) can be held so as to be sandwiched between three planes. This enables the "power supply plug holding member" to exert a stronger force to hold the power supply plug and to separate the power supply plug (power supply cord) from the electric apparatus. Therefore, the

electric apparatus (or power supply cord) can be protected.

[0041] Claim 3 of the present invention sets forth the package for the electric apparatus according to Claim 1 or 2, characterized in that when the power supply plug is locked in the power supply plug holding member, the plug terminal of the power supply plug is inserted through the cut-in portion or notch so that the power supply plug is held at an inside position in a direction in which the power supply plug holding member is folded, and the power supply plug holding member holding the power supply plug is accommodated in the gap portion between the electric apparatus and the packaging box so as to prevent the plug terminal of the power supply plug from projecting toward the electric apparatus. With this arrangement, the power supply plug holding member is housed in the gap portion between the electric apparatus and the packaging box so as to prevent the plug terminal of the power supply plug from projecting toward the electric apparatus. This prevents the plug terminal from contacting the plug terminal. Therefore, the terminal of the power supply plug is prevented from contacting and damaging the electric apparatus in spite of a swing or an impact during transportation or the like.

[0042] Claim 4 of the present invention sets forth the package for the electric apparatus according to any of Claims 1 to 3, characterized by comprising a projecting portion that is substantially as long as or longer than the plug terminal of the power supply plug projected from the cut-in portion or notch in the power supply plug holding member by inserting the plug terminal through the cut-in portion or notch, the projecting portion being formed on a surface of the power supply plug holding member from which the plug terminal projects, by folding the power supply plug holding member or using a tongue piece portion formed by creating a cut-in portion in a part of the power supply plug holding member. With this arrangement, the projecting portion is formed on the surface from which the plug terminal projects; the projecting portion is substantially as long as or longer than the projected plug terminal. This inhibits the plug terminal from contacting the electric apparatus or packaging box. Therefore, the terminal of the power supply plug is prevented from contacting and damaging the electric apparatus in spite of a swing or an impact during transportation or the like.

[0043] Claim 6 of the present invention sets forth the package for the electric apparatus according to any of Claims 1 to 4, characterized in that an accessory housing portion is formed in the power supply plug holding member by creating two substantially parallel cut-in portions of substantially the same length in the power supply plug holding member and bending a band portion sandwiched between the two cut-in portions and an outside portion of the two cut-in portions in different directions so as to draw out the band portion, or creating one cut-in portion in the power supply plug holding member and bending portions located across the cut-in portion in different directions in a staggered manner, and an accessory for

the electric apparatus such as a remote control device is housed in the accessory housing portion, while the power supply plug holding member is housed in the gap portion between the electric apparatus and the packaging box. With this configuration, the power supply plug holding member holds and houses the accessory for the electric apparatus such as a remote control device in the packaging box. The power supply plug holding member itself forms the structure for holding the accessory. This eliminates the need for a pressure-sensitive adhesive tape or a tying band used to lock the accessory such as a remote control device. Therefore, costs can be reduced.

[0044] Claim 7 of the present invention sets forth the package for the electric apparatus according to any of Claims 1 to 6, characterized in that the power supply plug holding member is formed by folding a foldable packaging material such as a generally rectangular corrugated fiberboard, and the dimensions of one or more sides of an external shape of the power supply plug holding member are substantially the same as or slightly smaller than those of one or more sides of the gap portion between the electric apparatus and the packaging box. With this arrangement, the dimensions of one or more sides of the external shape of the power supply plug holding member are substantially the same as or slightly smaller than those of one or more sides of the gap portion between the electric apparatus and the packaging box. Accordingly, the power supply plug holding member can be positioned relative to the packaging box. This prevents the power supply plug holding member from becoming unsteady in the packaging box during transportation or the like. Moreover, an external load imposed on the packaging box can be partly held by the power supply plug holding member. Consequently, if for example, packaging boxes containing products are stacked for storage, the boxes are prevented from being collapsed. Since the "power supply plug holding member" is L-shaped or U-shaped, this effect is significant along the directions of folds used to form the L or U shape.

[0045] Claim 8 of the present invention sets forth the package for the electric apparatus according to any of Claims 1 to 7, characterized in that a plurality of cut-in portions or notches through which the plug terminal of the power supply plug is inserted are formed on the basis of a shape of the terminal of the power supply plug in accordance with a certain specification, or one or more fitting holes are formed into which a grip portion of the power supply plug is fitted. With this arrangement, even if for example, the shape of the grip portion of the plug terminal or power supply plug varies depending on its destination, this can be dealt with using a single type of "power supply plug holding member" by forming the notch or fitting hole corresponding to each shape. The single component is thus shared to reduce costs.

Claims

1. A package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being **characterized by** comprising a power supply plug holding member constructed by folding a foldable packing material such as a corrugated fiberboard at one position into a general L-shape and forming a cut-in or a notch in one or both of two surfaces formed across the fold, a plug terminal of the power supply plug being inserted through the cut-in or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material.
2. A package for an electric apparatus in which the electric apparatus protected by a cushioning material is accommodated in a packaging box, the package being **characterized by** comprising a power supply plug holding member constructed by folding a foldable packing material such as a corrugated fiberboard at two positions into a general U shape and forming a cut-in portion or a notch in one or more of three surfaces formed across the folds, a plug terminal of the power supply plug being inserted through the cut-in portion or notch, and in that the plug terminal of the power supply plug is inserted through the cut-in portion or notch to allow the power supply plug holding member to hold the power supply plug of the electric apparatus, and the power supply plug holding member holding the power supply plug is housed in a gap portion formed between the electric apparatus and the packaging box by the presence of the cushioning material.
3. The package for the electric apparatus according to Claim 1 or 2, **characterized in that** when the power supply plug is locked in the power supply plug holding member, the plug terminal of the power supply plug is inserted through the cut-in portion or notch so that the power supply plug is held at an inside position in a direction in which the power supply plug holding member is folded, and the power supply plug holding member holding the power supply plug is accommodated in the gap portion between the electric apparatus and the packaging box so as to prevent the plug terminal of the power supply plug from projecting toward the electric apparatus.
4. The package for the electric apparatus according to any of Claims 1 to 3, **characterized by** comprising

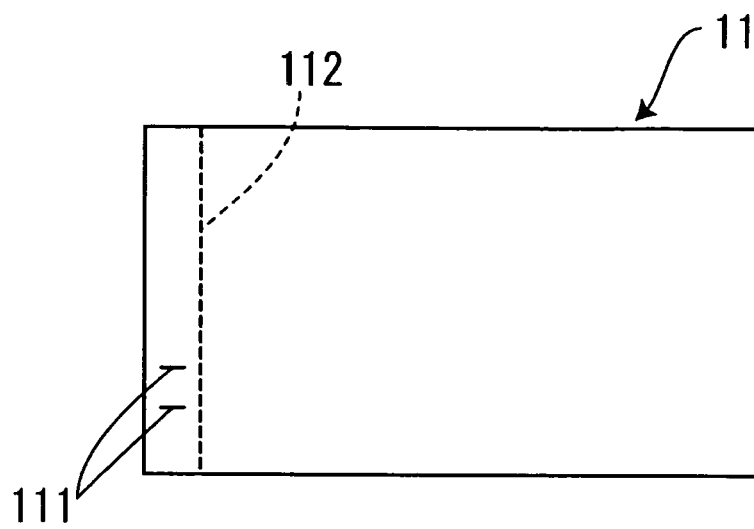
a projecting portion that is substantially as long as or longer than the plug terminal of the power supply plug projected from the cut-in portion or notch in the power supply plug holding member by inserting the plug terminal through the cut-in portion or notch, the projecting portion being formed on a surface of the power supply plug holding member from which the plug terminal projects, by folding the power supply plug holding member or using a tongue piece portion formed by creating a cut-in portion in a part of the power supply plug holding member.

5. The package for the electric apparatus according to any of Claims 1 to 4, **characterized in that** an accessory for the electric apparatus such as a remote control device is locked on the power supply plug holding member using a pressure-sensitive adhesive tape or a tying band to house the power supply plug holding member in the gap portion between the electric apparatus and the packaging box.
6. The package for the electric apparatus according to any of Claims 1 to 4, **characterized in that** an accessory housing portion is formed in the power supply plug holding member by creating two substantially parallel cut-in portions of substantially the same length in the power supply plug holding member and bending a band portion sandwiched between the two cut-in portions and an outside portion of the two cut-in portions in different directions so as to draw out the band portion, or creating one cut-in portion in the power supply plug holding member and bending portions located across the cut-in portion in different directions in a staggered manner, and an accessory for the electric apparatus such as a remote control device is housed in the accessory housing portion, while the power supply plug holding member is housed in the gap portion between the electric apparatus and the packaging box.
7. The package for the electric apparatus according to any of Claims 1 to 6, **characterized in that** the power supply plug holding member is formed by folding a foldable packaging material such as a generally rectangular corrugated fiberboard, and the dimensions of one or more sides of an external shape of the power supply plug holding member are substantially the same as or slightly smaller than those of one or more sides of the gap portion between the electric apparatus and the packaging box.
8. The package for the electric apparatus according to any of Claims 1 to 7, **characterized in that** a plurality of cut-in portions or notches through which the plug terminal of the power supply plug is inserted are formed on the basis of a shape of the terminal of the power supply plug in accordance with a certain specification, or one or more fitting holes are formed into

which a grip portion of the power supply plug is fitted.

FIG. 1

(a)



(b)

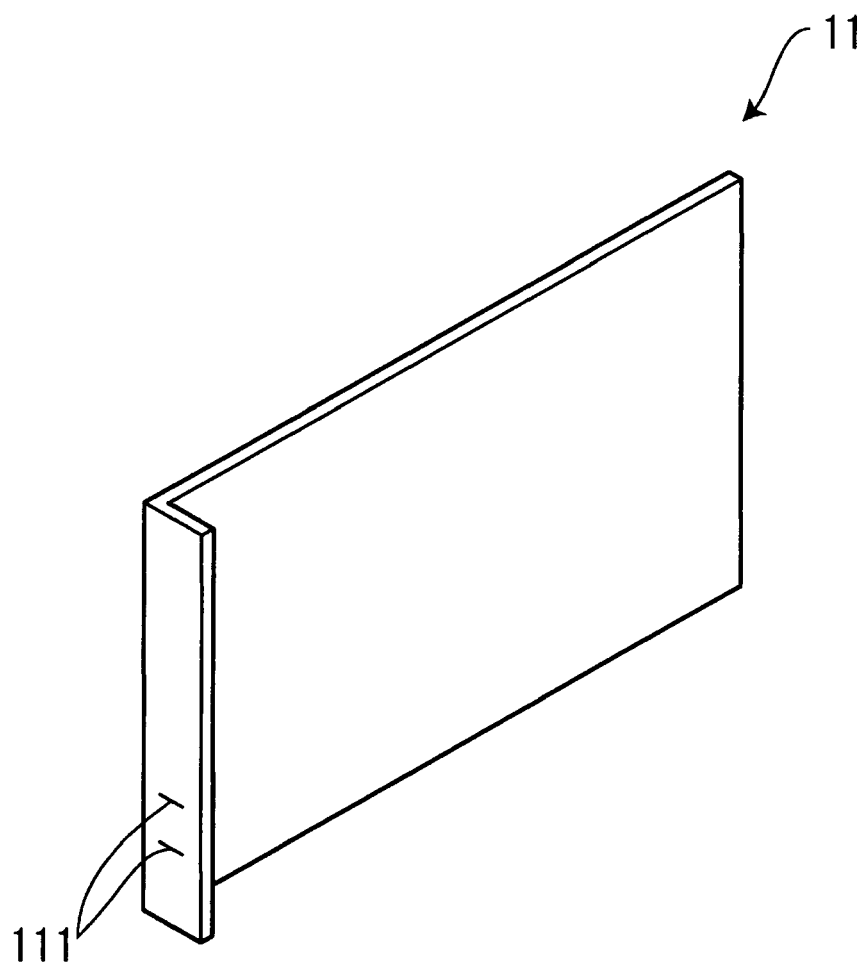


FIG. 2

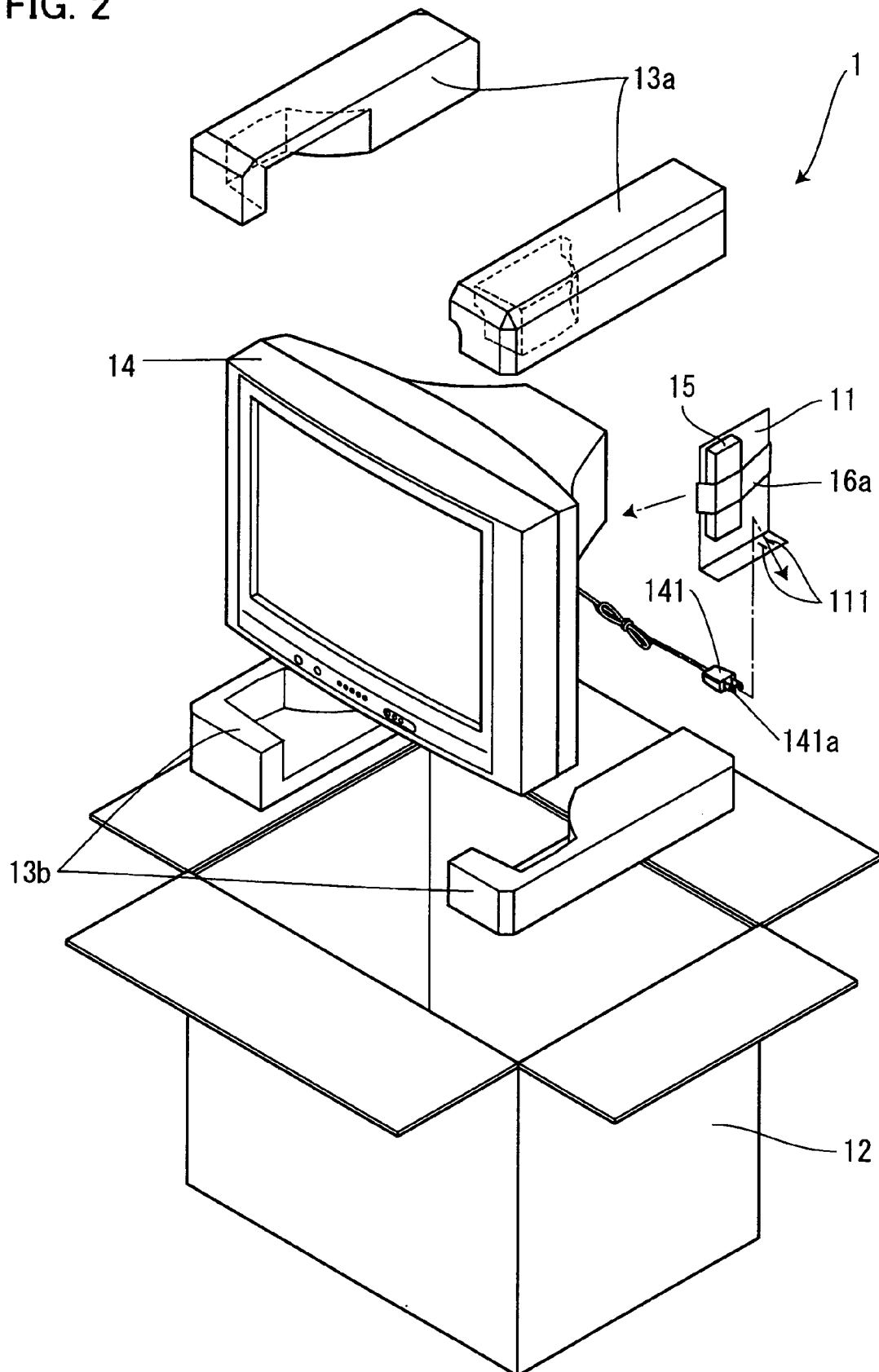


FIG. 3

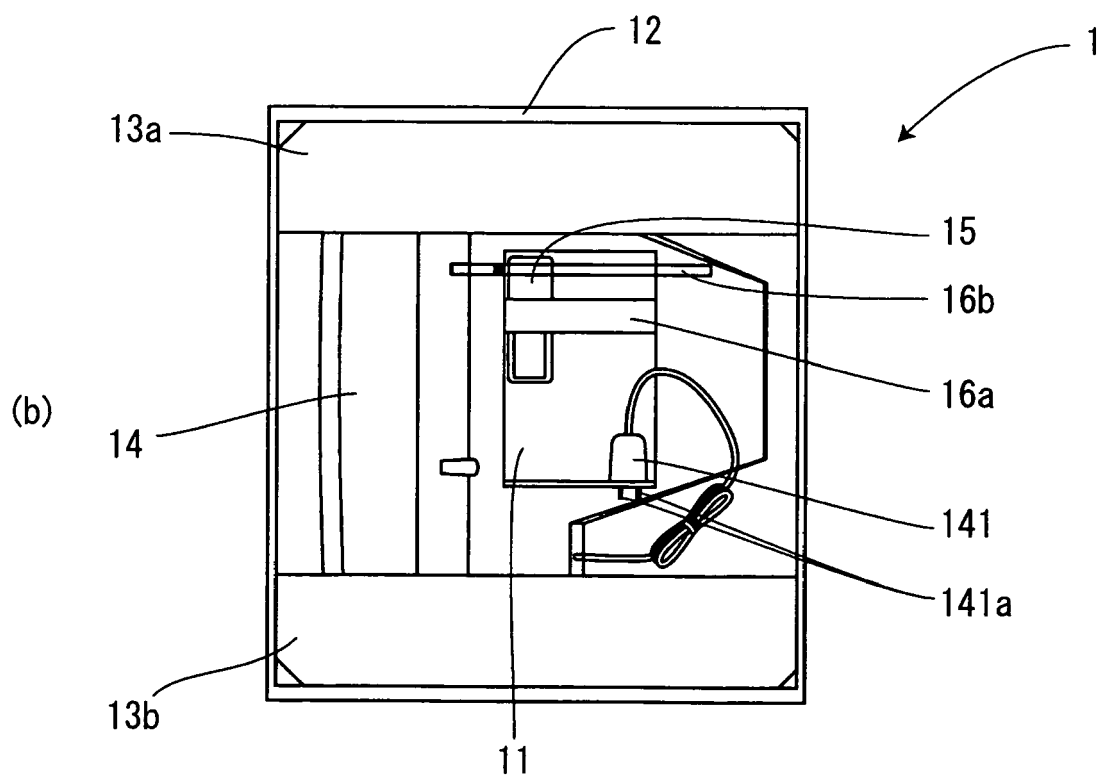
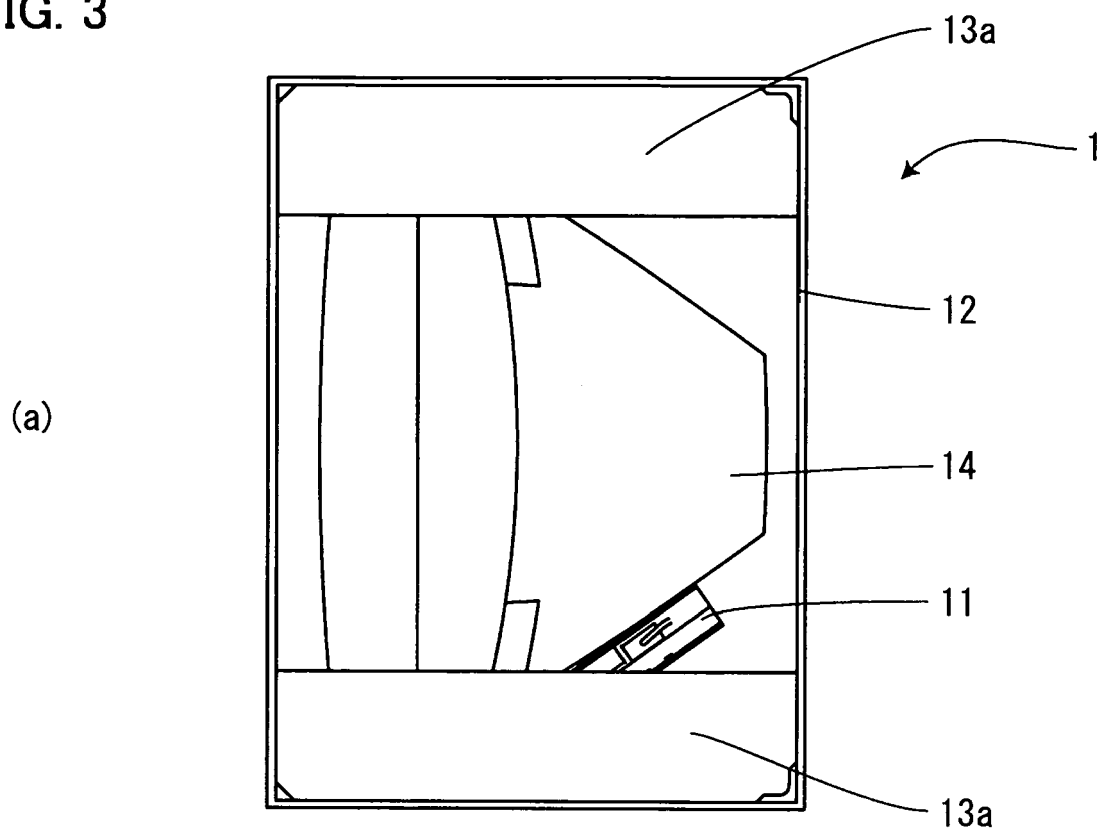


FIG. 4

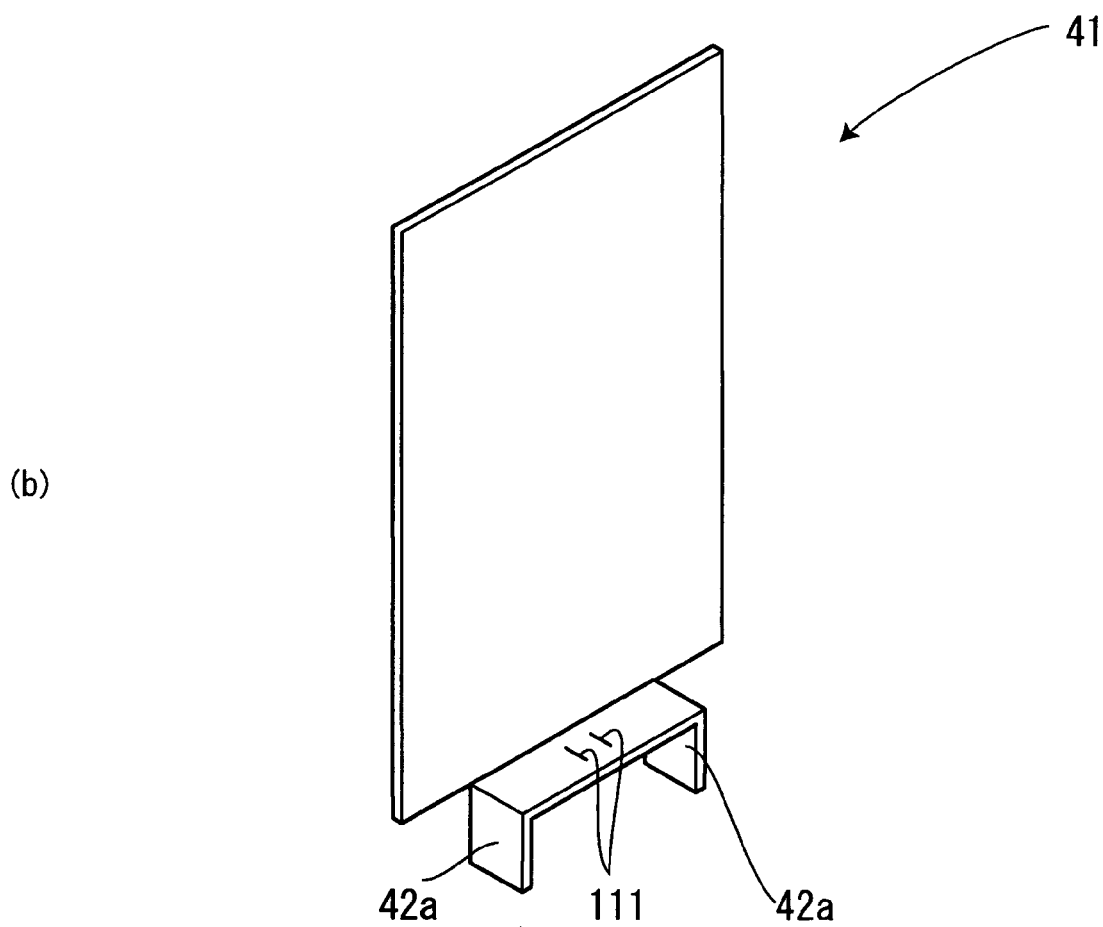
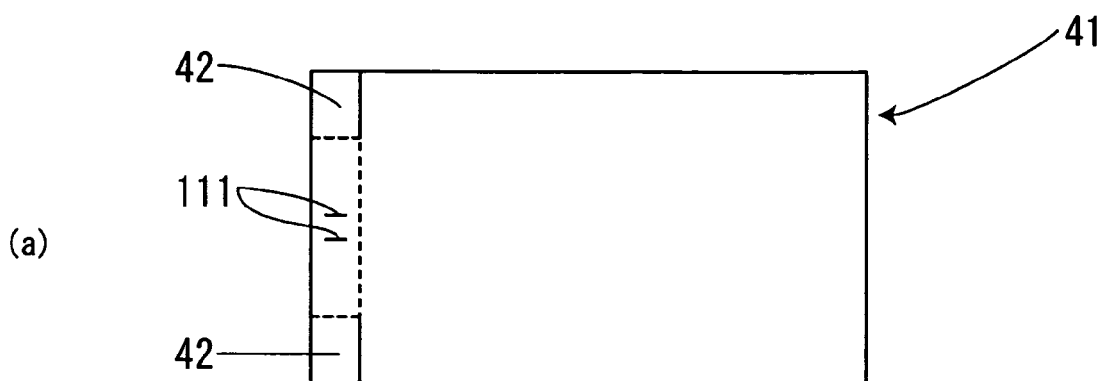


FIG. 5

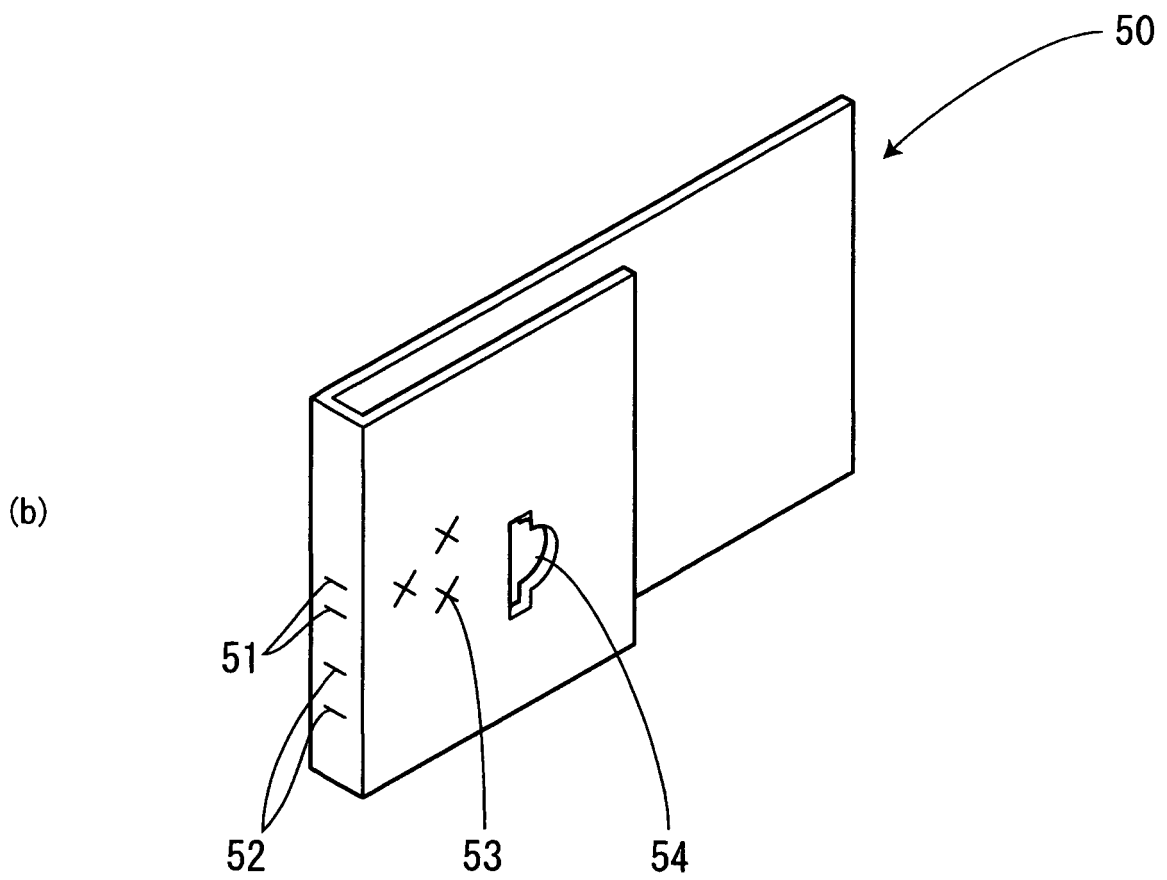
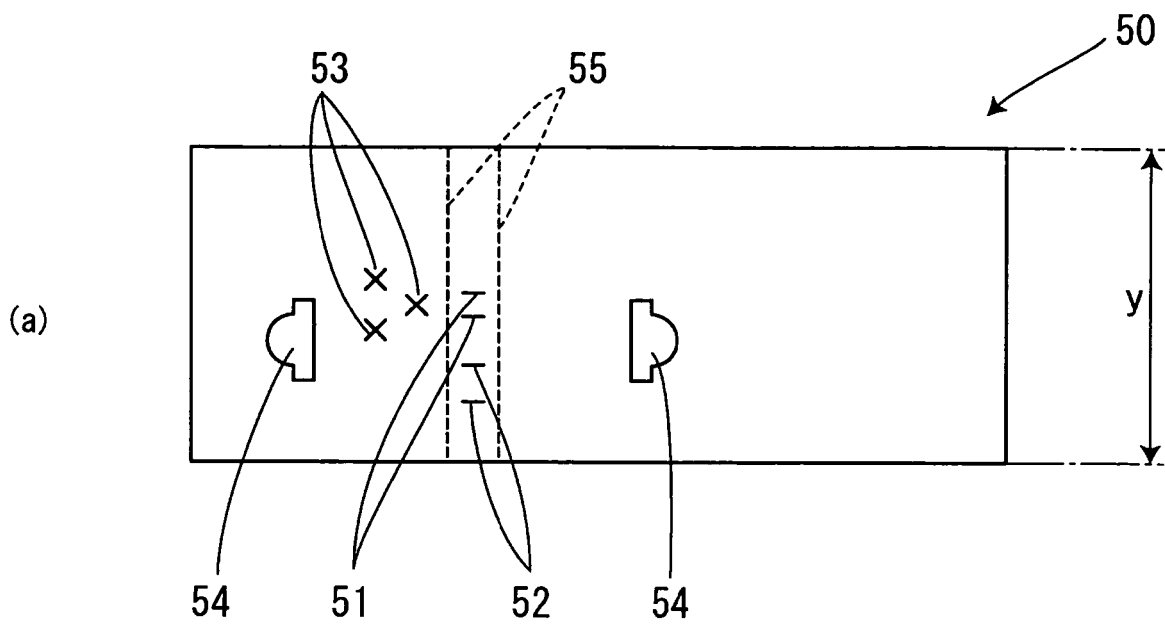


FIG. 6

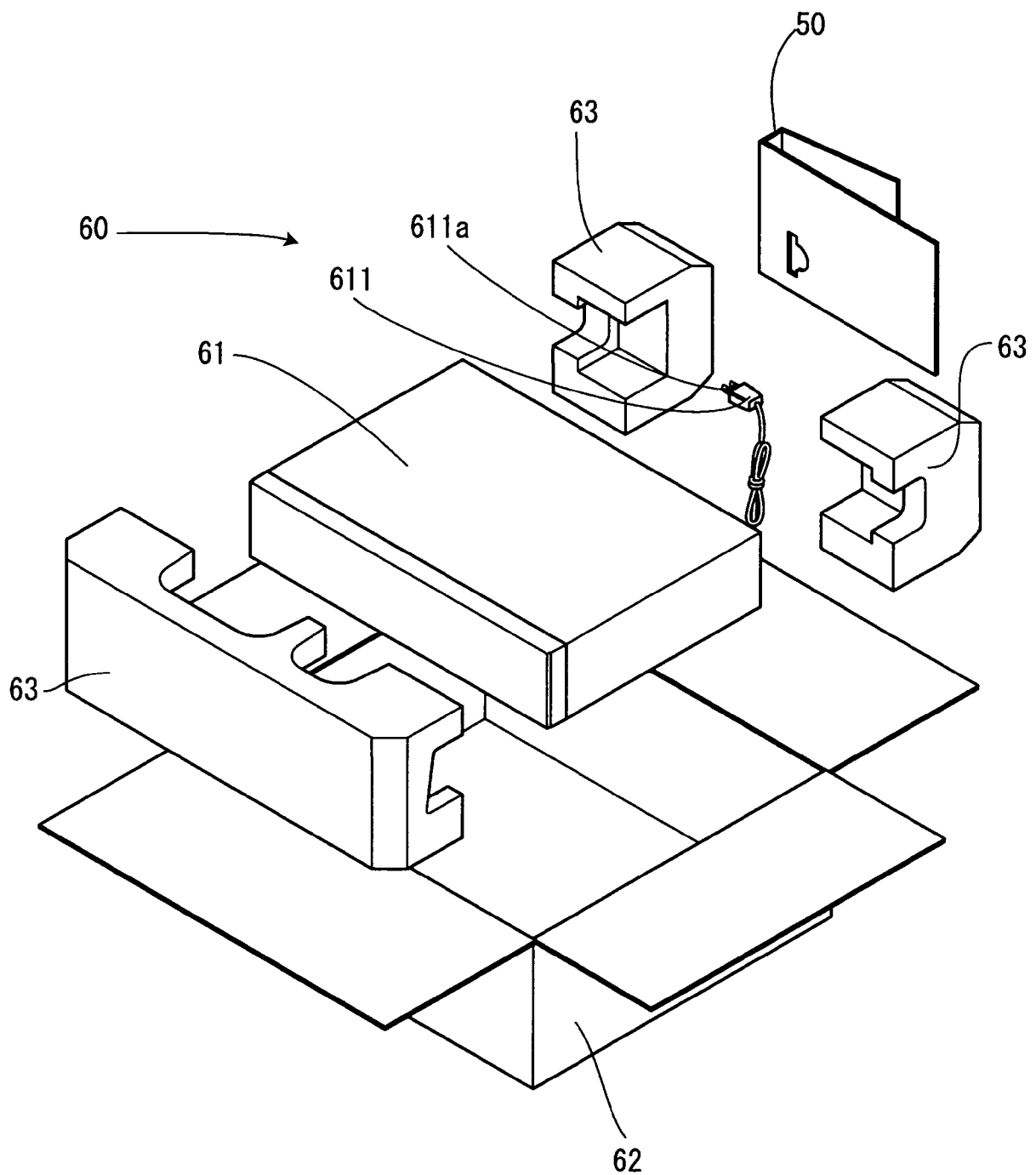


FIG. 7

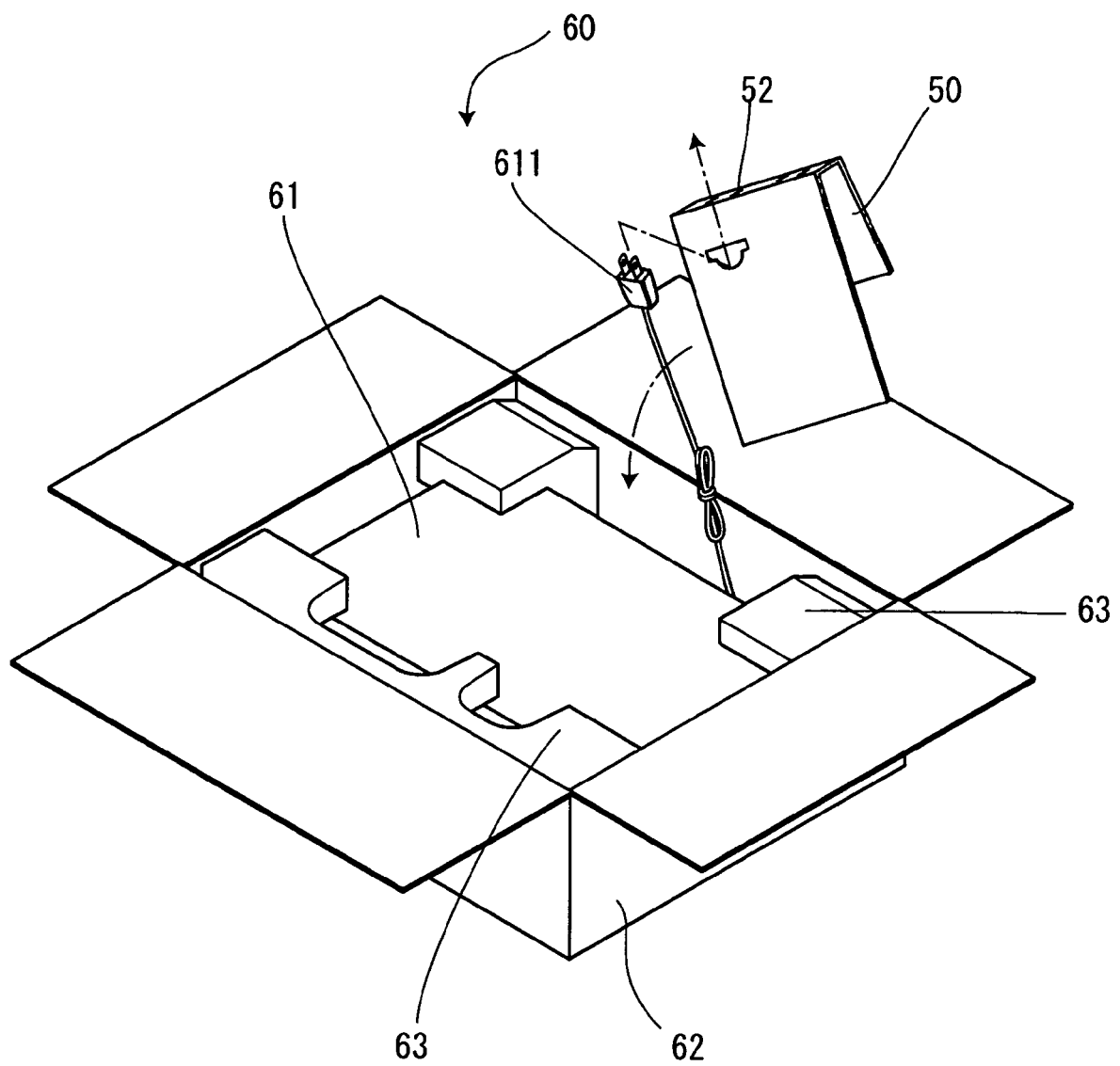


FIG. 8

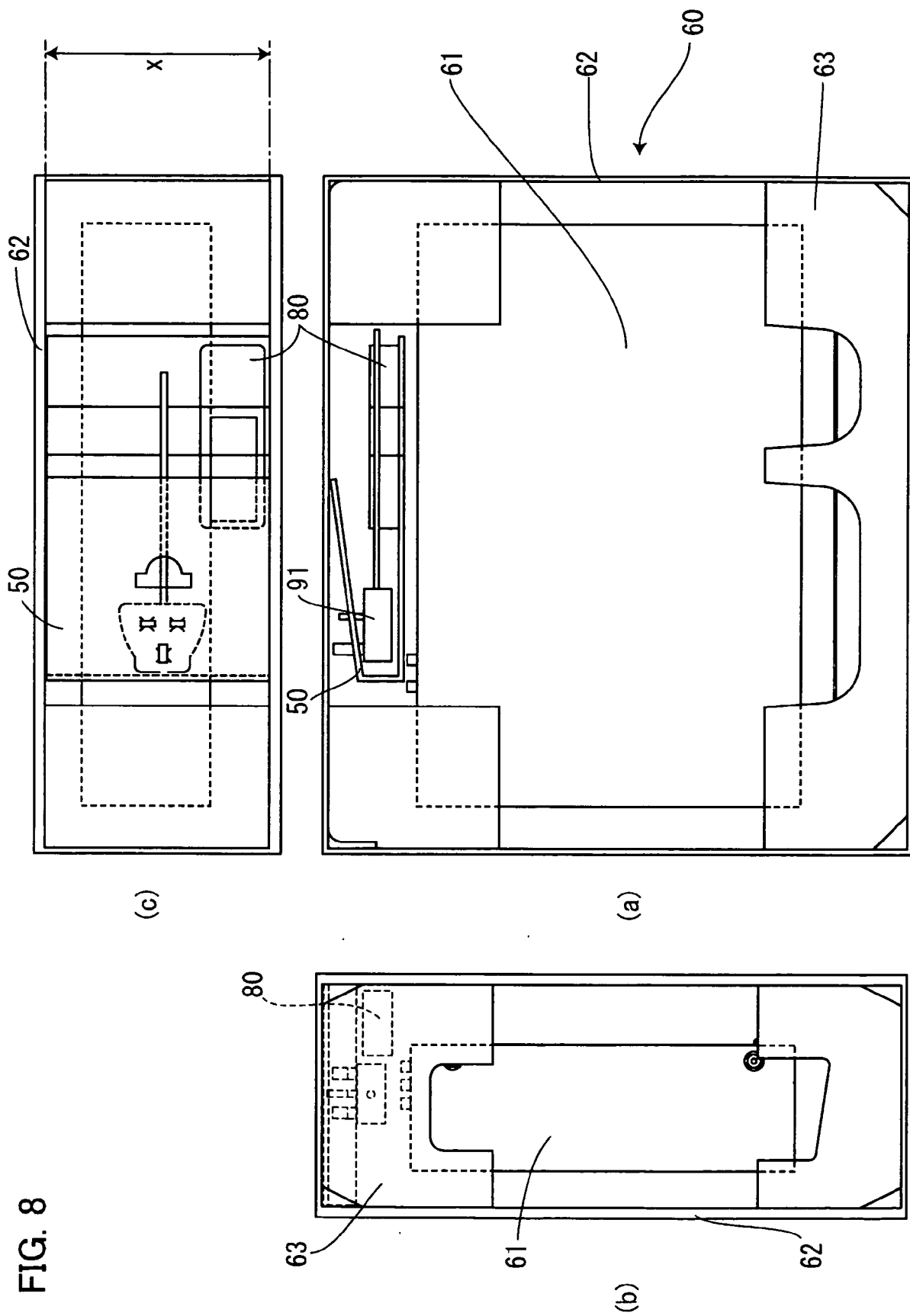


FIG. 9

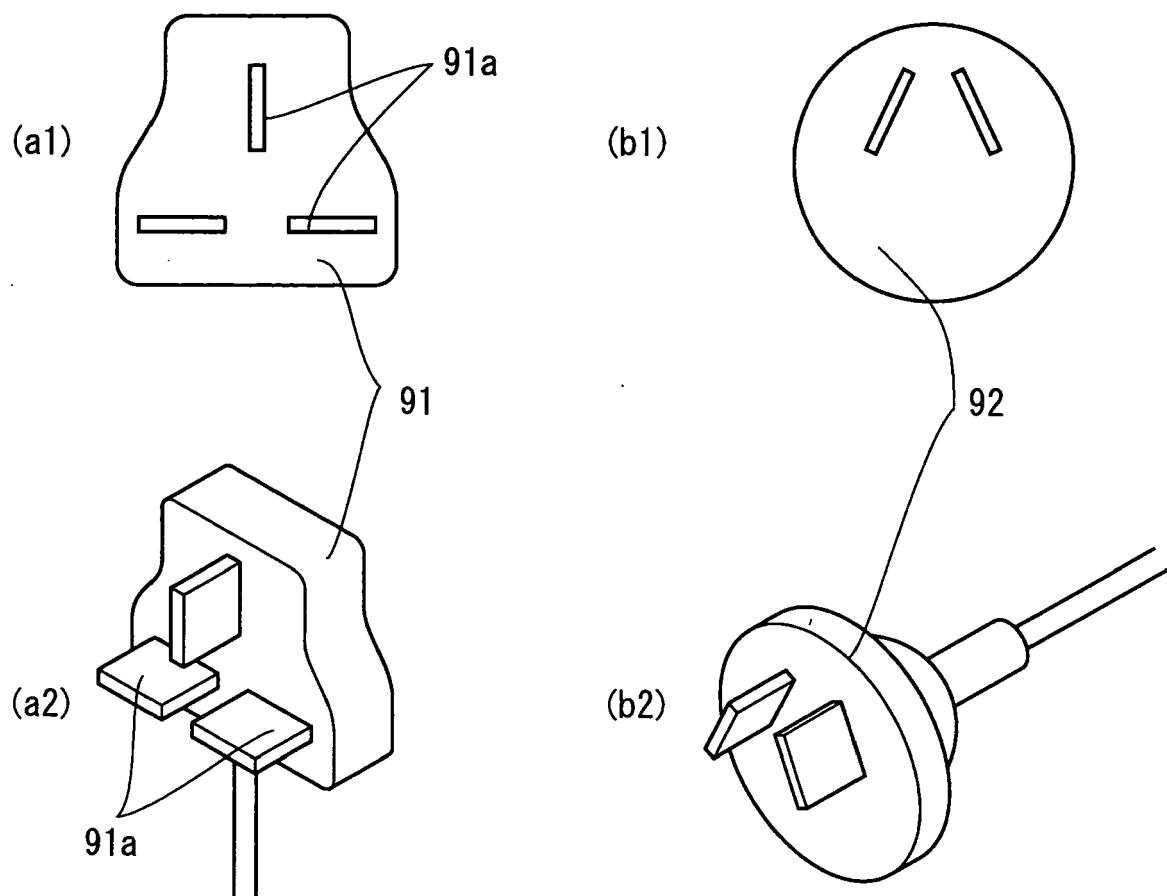


FIG. 10

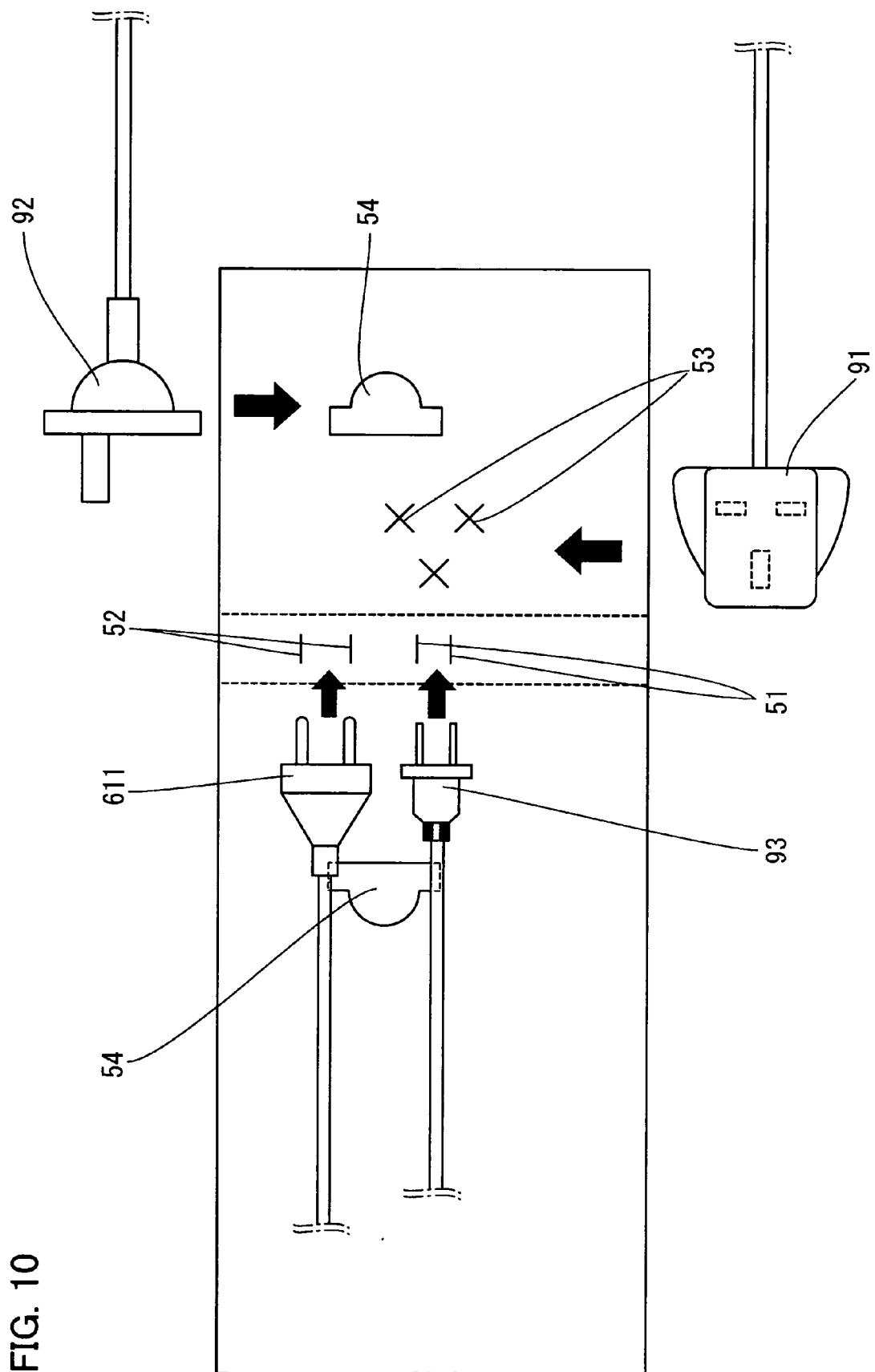


FIG. 11

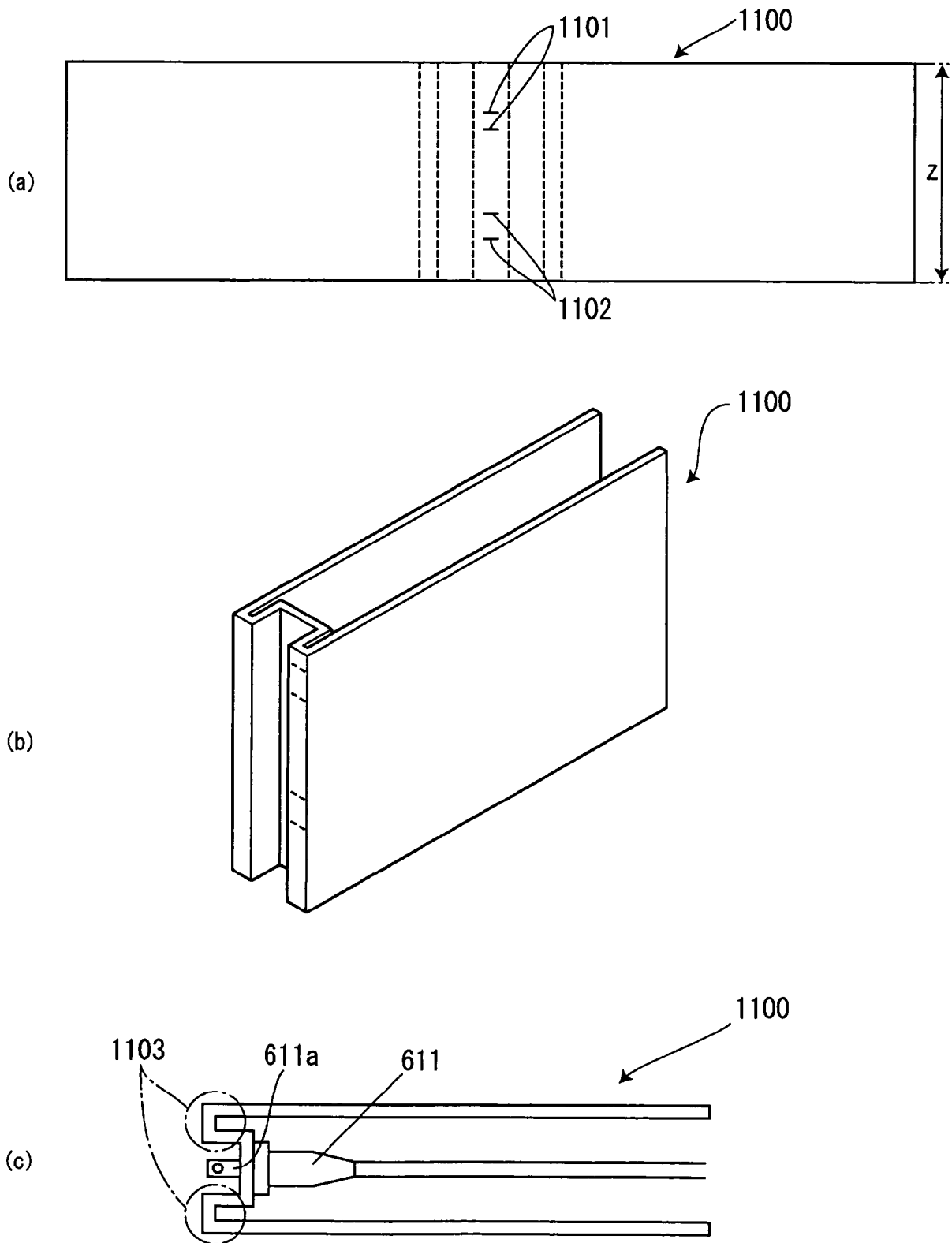


FIG. 12

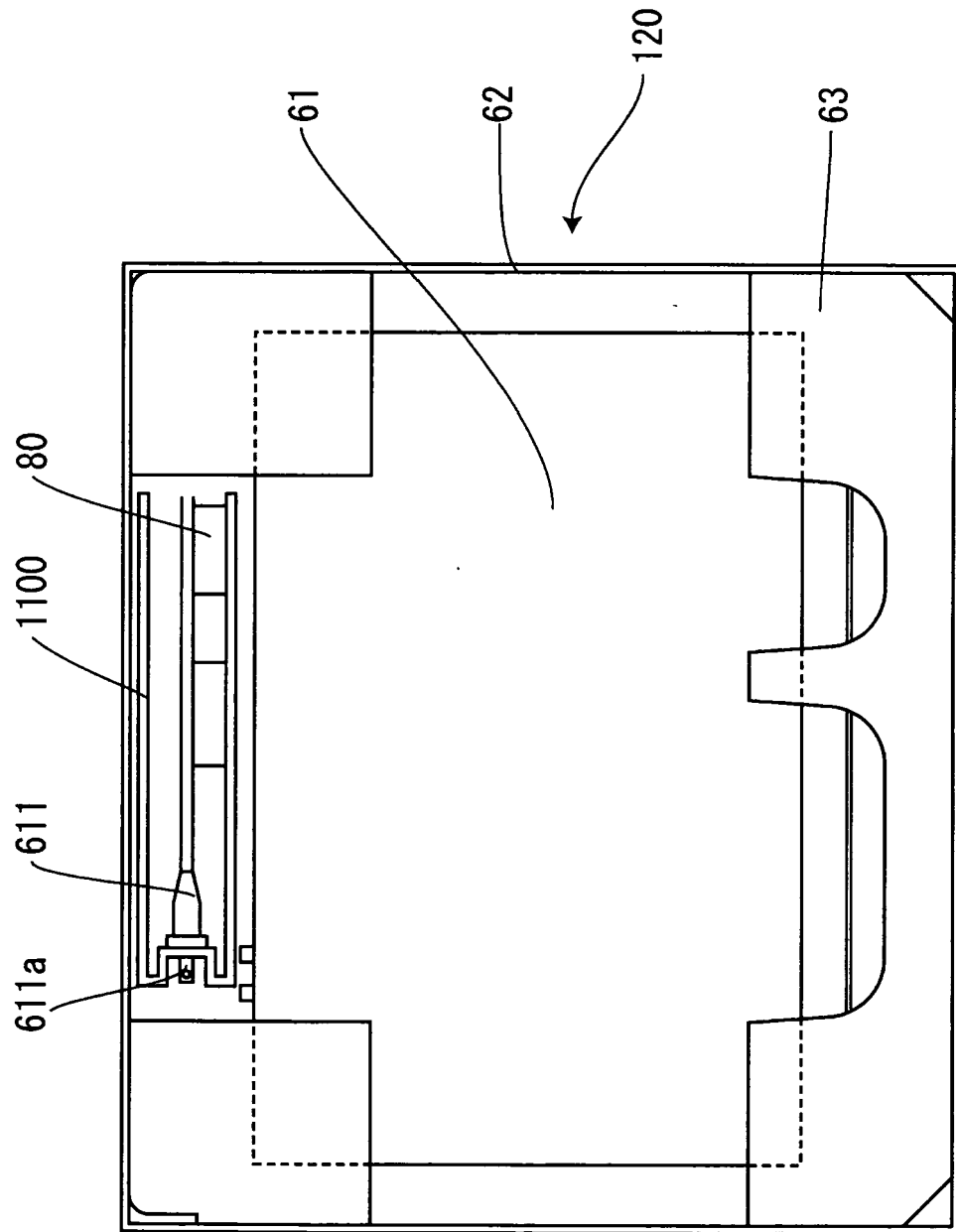


FIG. 13

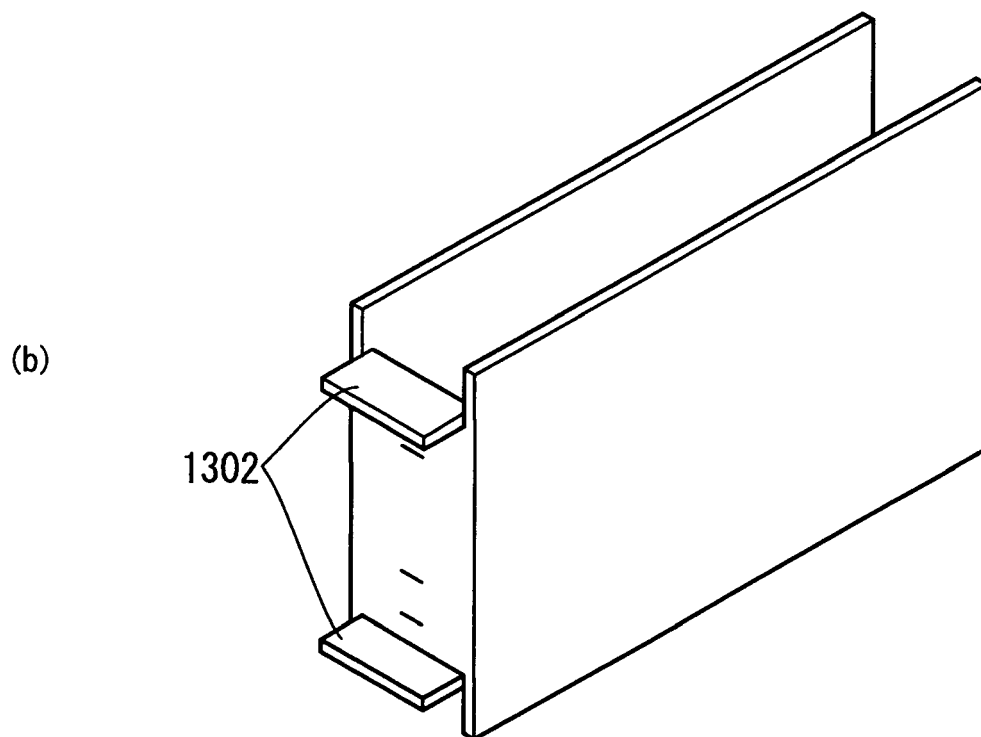
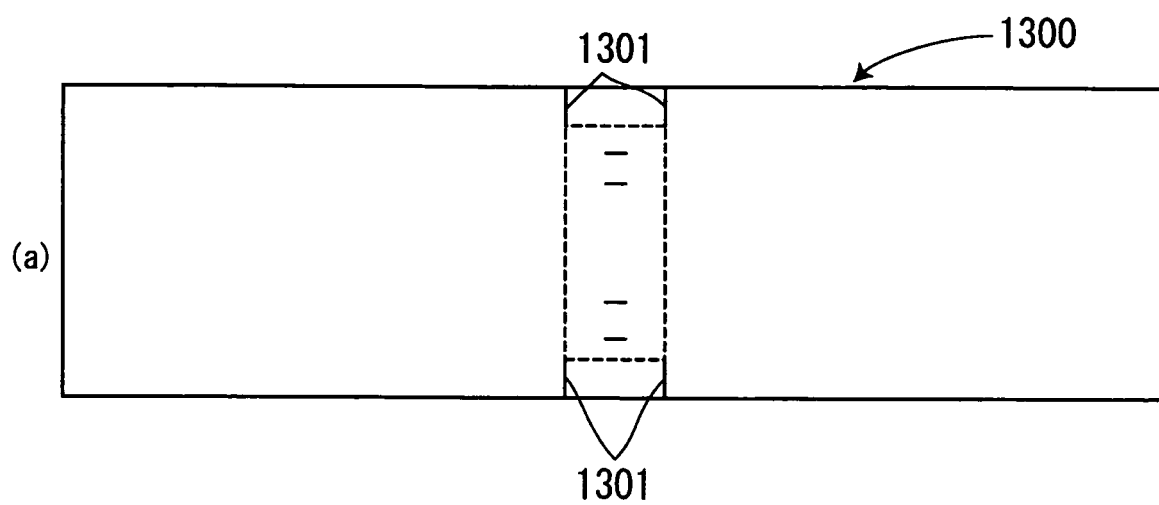


FIG. 14

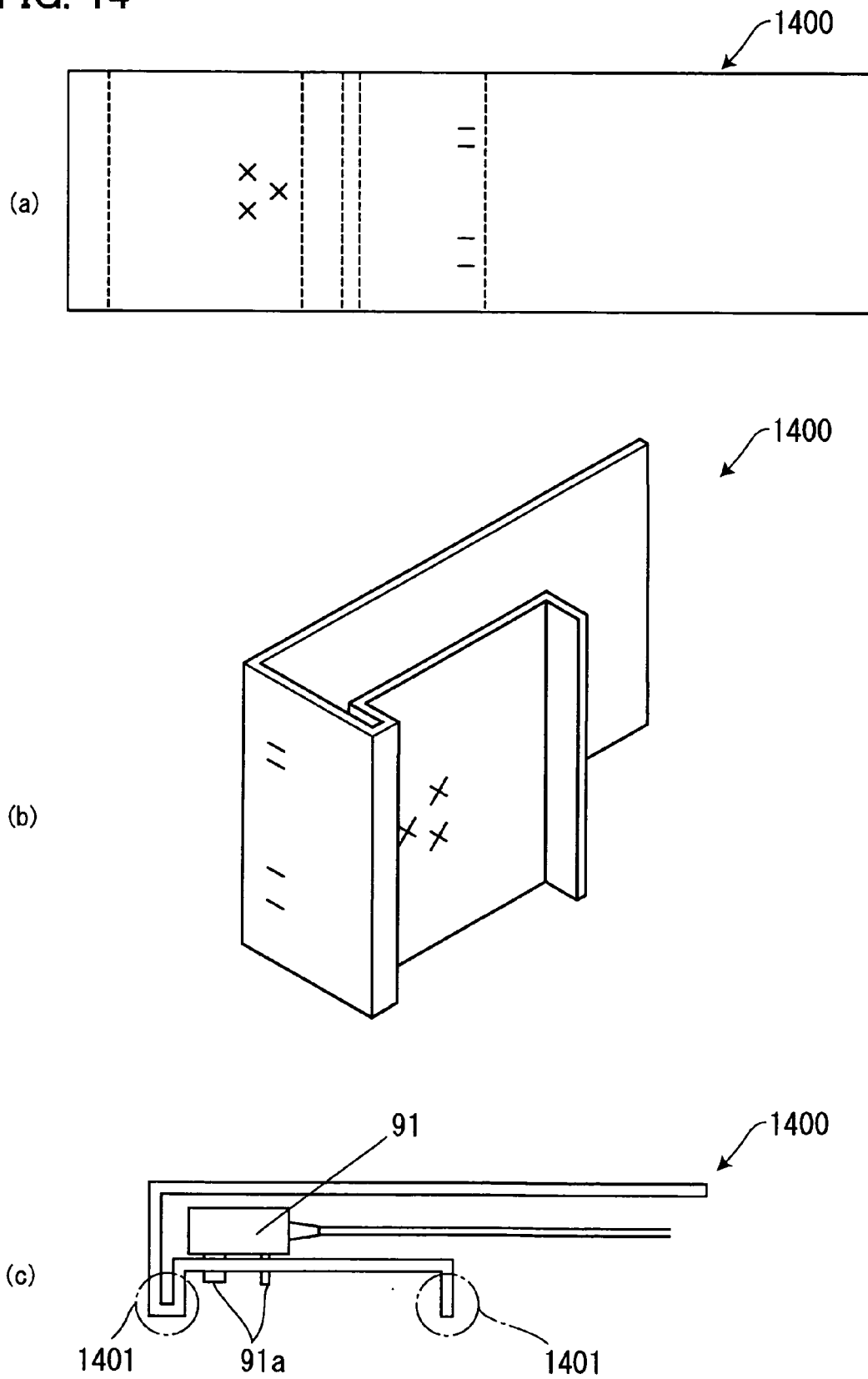


FIG. 15

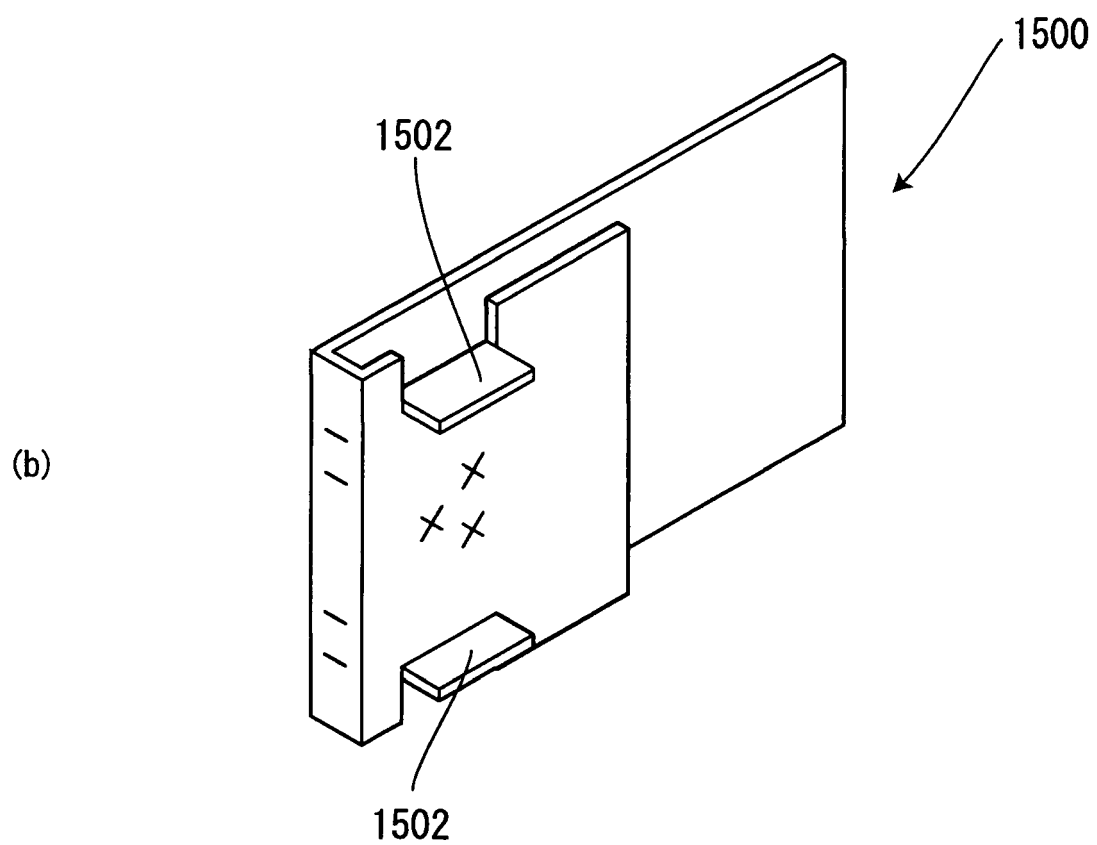
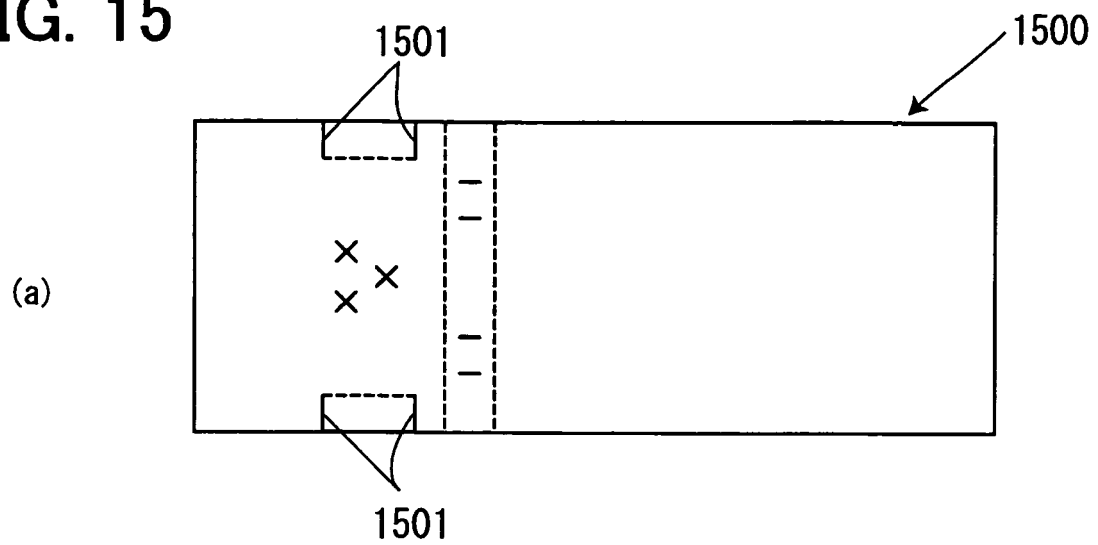


FIG. 16

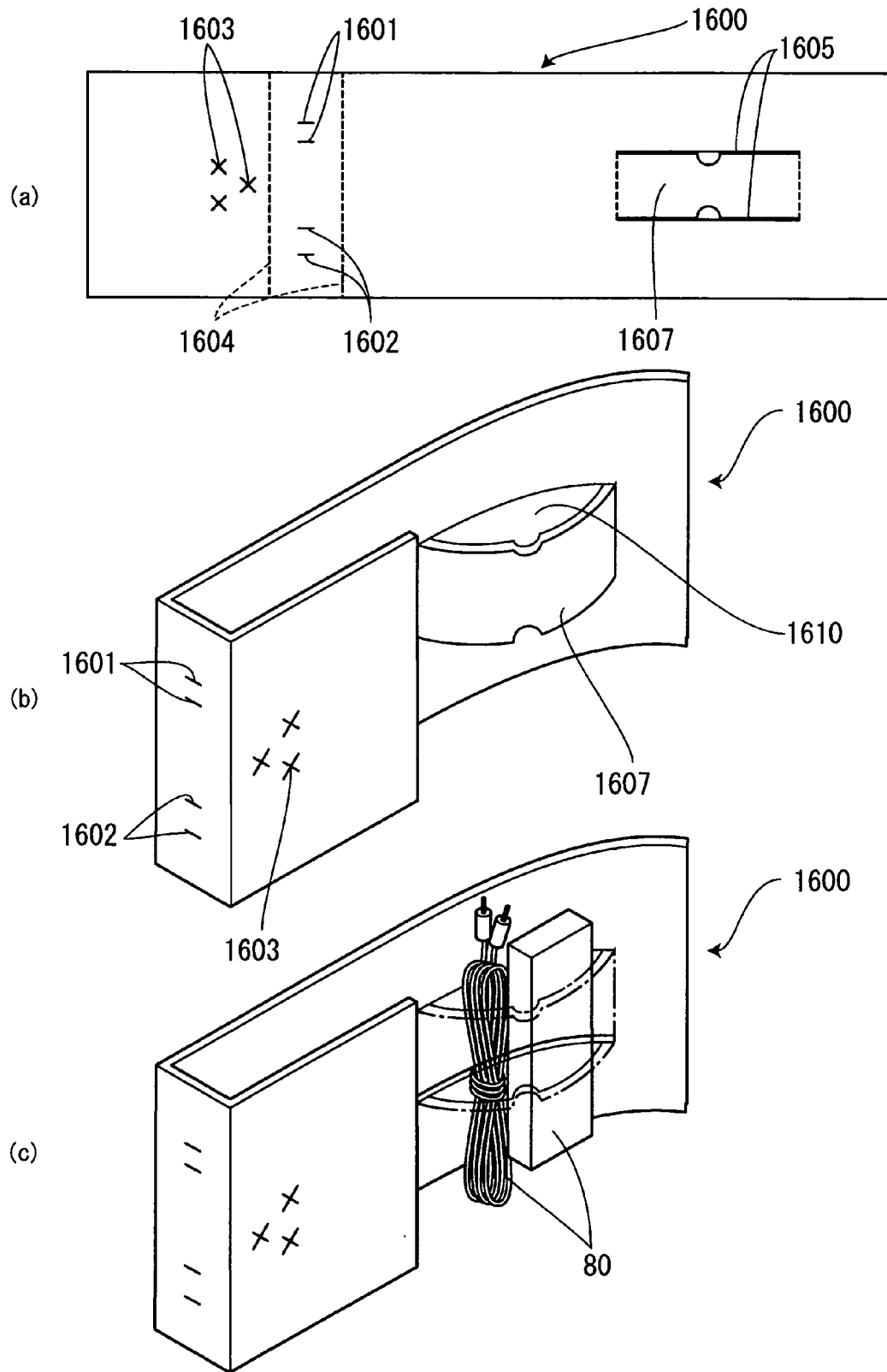


FIG. 17

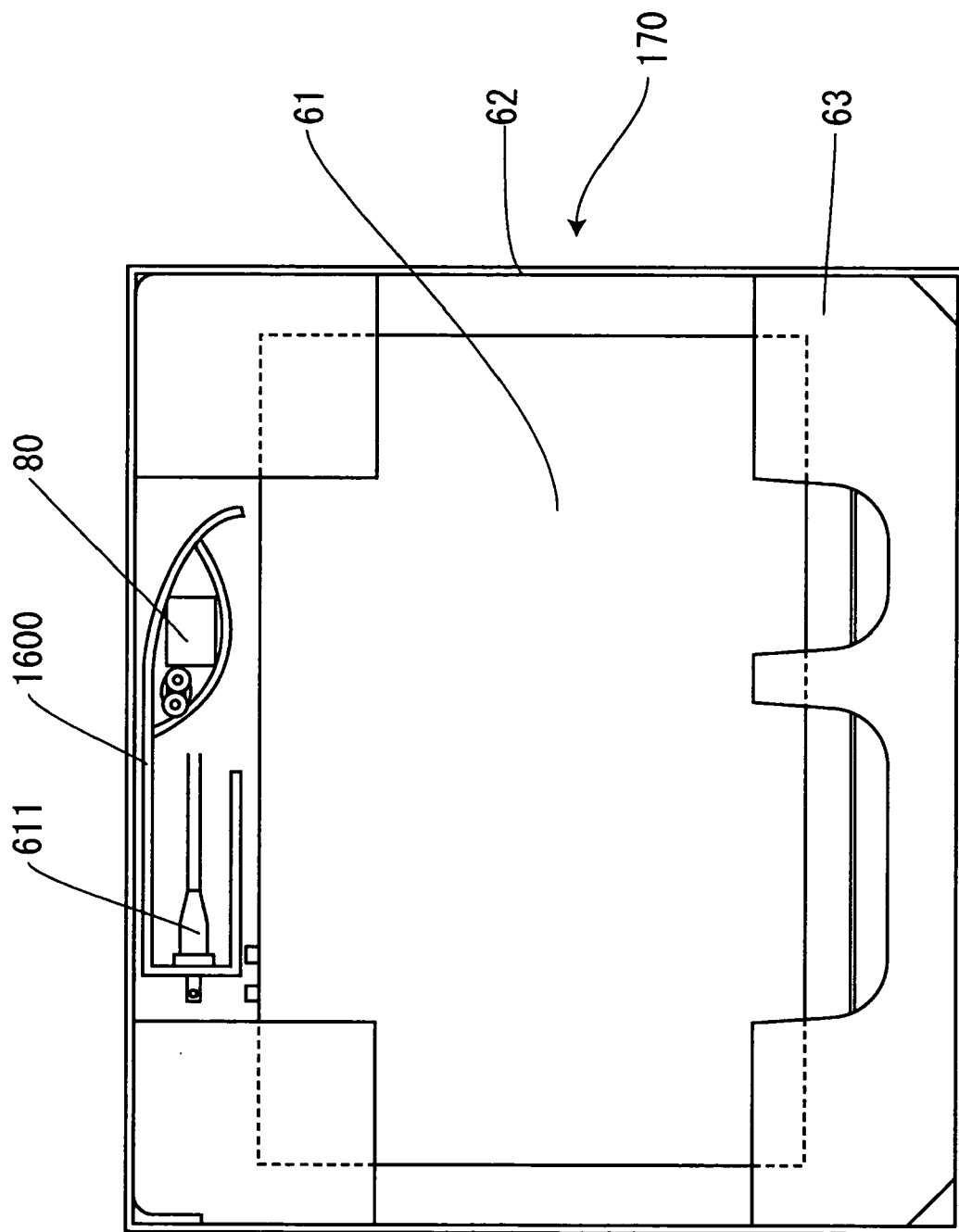
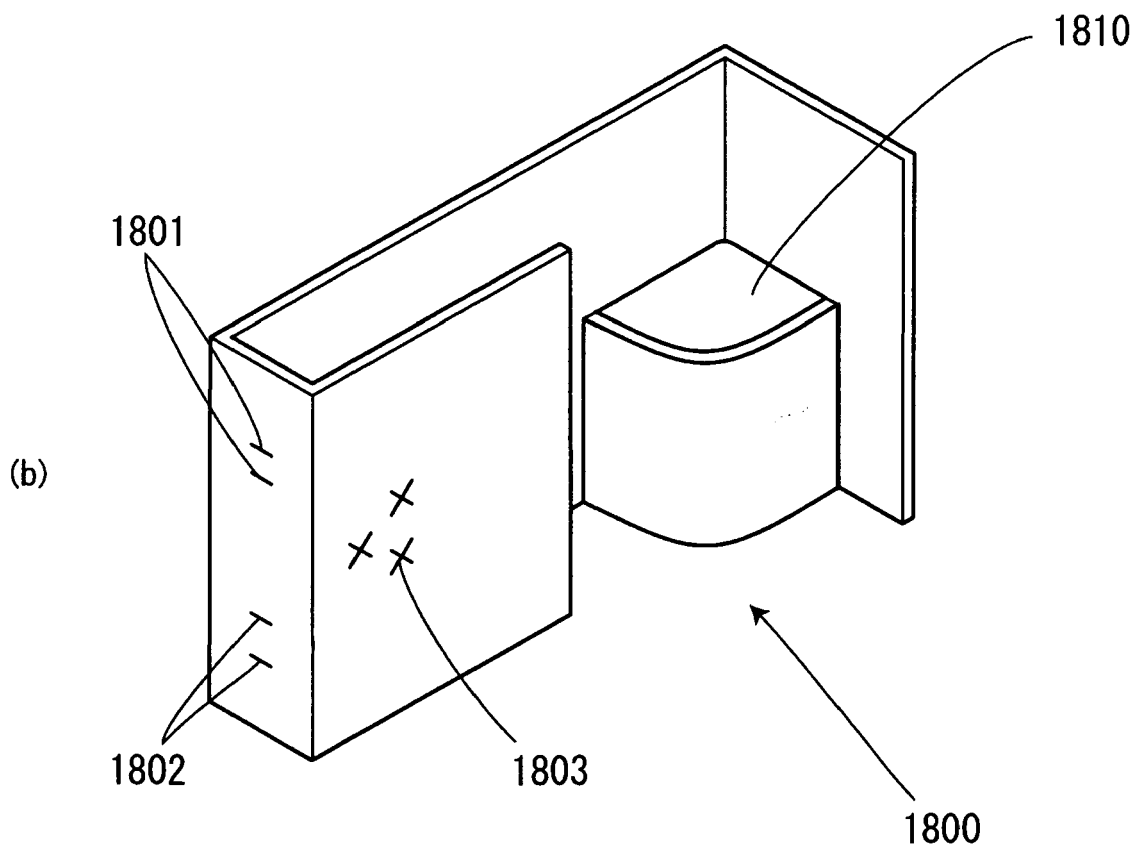
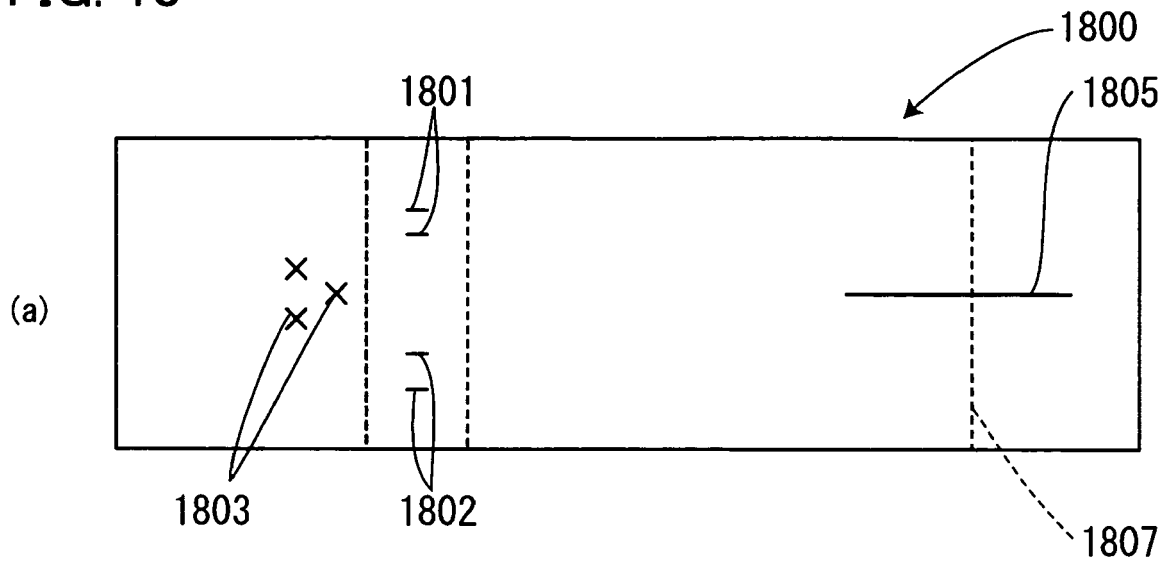


FIG. 18





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 25 7306

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 03, 3 April 2002 (2002-04-03) -& JP 2001 315759 A (HITACHI HOMETEC LTD), 13 November 2001 (2001-11-13) * abstract; figures 1-4 *	1,3,7,8	INV. B65D81/107
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 07, 3 July 2002 (2002-07-03) -& JP 2002 080027 A (HITACHI LTD), 19 March 2002 (2002-03-19) * abstract *	2	
A	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 12, 5 December 2003 (2003-12-05) -& JP 2003 237820 A (RINNAI CORP; SANKO CO LTD), 27 August 2003 (2003-08-27) * abstract; figures 2,3 *	5,6	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 April 2006	Examiner Bevilacqua, V
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 25 7306

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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03-04-2006

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