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KIKUCHI

(54) **ORGANIC EL DISPLAY DEVICE, SUPPORT STAND, AND IMAGE DISPLAY DEVICE**

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(57) **ABSTRACT**

An organic EL panel unit includes: an organic EL panel that displays an image on a front surface of the organic EL panel; and a chassis that is disposed on a rear surface side of the organic EL panel and holds the organic EL panel. The chassis includes a protrusion that protrudes away from the organic EL panel, and the protrusion has a through-hole formed therethrough.

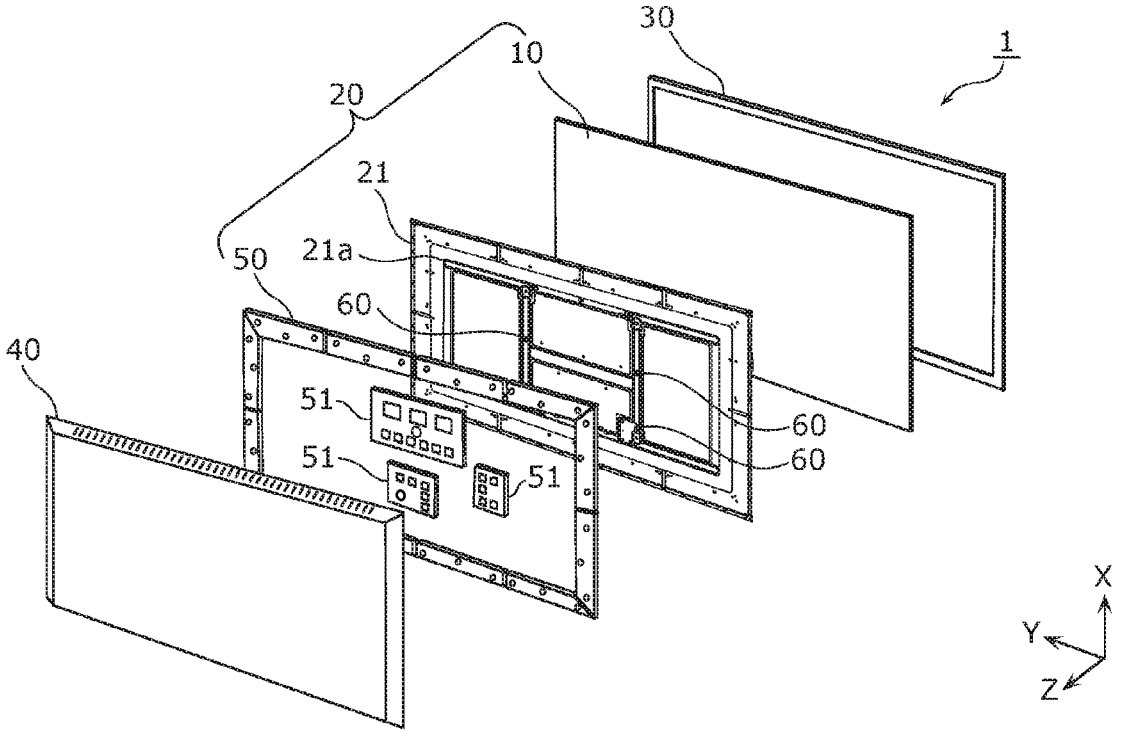


FIG. 1

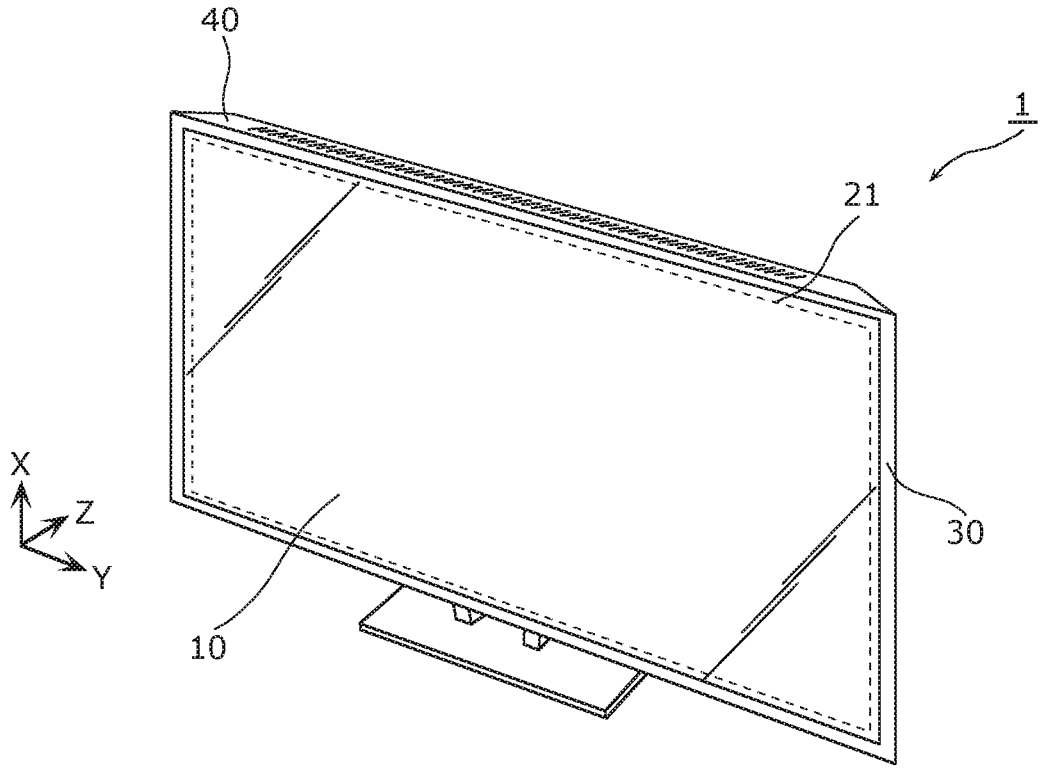


FIG. 2

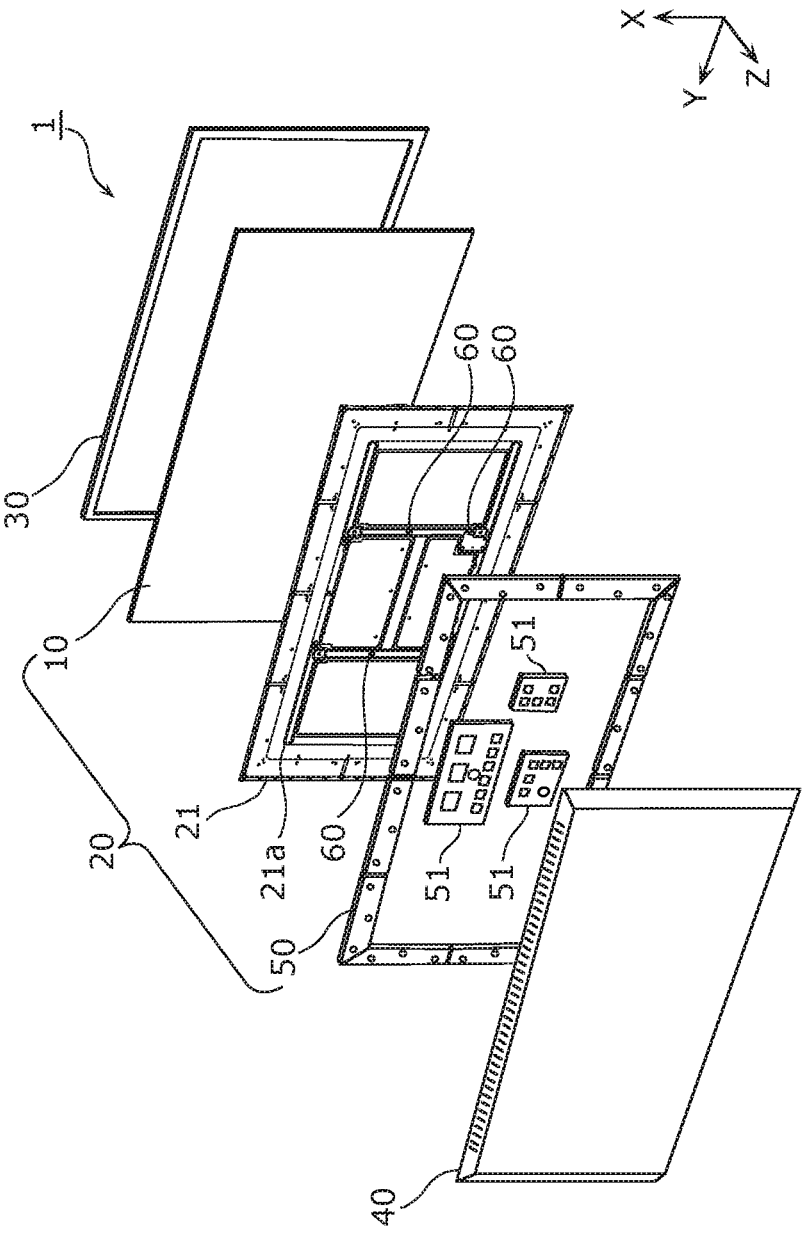


FIG. 3

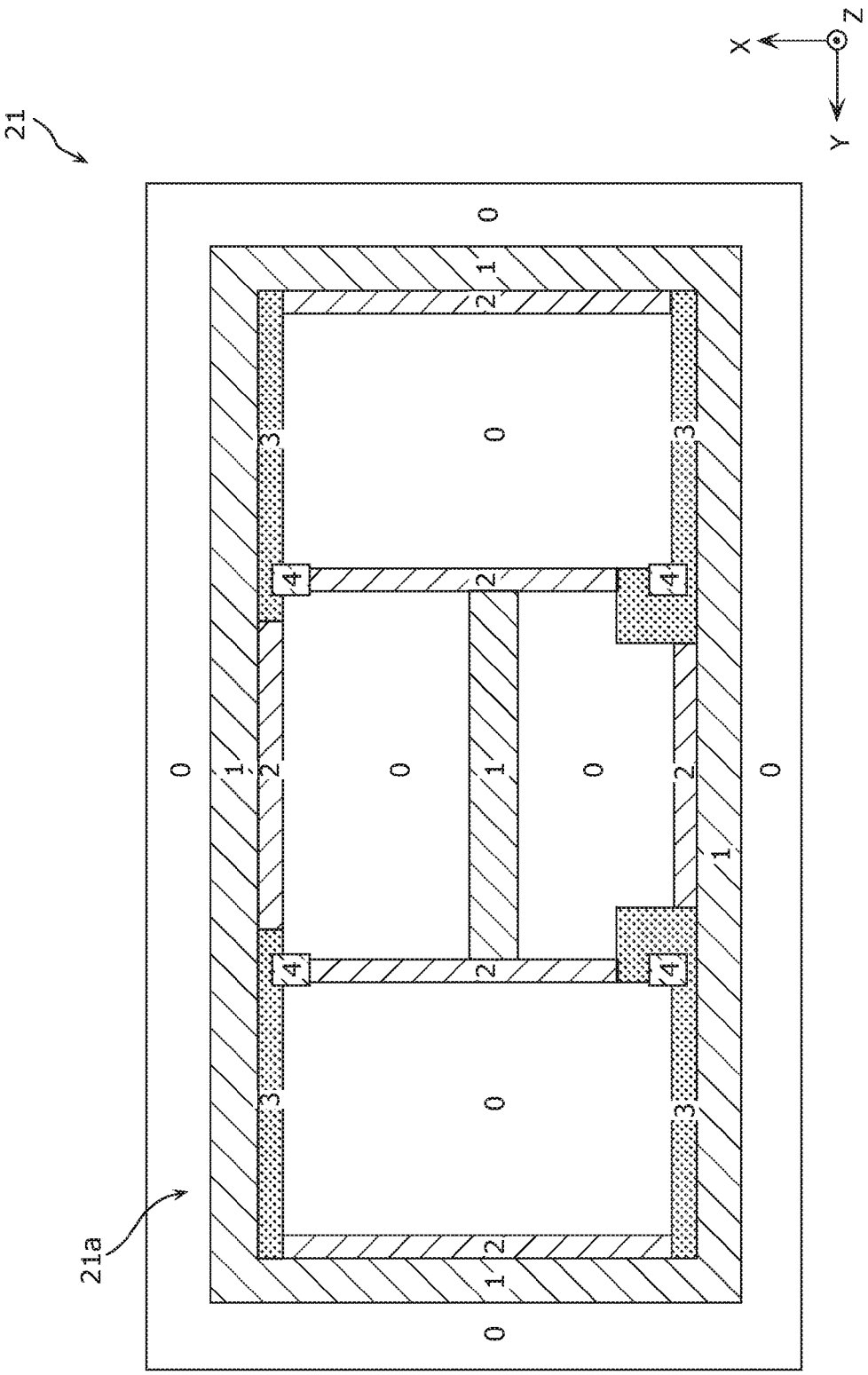


FIG. 4

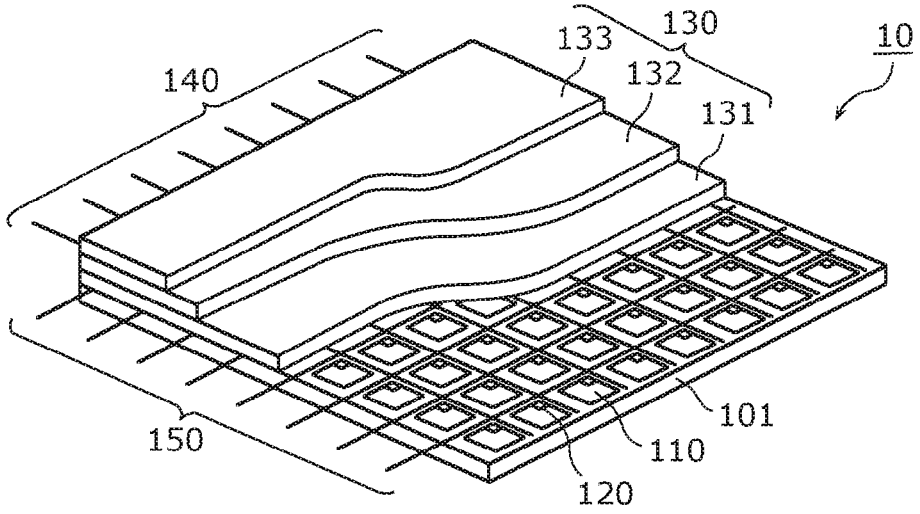

130
133
132
131
10
140
101
110
120
150

FIG. 5

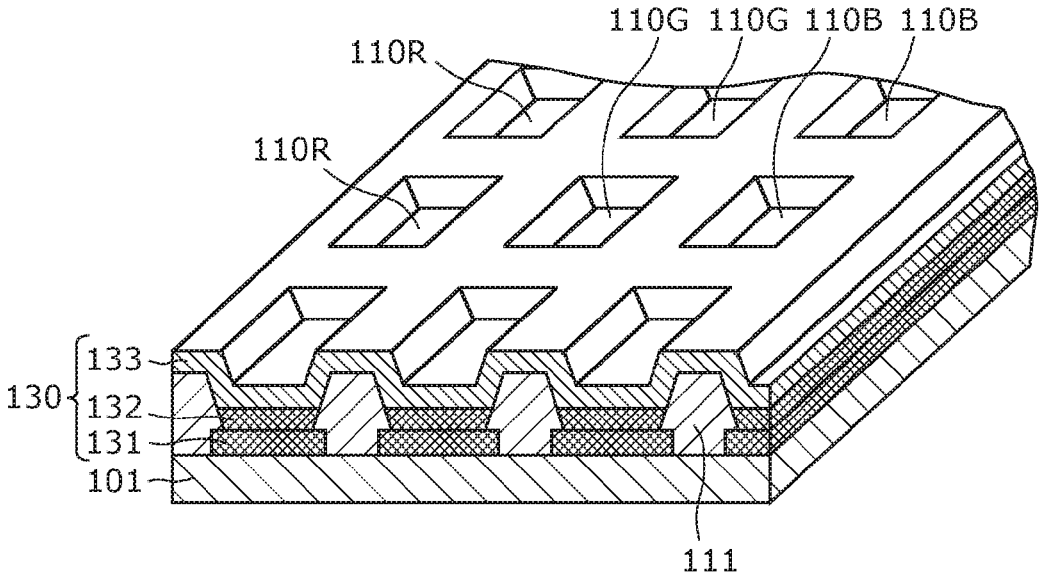

110G 110G 110B 110B
110R
110R
130
133
132
131
101
111

FIG. 6

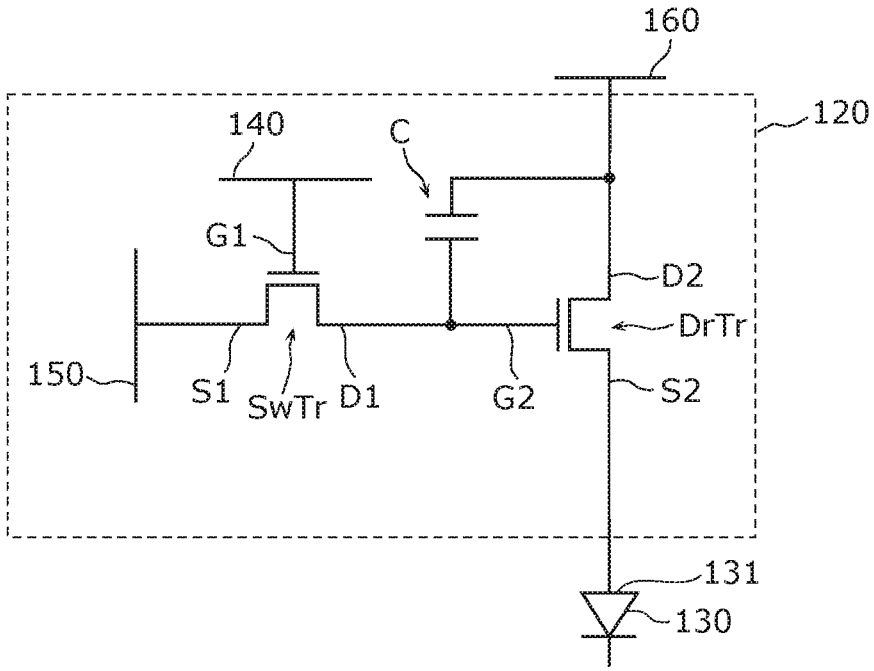


FIG. 7

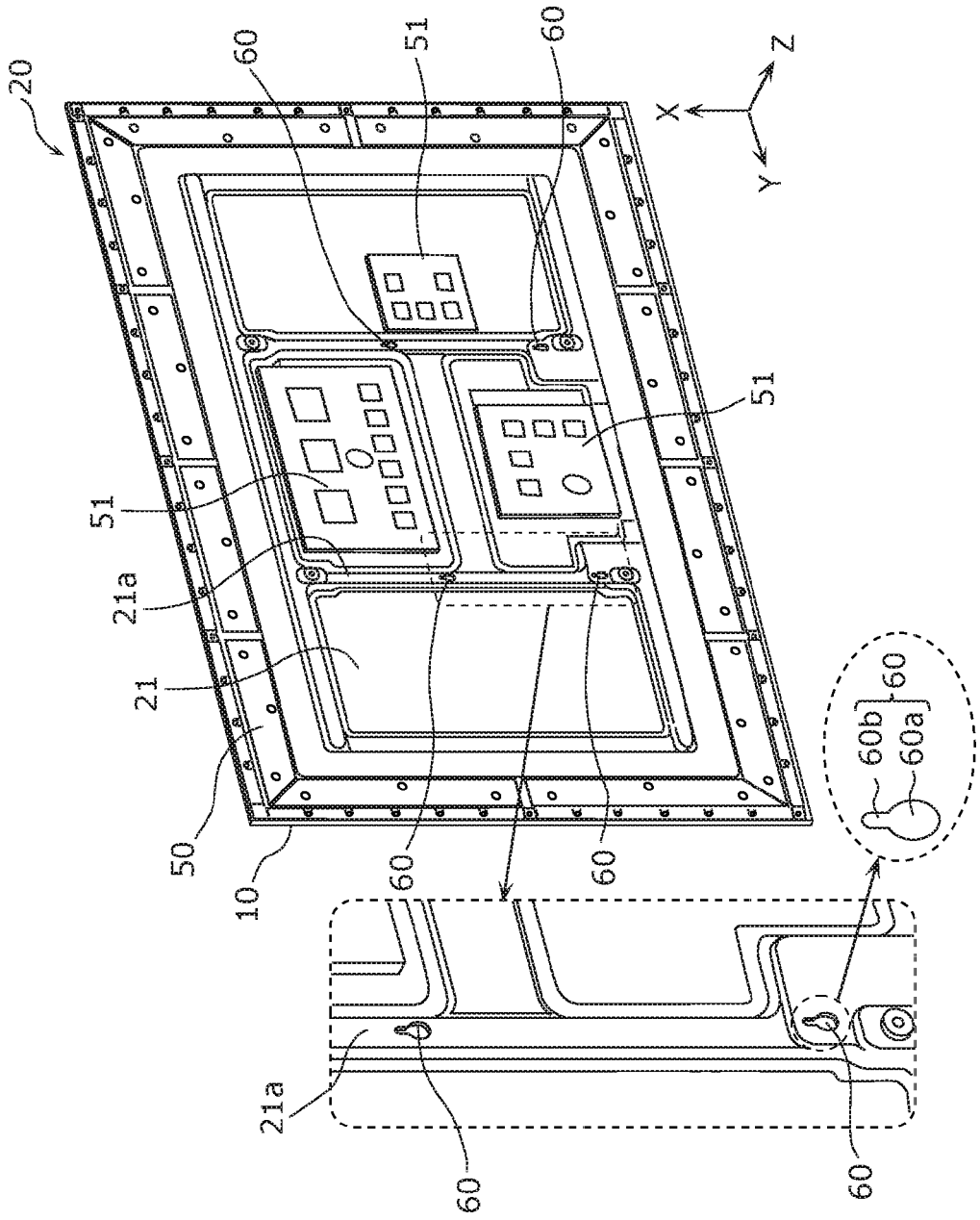


FIG. 8

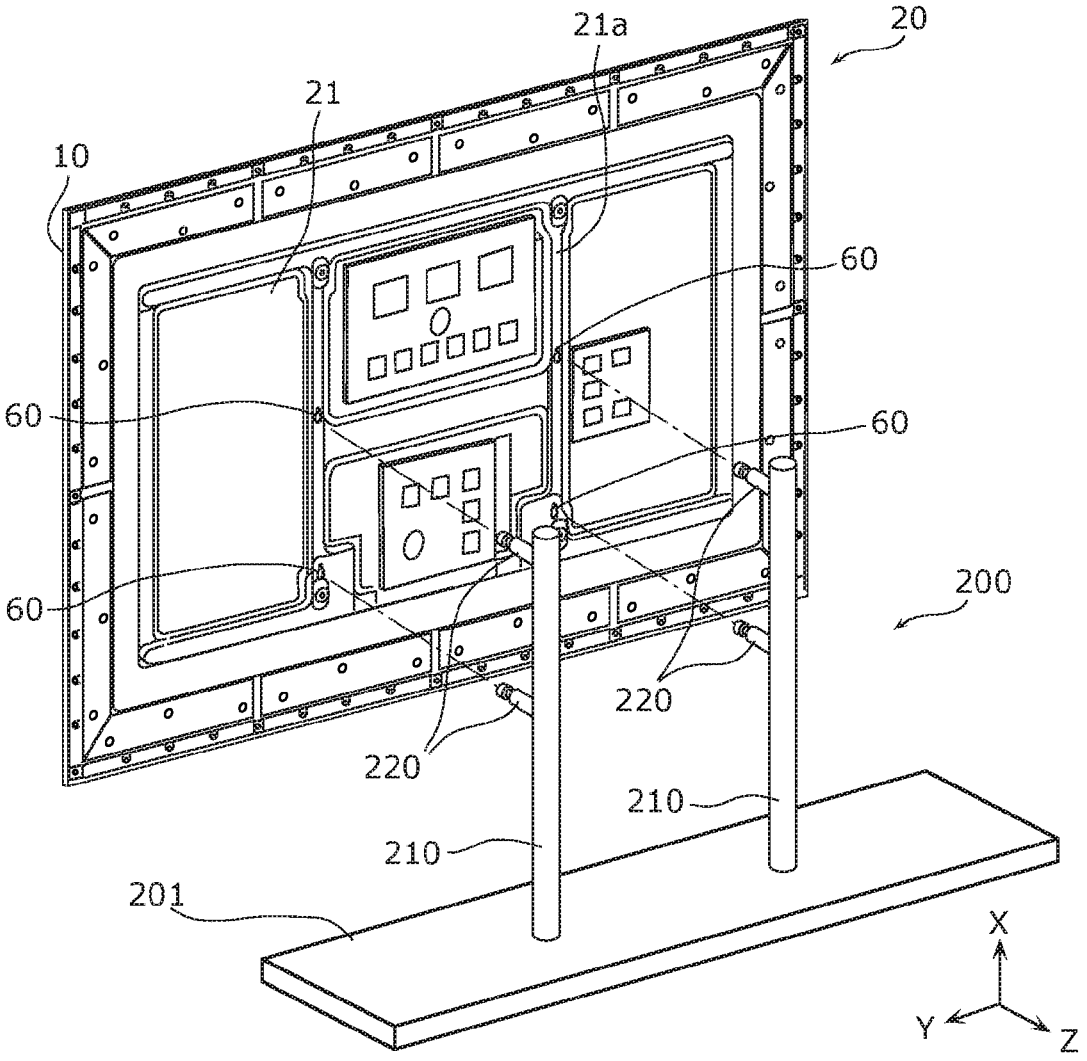


FIG. 9

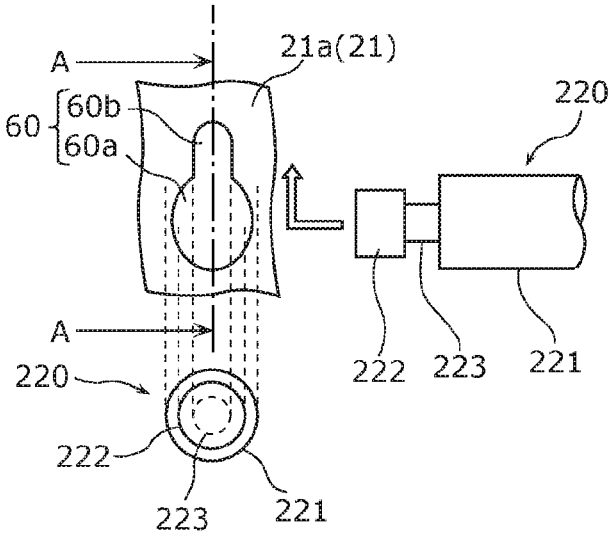

A
21a(21)
220
60
60b
60a
A
220
222
223
221
222
223
221

FIG. 10

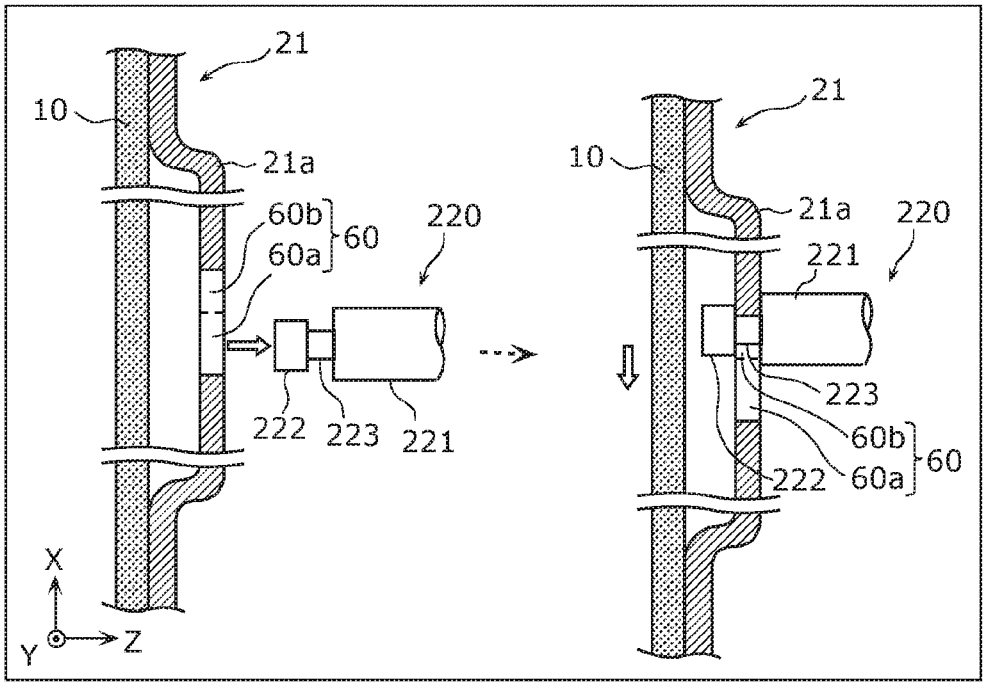

21
10
21a
60b
60a
60
220
222
223
221
X
Y
Z
21
10
21a
220
221
223
60b
60a
60
222

FIG. 11

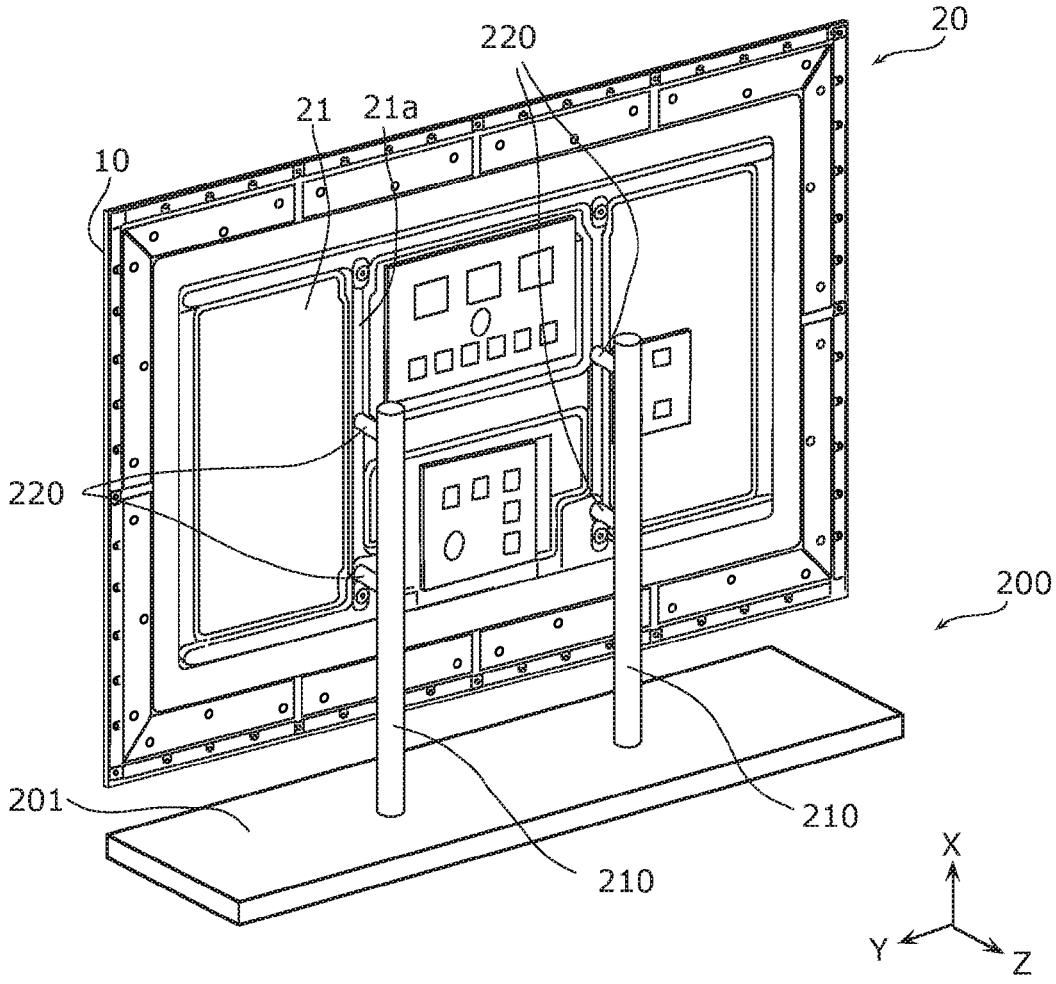

20
220
21
21a
10
220
200
201
210
210
X
Y
Z

FIG. 12

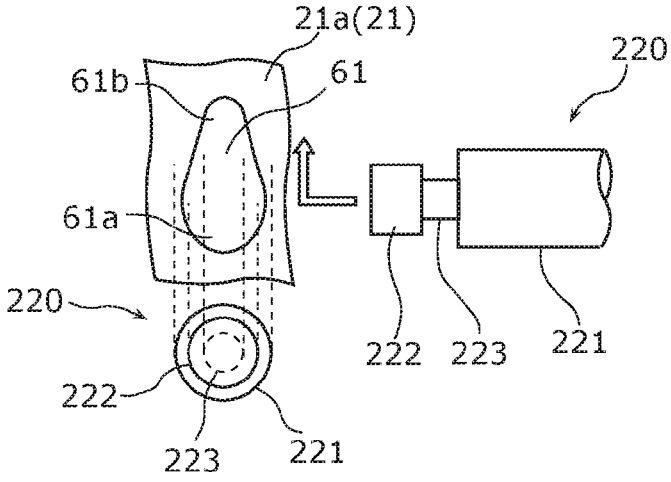

21a(21)
61b
61
220
61a
220
222
223
221
222
223
221

FIG. 13

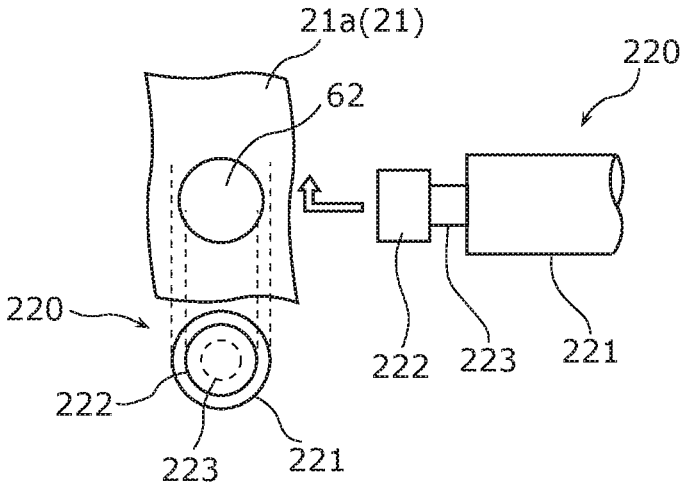

21a(21)
220
62
220
222
223
221
222
223
221

FIG. 14

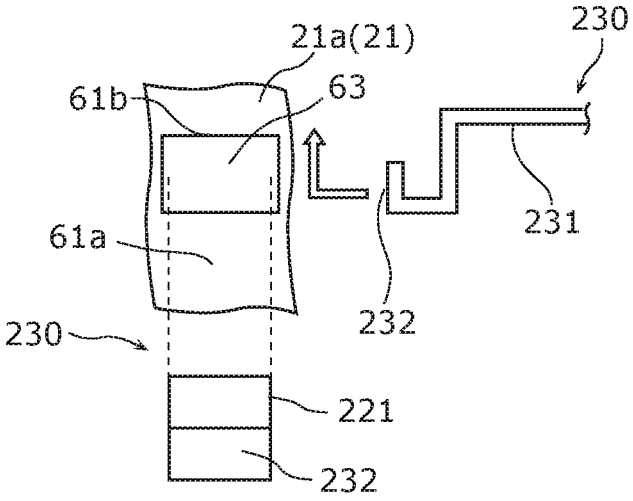

230
21a(21)
61b
63
231
61a
232
230
221
232

FIG. 15

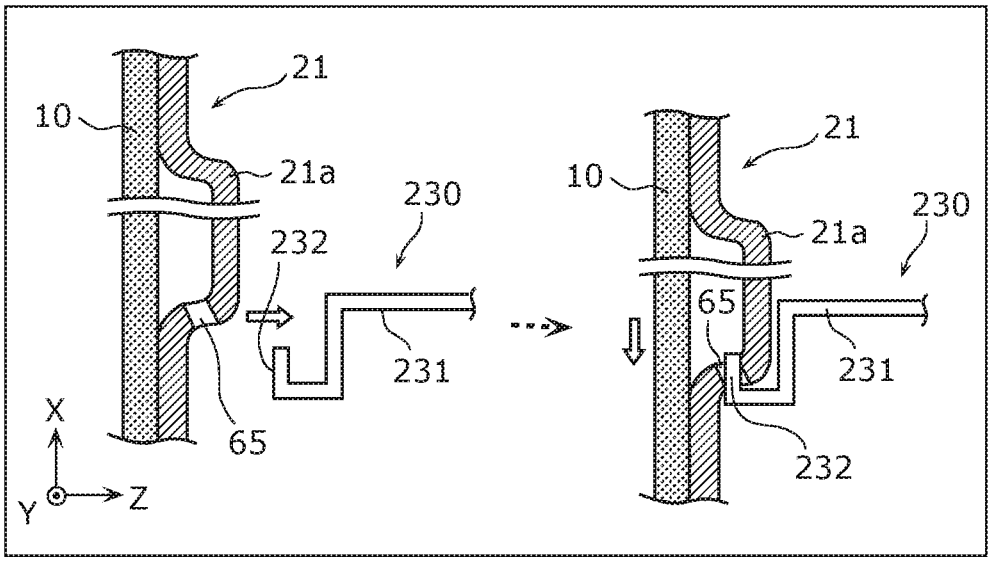

21
10
21a
230
232
231
65
X
Y
Z
21
10
21a
230
65
231
232

FIG. 16

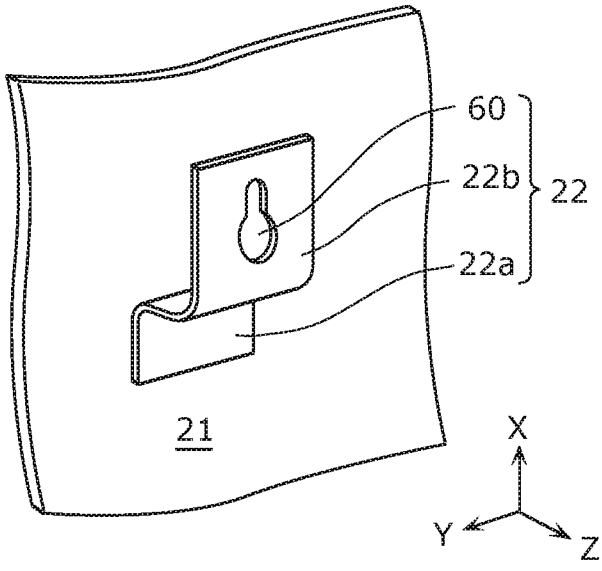

60
22b
22
22a
21
X
Y
Z

FIG. 17

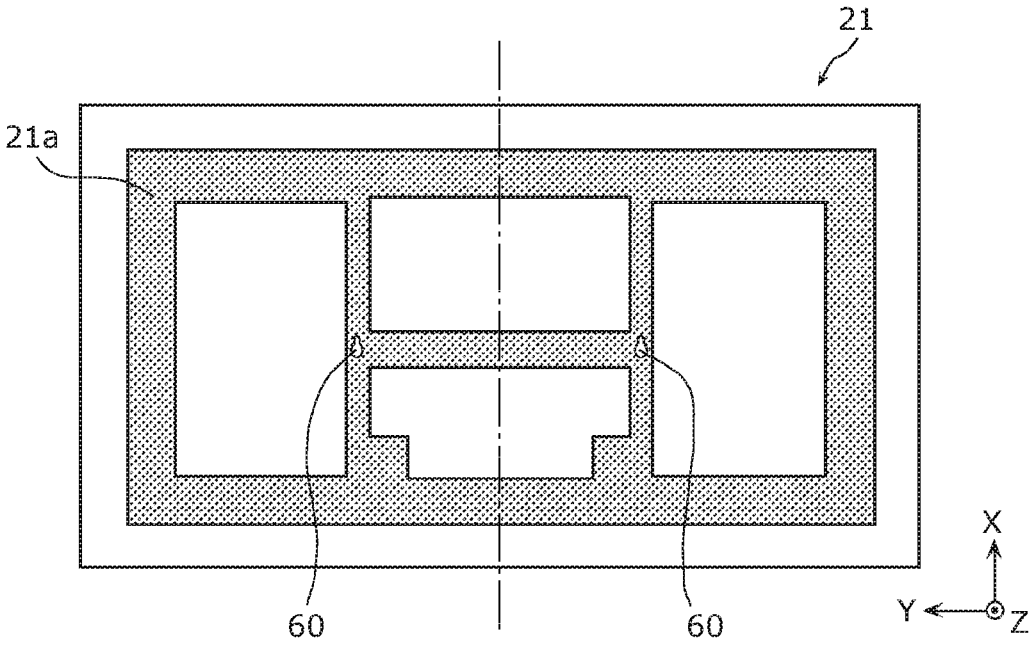
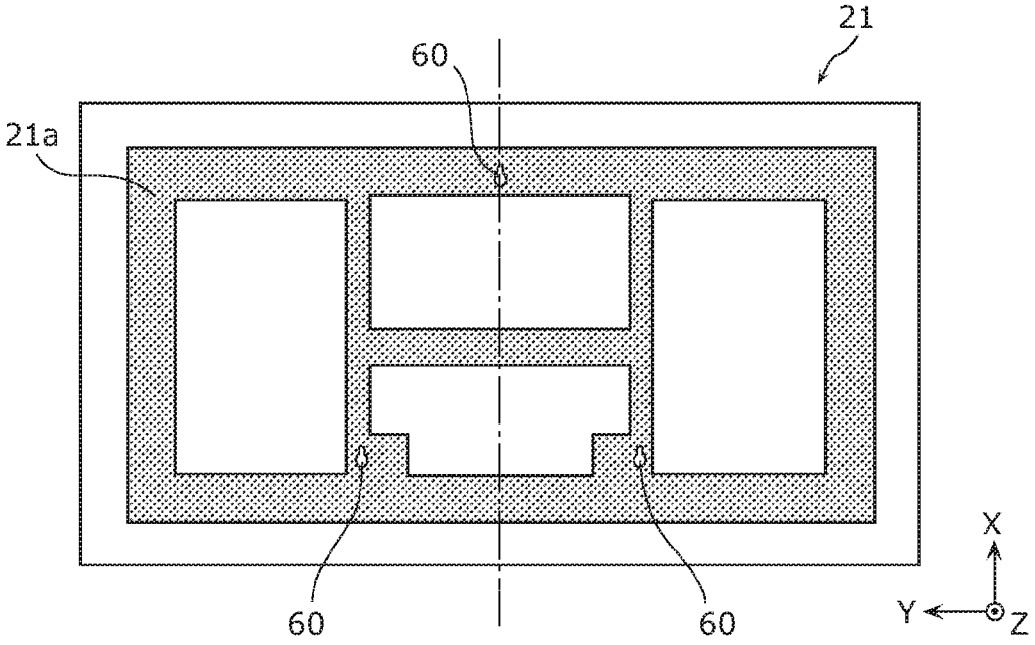


FIG. 18



ORGANIC EL DISPLAY DEVICE, SUPPORT STAND, AND IMAGE DISPLAY DEVICE

TECHNICAL FIELD

[0001] The present disclosure relates to an organic electroluminescent (EL) display device including an organic EL panel.

BACKGROUND ART

[0002] Image display devices, such as televisions, include a display panel unit that includes a display panel such as an organic electroluminescent (EL) panel. Inspection for quality verification, for example, is performed before the display panel unit is installed in the enclosure of the image display device, such as a television. Upon inspection, the display panel unit is required to be supported in a standing state on the work table.

[0003] For example, Patent Literature (PTL) 1 discloses a support device that supports a flat display panel. According to PTL 1, in the support device including: a support stand; and a stand column that stands upright on the support stand and supports an object to be supported, an insulating spacer, for example, is interposed between the stand column and the support stand. According to this configuration, the support device can be prevented from resonating at a specific frequency.

CITATION LIST

Patent Literature

[0004] [PTL 1] Japanese Unexamined Patent Application Publication No. 2003-174600

SUMMARY OF INVENTION

Technical Problem

[0005] The present disclosure provides, for example, an organic EL display device that is easily supported in a standing state and capable of being made thin.

Solution to Problem

[0006] An organic EL display device according to the present disclosure includes: an organic EL panel that displays an image on a front surface of the organic EL panel; and a chassis that is disposed on a rear surface side of the organic EL panel and holds the organic EL panel. The chassis includes a protrusion that protrudes away from the organic EL panel, and the protrusion has a through-hole formed therethrough.

[0007] Moreover, a support stand according to the present disclosure supports the above-described organic EL display device in a standing state, and includes: a base; a column standing on the base; and a support component extending from the column in a direction intersecting a lengthwise direction of the column. The support component has an engaging part on a distal end opposite an end at the column. The engaging part engages with an edge of the through-hole in a state in which the engaging part is inserted in the through-hole.

[0008] Moreover, an image display device according to the present disclosure includes the above-described organic EL display device and a back cover disposed on a rear surface side of the organic EL display device.

Advantageous Effects of Invention

[0009] The organic EL display device according to the present disclosure is easily supported in a standing state and capable of being made thin. Accordingly, the manufacturing efficiency, for example, of a thin image display device such as a television can be increased.

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. **1** is an external perspective view of an image display device according to an embodiment.

[0011] FIG. **2** is an exploded perspective view of an image display device according to an embodiment.

[0012] FIG. **3** is a plan view schematically illustrating the regions of steps in a chassis according to an embodiment.

[0013] FIG. **4** is a partial cutaway perspective view of an organic EL panel according to an embodiment.

[0014] FIG. **5** is a perspective view of an example of pixel banks of an organic EL panel according to an embodiment.

[0015] FIG. **6** is an electrical diagram illustrating a configuration of pixel circuits in an organic EL panel according to an embodiment.

[0016] FIG. **7** is an external perspective view of an organic EL panel unit according to an embodiment.

[0017] FIG. **8** is an external perspective view illustrating one example of a configuration of a support stand according to an embodiment.

[0018] FIG. **9** illustrates the relationship between sizes and shapes of a through-hole and a support component.

[0019] FIG. **10** is a partial cross sectional view of a support component inserted in and engaging with a through-hole.

[0020] FIG. **11** is a perspective view of an organic EL panel unit while supported by a support stand.

[0021] FIG. **12** illustrates the relationship between sizes and shapes of a through-hole and a support component according to Variation 1 of an embodiment.

[0022] FIG. **13** illustrates the relationship between sizes and shapes of a through-hole and a support component according to Variation 2 of an embodiment.

[0023] FIG. **14** illustrates the relationship between sizes and shapes of a through-hole and a support component according to Variation 3 of an embodiment.

[0024] FIG. **15** is a partial cross sectional view of a support component inserted in and engaging with a through-hole according to Variation 4 of an embodiment.

[0025] FIG. **16** is a general external perspective view of a protrusion according to Variation 5 of an embodiment.

[0026] FIG. **17** illustrates one example of a positional arrangement of through-holes when a chassis includes two through-holes.

[0027] FIG. **18** illustrates one example of a positional arrangement of through-holes when a chassis includes three through-holes.

DESCRIPTION OF EMBODIMENTS

[0028] The inventor has discovered the following problems related to conventional organic EL display devices.

[0029] An organic EL panel is a self-luminous display panel, and has a thickness of about 1 mm to 3 mm. Moreover, since there is a demand for making thin image

display devices that include organic EL panels, such as televisions, making thin organic EL panel units (organic EL display devices) including an organic EL panel and a chassis is also in demand.

[0030] As such, in the process for, for example, inspecting the organic EL display device, stably supporting an entire large-screen, thin organic EL display device while in a standing state requires ingenuity.

[0031] However, when the above-described conventional support device, for example, is employed as a device to support the organic EL display device a standing bolt for the support device to support the chassis is required at the lower portion of the chassis. Providing such a bolt that stands on the chassis is not preferable from the perspective of achieving a thin organic EL display device.

[0032] Moreover, with such a support device, since the organic EL display device is supported by fixing the lower portion of the organic EL display device, the larger the screen size of organic EL display device and the thinner the organic EL display device, the harder it is to stably support the organic EL display device.

[0033] The present disclosure has been conceived based on this knowledge, and as a result of diligent examination, the inventor has arrived at a concept for the structure of an organic EL display device that is easily supported in a standing state and capable of being made thin.

[0034] Hereinafter, an embodiment will be described with reference to the drawings appropriately. However, unnecessarily detailed descriptions may be omitted. For example, detailed description of well known matter or repeated description of essentially similar elements may be omitted. This is to avoid unnecessary redundancy and provide easily read descriptions for those skilled in the art.

[0035] Note that the inventor has provided the accompanying drawings and following description in order to facilitate sufficient understanding for those skilled in the art, and as such, are not intended to limit the scope of the claims.

[0036] Hereinafter, an embodiment and variations will be described using FIG. **1** through FIG. **16**. First, using FIG. **1** through FIG. **3**, an outline of the configuration of the image display device according to the embodiment will be given.

[1-1. Image Display Device Configuration Outline]

[0037] FIG. **1** is an external perspective view of an image display device **1** according to the embodiment.

[0038] FIG. **2** is an exploded perspective view of the image display device **1** according to the embodiment.

[0039] As illustrated in FIG. **1** and FIG. **2**, the image display device **1** according to this embodiment includes an organic EL panel unit **20** and a back cover (rear surface enclosure) **40** disposed on the rear surface side of the organic EL panel unit **20**.

[0040] The organic EL panel unit **20** is one example of the organic EL display device, and includes an organic EL panel **10** that displays images on its front surface, and a chassis **21** that is disposed on the rear surface side of the organic EL panel **10** and holds the organic EL panel **10**.

[0041] The image display device **1** further includes a frame (frame body) **30** that has the form of a rectangular frame and covers a peripheral edge of the display side surface (front surface) of the organic EL panel **10**. The frame **30** and the back cover **40** are formed using a resin material or a metal material, for example.

[0042] The image display device **1** is structured such that the organic EL panel unit **20** is disposed between the frame **30** and the back cover **40**. Such an image display device **1** may be realized as a television receiver (television) that outputs an image signal and an audio signal which are obtained from received broadcast waves, for example.

[0043] Moreover, as illustrated in FIG. **2**, a plurality of circuit substrates **50** are attached to the rear surface of the chassis **21**. The circuit substrates **50** are drive circuit substrates provided with a drive circuit (driver) that supplies a signal voltage to the organic EL panel **10**. The plurality of circuit substrates **50** are disposed along the peripheral edge of the chassis **21** and are connected to the organic EL panel **10** via a flexible cable.

[0044] Moreover, a plurality of circuit substrates **51** are attached to the rear surface of the chassis **21**, in a predetermined region including the central region. The electronic circuits included in the circuit substrates **51** include, for example, a signal processing circuit that processes received image signals, a control circuit that controls operations performed by a scan drive circuit and signal line drive circuit, and a power supply circuit that supplies, to each circuit, power received from an external source.

[0045] Note that the image display device **1** includes other elements not shown in FIG. **2**, such as the flexible cable that connects the circuit substrates **50** and the organic EL panel **10**, but depiction of these elements in the drawings and description thereof are omitted in order to demonstrate the characteristics of the image display device **1** according to the present disclosure.

[0046] The chassis **21** is, for example, a metal component, and includes a protrusion **21***a* that protrudes away from the organic EL panel **10** and has a through-hole **60** formed therethrough. In other words, the chassis **21** has, simply stated, the form of a flat plate-shaped main body having the protrusion **21***a* formed therein.

[0047] The chassis **21** according to this embodiment is a component formed by carrying out a stamping process, such as a drawing process, on a rectangular metal plate component (metal plate) made of, for example, aluminum or steel, to form the protrusion **21***a*.

[0048] For example, the protrusion **21***a* can be formed by processing an aluminum plate having a thickness of 0.6 mm with a drawing process. By forming the protrusion **21***a* (drawn portion) in this way, the rigidity of the chassis **21** can be increased.

[0049] Note that in this embodiment, the protrusion **21***a* is drawn in four steps, as illustrated in FIG. **3**. In other words, the protrusion **21***a* has four tiers of heights.

[0050] FIG. **3** is a plan view schematically illustrating the regions of steps in the chassis **21** according to this embodiment.

[0051] In FIG. **3**, each region labeled with numerals **0** through **4** indicates the height position of the step (position of the protrusion **21***a* in the protrusion direction (positive Z axis direction)), and regions of the same step height position are indicated with the same style of hatching.

[0052] More specifically, the regions labeled **0** are regions acting as a reference surface in which drawing processing has not be performed. Regions labeled as **0** are regions closest to the organic EL panel **10**, and are sections which contact or are connected to the organic EL panel **10**.

[0053] Moreover, regions labeled as **1** are regions one step higher than the reference surface, and regions labeled as **2**

are regions two steps higher than the reference surface. Moreover, regions labeled as **3** are regions three steps higher than the reference surface, and regions labeled as **4** are regions four steps higher than the reference surface.

[0054] Note that in this embodiment, while the protrusion **21***a* included in chassis **21** is formed by a drawing process so as to include a plurality of steps as described above, the protrusion **21***a* may have the same height throughout. In other words, protrusion **21***a* need not include a plurality of steps.

[0055] Moreover, the through-hole **60** is formed in the protrusion **21***a* included in the chassis **21** according to this embodiment. The through-hole **60** is formed, for example, along with the protrusion **21***a* in the same stamping process used to form the protrusion **21***a*. Note that the timing at which the through-hole **60** is formed may be before or after stamping process for forming the protrusion **21***a*.

[0056] Next, the organic EL panel unit **20** included in the image display device **1** described above will be described using FIG. **4** through FIG. **11**. First, using FIG. **4** through FIG. **6**, a general outline of the configuration of the organic EL panel **10** included in the organic EL panel unit **20** according to the embodiment will be given.

[1-2. Organic EL Panel]

[0057] FIG. **4** is a partial cutaway perspective view of the organic EL panel **10** according to this embodiment.

[0058] FIG. **5** is a perspective view of pixel banks of the organic EL panel **10** according to this embodiment.

[0059] As illustrated in FIG. **4**, the organic EL panel **10** has a stacked structure including: a TFT substrate (TFT array substrate) **101** on which a plurality of thin-film transistors are arranged; and organic EL elements (light-emitting units) **130**. The organic EL element **130** includes an anode **131**, which is a lower electrode, an EL layer **132**, which is a light-emitting layer made of an organic material, and a cathode **133**, which is an upper electrode.

[0060] Note that although it is omitted from FIG. **4** and FIG. **5**, the organic EL panel **10** includes a glass substrate disposed above the organic EL elements **130**.

[0061] Additionally, the TFT substrate **101** has a structure in which various elements, such as the gate electrode, are stacked on a glass substrate. In other words, the organic EL panel **10** has an overall structure in which the organic EL elements **130** and the like are interposed between two glass substrates. The thickness of the organic EL panel **10** having such a structure is, for example, about 1 mm to 3 mm.

[0062] A plurality of pixels **110** are arranged in a matrix on TFT substrate **101**, and each of the pixels **110** includes a pixel circuit **120**.

[0063] The organic EL elements **130** are formed in one-to-one correspondence with the plurality of pixels **110**, and the pixel circuits **120** of the pixels **110** control light emission of the organic EL elements **130**. The organic EL elements **130** are formed on an interlayer insulation film (planarizing film) formed so as to cover the plurality of thin-film transistors.

[0064] Moreover, the organic EL elements **130** each have a structure in which the EL layer **132** is disposed between the anode **131** and the cathode **133**. A positive hole transport layer is further formed and stacked between the anode **131** and the EL layer **132**, and an electron transport layer is further formed and stacked between the EL layer **132** and the cathode **133**. Note that another organic functional layer may be provided between the anode **131** and the cathode **133**.

[0065] The pixel circuits **120** control driving of the pixels **110**. In addition, a plurality of gate wires (scanning lines) **140** disposed in the row direction of the pixels **110**, a plurality of source wires (signal wires) **150** disposed in the column direction of the pixels **110** so as to intersect the gate wires **140**, and a plurality of power supply wires (omitted in FIG. **4**) disposed in parallel with the source wires **150** are formed on the TFT substrate **101**. The pixels **110** are separated by the gate wires **140** and the source wires **150** disposed orthogonal to one another, for example.

[0066] The gate wires **140** are each connected to one row of gate electrodes of thin-film transistors which operate as switching elements included in the pixel circuits **120**. The source wires **150** are each connected to one column of source electrodes of thin-film transistors which operate as switching elements included in the pixel circuits **120**. The power supply wires are each connected to one column of drain electrodes of thin-film transistors which operate as driver elements included in the pixel circuits **120**.

[0067] As illustrated in FIG. **5**, the pixels **110** of the organic EL panel **10** include three sub pixels **110**R, **110**G, and **110**B of three colors (red, green, and blue). The plurality of sub pixels **110**R, **110**G, and **110**B are disposed in a matrix on the display surface.

[0068] The sub pixels **110**R, **110**G, and **110**B are separated from one another by banks **111**. The banks **111** are formed to make a lattice such that protruding lines extending in parallel with the gate wires **140** and protruding lines extending in parallel with the source wires **150** intersect one another. Portions surrounded by the protruding lines (in other words, openings of the banks **111**) and the sub pixels **110**R, **110**G, and **110**B are in one-to-one correspondence. Note that although the banks **111** are pixel banks in this embodiment, the banks **111** may be line banks.

[0069] The anode **131** is formed for each of the sub pixels **110**R, **110**G, and **110**B, on the interlayer insulation film (planarizing film) on the TFT substrate **101** and inside the openings of the banks **111**. Similarly, the EL layer **132** is formed for the sub pixels **110**R, **110**G, and **110**B, on the anode **131** and inside the openings of the banks **111**. The transparent cathode **133** is formed in a continuous manner above the banks **111** so as to cover the entire EL layer **132** (all the sub pixels **110**R, **110**G, and **110**B).

[0070] Furthermore, the pixel circuits **120** are provided in one-to-one correspondence with the sub pixels **110**R, **110**G, and **110**B, and the sub pixels **110**R, **110**G, and **110**B and the pixel circuits **120** in one-to-one correspondence therewith are electrically connected by contact holes and relay electrodes. Note that the sub pixels **110**R, **110**G, and **110**B have the same configurations, except that the color of the light they emit on the EL layer **132** is different.

[0071] Here, the circuit configuration of the pixel circuits **120** of the pixels **110** will be described with reference to FIG. **6**. FIG. **6** is an electrical diagram illustrating the configuration of the pixel circuits **120** in the organic EL panel **10** according to this embodiment.

[0072] As illustrated in FIG. **6**, each pixel circuit **120** includes a thin-film transistor SwTr, which operates as a switching element, a thin-film transistor DrTr, which operates as a driver element, and a capacitor C, which stores data to be displayed using the corresponding pixel **110**. In this embodiment, the thin-film transistor SwTr is a switching

transistor for selecting a pixel **110**, and the thin-film transistor DrTr is a drive transistor for driving the organic EL element **130**.

[0073] The thin-film transistor SwTr includes a gate electrode G**1** connected to the gate wire **140**, a source electrode S**1** connected to the source wire **150**, a drain electrode D**1** connected to the capacitor C and a gate electrode G**2** of the thin-film transistor DrTr, and a semiconductor film (not illustrated). If a predetermined voltage is applied to the gate wire **140** and the source wire **150** connected to the thin-film transistor SwTr, the voltage applied to the source wire **150** is stored in the capacitor C as a data voltage.

[0074] The thin-film transistor DrTr includes the gate electrode G**2** connected to the drain electrode D**1** of the thin-film transistor SwTr and the capacitor C, a drain electrode D**2** connected to a power supply wire **160** and the capacitor C, a source electrode S**2** connected to the anode **131** of the organic EL element **130**, and a semiconductor film (not illustrated). The thin-film transistor DrTr supplies, from the power supply wire **160** to the anode **131** of the organic EL element **130** via the source electrode S**2**, a current corresponding to the data voltage stored in the capacitor C. Accordingly, a drive current flows from the anode **131** to the cathode **133** in the organic EL element **130**, causing the EL layer **132** to emit light.

[0075] Note that the organic EL panel **10** having the above configuration employs an active matrix scheme for display control of each of the pixels **110** located at the intersections of the gate wires **140** and the source wires **150**. With this, the thin-film transistors SwTr and DrTr of each of the pixels **110** (the sub pixels **110**R, **110**G, and **110**B) cause the corresponding organic EL element **130** to selectively emit light, thus displaying a desired image.

[0076] Next, the configuration of the organic EL panel unit **20** and the support stand **200** thereof for supporting the organic EL panel unit **20** in the inspection process for the organic EL panel unit **20** will be described using FIG. **7** through FIG. **11**.

[1-3. Organic EL Panel Unit]

[0077] FIG. **7** is an external perspective view of the organic EL panel unit **20** according to this embodiment.

[0078] Note that in FIG. **7**, similar to FIG. **2**, elements such as internal wires (flexible cable) and such that essentially do not concern the characteristics of the organic EL panel unit **20** are omitted.

[0079] As illustrated in FIG. **7**, the chassis **21** of the organic EL panel unit **20** includes the protrusion **21***a* formed by a drawing process, and the through-hole **60** is formed in the protrusion **21***a*.

[0080] In this embodiment, four through-holes **60** are formed in the protrusion **21***a* of the chassis **21**. Note that in this embodiment, four through-holes **60** are formed in a single protrusion **21***a* covering a relatively wide region of the chassis **21** (a region spanning the regions labeled **1** through **4** in FIG. **3**). However, each through-hole **60** may be provided in a different one of protrusions separated from each other in the chassis **21**.

[0081] In this embodiment, each through-hole **60** is a hole that penetrates through a portion of the protrusion **21***a*, in a protruding direction (positive Z axis direction) of the protrusion **21***a*. Each through-hole **60** is formed to have, in a plan view of the through-hole **60** (i.e., in a view looking at a side of the chassis **21** reverse from the side on which the organic EL panel **10** is disposed; the same applies hereinafter), two ends in opposing locations having mutually different widths (width in a direction perpendicular to a direction connecting the two ends).

[0082] More specifically, as illustrated in FIG. **7**, among the two ends in a plan view of the through-hole **60**, the lower end is greater in width than the upper end. Moreover, among the two ends, the lower end is of a size that allows for insertion and removal of a predetermined component, and the upper end is of a size that causes the upper end to engage the predetermined component inserted via the lower end.

[0083] Note that "upper" and "lower" in this embodiment mean upper and lower when the organic EL panel unit **20** is in a standing state upon inspection.

[0084] In other words, "upper" and "lower" according to this embodiment may match "upper" and "lower" in a state in which the image display device **1**, which includes the organic EL panel unit **20** and is realized as, for example, a television, is installed, and alternatively may not match this definition of "upper" and "lower".

[0085] Moreover, the "predetermined component" referred to above is, in this embodiment, a support component **220** included in a support stand **200** to be described later using FIG. **8**, and the organic EL panel unit **20** is stably supported while the support component **220** is inserted in the through-hole **60**.

[0086] In this embodiment, more specifically, the through-hole **60** includes a first hole **60***a* and a second hole **60***b* defined by an outwardly extending portion of an edge of the first hole **60***a*, and the first hole **60***a* includes the wider end among the two ends, and the second hole **60***b* includes the narrower end among the two ends.

[0087] In other words, the through-hole **60** according to this embodiment is a single hole having the shape of a large hole and a small hole partially overlapping one another—a shape referred to as, for example, a "keyhole" shape.

[0088] Moreover, the two upper through-holes **60** among the four through-holes **60** are arranged in the chassis **21** such that a midpoint between the two upper through-holes **60** is located in a widthwise (Y direction) center of the chassis **21**. Moreover, similarly, the two lower through-holes **60** among the four through-holes **60** are arranged in the chassis **21** such that a midpoint between the two lower through-holes **60** is located in a widthwise (Y direction) center of the chassis **21**.

[0089] In this way, the organic EL panel unit **20** including four through-holes **60** formed in the protrusion **21***a* of the chassis **21** is supported by the support stand **200** in the manner illustrated in FIG. **8**.

[0090] FIG. **8** is an external perspective view illustrating one example of the configuration of the support stand **200** according to this embodiment. FIG. **9** illustrates the relationship between the sizes and shapes of the through-hole **60** and the support component **220**.

[0091] FIG. **10** is a partial cross sectional view of the support component **220** inserted in and engaging with the through-hole **60**. FIG. **11** is a perspective view of the organic EL panel unit **20** while supported by the support stand **200**.

[0092] Note that the cross section of the protrusion **21***a* illustrated in FIG. **10** is a cross section including a cross section taken along line A-A in FIG. **9**. Moreover, in FIG. **10**, support component **220** is shown in a side view.

[0093] As illustrated in FIG. **8**, the support stand **200** according to this embodiment includes a base **201**, a column **210** standing on the base **201**, and a support component **220**

extending from the column **210** in a direction intersecting the lengthwise direction of the column **210**.

[0094] The support component **220** has an engaging part **222** on an end opposite the column **210**, and the engaging part **222** engages with an edge of the through-hole **60** in a state in which the engaging part **222** is inserted in the through-hole **60**. More specifically, support component **220** further includes shaft part **221** and small diameter part **223** that connects the shaft part **221** and the engaging part **222**. The small diameter part **223** is a part whose diameter is smaller than that of the shaft part **221** and that of the engaging part **222**.

[0095] The support stand **200** according to this embodiment includes two columns **210** standing on the base **201**, and each of the two columns **210** includes two support components **220**, as illustrated in FIG. **8**.

[0096] Note that the method of connecting the columns **210** and the support components **220** together is not particularly limited. For example, when the columns **210** and the support components **220** are made of metal, the columns **210** and the support components **220** may be welded together. Moreover, the columns **210** and the support components **220** may be connected together by forming screw holes (nuts) in the columns **210** and screwing screws provided on the support components **220** on ends opposite the engaging part **222** into the nuts. The same applies to the connection of the base **201** and the columns **210**; various methods may be used such as welding or screwing.

[0097] Moreover, the four support components **220** included in the support stand **200** are disposed in positions corresponding to the four through-holes **60** in the chassis **21** of the organic EL panel unit **20**, as illustrated in FIG. **8**.

[0098] For example, upon performing various inspections on the organic EL panel unit **20**, the engaging parts **222** of support components **220** are inserted into the four through-holes **60** disposed on the rear surface side of the organic EL panel unit **20**.

[0099] More specifically, as illustrated in FIG. **9**, the first hole **60***a*, which is a portion of the through-hole **60**, is of a size that allows for insertion and removal of the engaging part **222** of the support component **220**. Moreover, the second hole **60***b*, which is a portion of the through-hole **60**, is of a size that causes the second hole **60***b* to engage the engaging part **222** inserted into the protrusion **21***a* through the first hole **60***a* (is of a size such that the engaging part **222** cannot be removed via the second hole **60***b*).

[0100] For example, considering one pair of the through-hole **60** and the support component **220**, as illustrated in FIG. **10**, the organic EL panel unit **20** is moved such that the engaging part **222** of the support component **220** is inserted into the protrusion **21***a* via the first hole **60***a* of the through-hole **60**. Next, the organic EL panel unit **20** is moved downward, whereby the engaging part **222** of the support component **220** engages with the edge of the through-hole **60** (the second hole **60***b*). In other words, the engagement state between the engaging part **222** of the support component **220** and the through-hole **60** (the second hole **60***b*) is maintained by the weight of the organic EL panel unit **20**.

[0101] Here, as illustrated in FIG. **9**, for example, the through-hole **60** is formed in a shape that allows for insertion and removal of the engaging part **222** of the support component **220** and does not allow insertion of the shaft part **221**.

[0102] Thus, since the engaging part **222** side end face of the shaft part **221** abuts the edge of the through-hole **60** (the first hole **60***a*) while the engaging part **222** of the support component **220** is inserted in the first hole **60***a*, movement of the engaging part **222** toward the organic EL panel **10** is restricted.

[0103] Since this, for example, prevents the engaging part **222** from interfering with the organic EL panel **10**, damage to the organic EL panel **10** by the support component **220** can be prevented.

[0104] The organic EL panel unit **20** is supported by the support stand **200** as a result of the engagement state between the support component **220** and the through-hole **60** (the second hole **60***b*) being realized with four pairs of through-holes **60** and support components **220**, as illustrated in FIG. **11**, for example. Various inspections are performed on the organic EL panel unit **20** in this state.

[0105] Afterward, the engagement state between the four pairs of through-holes **60** and support components **220** (second holes **60***b*) can be released and the organic EL panel unit **20** can be removed from the support stand **200** by lifting up the organic EL panel unit **20**.

[0106] In other words, so long as the organic EL panel unit **20** is not lifted up, the organic EL panel unit **20** is stably supported because the support components **220** cannot be removed from the through-holes **60** of the organic EL panel unit **20**.

[0107] Note that the support component **220** according to this embodiment is formed by, for example, performing a cutting process on a round, metal rod, or screwing, welding, or bonding together a plurality of parts.

[0108] Moreover, for example, the support component **220** can be configured by screwing two nuts of different diameters onto a rod having threads on its outer surface such that the nuts are spaced apart from each other.

[0109] In other words, among the two nuts, the large diameter nut disposed in the middle of the rod functions as the shaft part **221**, and the small diameter nut disposed at the end of the rod functions as the engaging part **222**.

[0110] With this configuration, for example, the length of the support component **220** that can be inserted into the through-hole **60** can be easily adjusted.

[0111] Moreover, in this embodiment, a rectangular region defined by connecting the four through-holes **60** disposed on the rear surface side of the chassis **21** is disposed in the center region in the widthwise direction of the chassis **21** and offset downward in the vertical direction (z axis direction).

[0112] This is because the center of gravity of the organic EL panel unit **20** is located in the center region in the widthwise direction of the chassis **21** and offset downward in the vertical direction due to, for example, the layout of elements such as the power supply circuit. In other words, the positions of the four through-holes **60** are determined taking into consideration stability when the support stand **200** is supporting the organic EL panel unit **20**.

[0113] Stated differently, the position of the one or more through-holes **60** disposed on the rear surface side of the chassis **21** may be, for example, determined to be anywhere on the protrusion **21***a* taking into consideration ease of inspection of the organic EL panel unit **20** and, for example, balance of the center of gravity of the organic EL panel unit **20**.

[1-4. Advantageous Effects, Etc.]

[0114] As described above, the image display device **1** according to this embodiment includes an organic EL panel unit **20**.

[0115] Moreover, the organic EL panel unit **20** includes an organic EL panel **10** and a chassis **21** that is disposed on the rear surface side of the organic EL panel **10** and holds the organic EL panel **10**. The chassis **21** includes a protrusion **21***a* that protrudes away from the organic EL panel **10** and has a through-hole **60** formed therethrough.

[0116] With this, for example, an element (the through-hole **60**) for supporting the organic EL panel unit **20** in a standing state can be formed using a portion (the protrusion **21***a*) formed to strengthen the chassis **21**. Consequently, an organic EL panel unit **20** that can easily be supported in a standing state and can be made thin is achievable.

[0117] Moreover, in this embodiment, the through-hole **60** is a hole that penetrates through a portion of the protrusion **21***a*, in a protruding direction of the protrusion **21***a*, and is formed to have, in a plan view, two ends in opposing locations having mutually different widths.

[0118] With this, the support component **220** can be inserted into and removed from the through-hole **60** freely, and reliability of the engagement between the support component **220** and the through-hole **60** (the edge of the through-hole **60**) can be increased.

[0119] Moreover, in this embodiment, among the two ends in a plan view of the through-hole **60**, the lower end is greater in width than the upper end.

[0120] More specifically, among the two ends in a plan view of the through-hole **60** according to this embodiment, the lower end is of a size that allows for insertion and removal of the support component **220**, and the upper end is of a size that causes the upper end to engage the support component **220** inserted via the lower end.

[0121] With this, the engagement state between the support component **220** and the through-hole **60** can be maintained by, for example, the weight of the organic EL panel unit **20**.

[0122] Note that the organic EL panel unit **20** may include a through-hole of a shape different from the shape illustrated in FIG. **9**, for example.

[0123] Next, variations of the through-hole disposed in the organic EL panel unit **20** for supporting the organic EL panel unit **20** in a standing state Will be described focusing on the differences with the above embodiment.

[2-1. Variation 1]

[0124] FIG. **12** illustrates the relationship between the sizes and shapes of a through-hole **61** according to Variation 1 of the embodiment and the support component **220**.

[0125] In the through-hole **61** illustrated in FIG. **12**, the end **61***a*, which is the lower end in a plan view, is of a shape that allows for insertion and removal of the support component **220**, and the end **61***b*, which is the upper end, is of a size that causes the end **61***b* to engage the support component **220** inserted via the lower end **61***a*.

[0126] Moreover, a defining characteristic of the through-hole **61** according to Variation 1 is that it is formed to have a region that narrows in width from a first end **61***a* to a second end **61***b* among the two ends.

[0127] In other words, compared to the through-hole **60** according to the above embodiment, the boundary between the portion that allows for insertion and removal of the engaging part **222** of the support component **220** and the portion that restricts removal of the engaging part **222** the through-hole **61** is not clear. However, in the relatively wide end **61***a*, the through-hole **61** allows for the insertion and removal of the engaging part **222** of the support component **220**, and in the relatively narrow end **61***a*, engagement with the engaging part **222** is possible.

[0128] In other words, stable support of the organic EL panel unit **20** is possible by inserting and engaging the support component **220** into and with the through-hole **61** formed in the protrusion **21***a* included in the chassis **21**.

[0129] Note that the shape of the through-hole having a region that narrows in width from a first end to a second end among the two ends in a plan view of the through-hole may be, for example, a triangle or a trapezoid in addition to the example illustrated in FIG. **12**. In other words, a through-hole having a triangular or trapezoidal plan view shape may be formed in the protrusion **21***a* as a through-hole for stably supporting the organic EL panel unit **20**.

[2-2. Variation 2]

[0130] FIG. **13** illustrates the relationship between the sizes and shapes of a through-hole **62** according to Variation 2 of the embodiment and the support component **220**.

[0131] The through-hole **62** illustrated in FIG. **13** has a plan view shape that is a circle of a size that allows for insertion and removal of the engaging part **222** and prevents insertion of the shaft part **221**.

[0132] In other words, the through-hole **62** is a hole that is recognizable as a simple circular hole, rather than a hole of a shape in which a section that allows for insertion and removal of the engaging part **222** and a section that engages with the engaging part **222** are clearly distinguishable (i.e., a keyhole shape) like the through-hole **60** according to the above embodiment.

[0133] However, the support component **220** includes a small diameter part **223** between the engaging part **222** and the shaft part **221**, whereby a step is formed between the engaging part **222** and the small diameter part **223**. As such, when the organic EL panel unit **20** is moved downward after the engaging part **222** is inserted in the through-hole **62**, the stepped part engages with the edge of the through-hole **62**. In other words, stable support of the organic EL panel unit **20** by the support component **220** is possible.

[0134] Moreover, since the through-hole **62** is of a size that prohibits insertion of the shaft part **221**, the engaging part **222** inserted via the through-hole **62** of the protrusion **21***a* can be prevented from interfering with the organic EL panel **10**.

[2-3. Variation 3]

[0135] FIG. **14** illustrates the relationship between the sizes and shapes of a through-hole **63** and a support component **230** according to Variation 3 of the embodiment.

[0136] The through-hole **63** illustrated in FIG. **14** has a rectangular plan view shape. In other words, the shape of the through-hole **63** in a plan view is not round like the through-hole **60** described in the above embodiment, but configured of straight lines only.

[0137] Moreover, the support component **230** has the shape of a bent elongated plate-like component to match the

through-hole **63** shaped as described above. More specifically, the support component **230** includes an engaging part **232** and a shaft part **231**.

[0138] Moreover, the through-hole **63** is of a size and shape that allows for insertion and removal of the engaging part **232**, and the engaging part **232** has the shape of a hook.

[0139] In other words, as illustrated in FIG. **14**, when the organic EL panel unit **20** is moved downward after the engaging part **232** is inserted in the through-hole **63**, the engaging part **232** engages with the edge of the through-hole **63**. In other words, stable support of the organic EL panel unit **20** by the support component **230** is possible.

[0140] Moreover, the through-hole **63** is of a size that prohibits insertion of the shaft part **231** when the support component **230** is inserted in the through-hole **63** and oriented perpendicular to the surface of the protrusion **21***a* on which the through-hole **63** is formed. In other words, when the organic EL panel unit **20** including the chassis **21** in which one or more through-holes **63** are formed is to be supported by the support stand **200** including the support component **230**, the engaging part **232** inserted via the through-hole **63** and the organic EL panel **10** can be prevented from interfering with each other.

[0141] Moreover, since the edge of the through-hole **63** and the support component **230** are in contact with each other on a line parallel with the surface of the protrusion **21***a* in which the through-hole **63** is formed, the stability in the rotational direction of the organic EL panel unit **20** centered about the support component **230** increases, for example.

[2-4. Variation 4]

[0142] FIG. **15** is a partial cross sectional view of the support component **220** inserted in and engaging with a through-hole **65** according to Variation 4 of the embodiment.

[0143] The through-hole **65** illustrated in FIG. **15** differs from the through-hole **60** according to the above embodiment in that it is provided as a hole that protrudes through the protrusion **21***a* in a direction intersecting the protruding direction of the protrusion **21***a*.

[0144] More specifically, the through-hole **65** is provided as a hole protruding through the lower side surface of the protrusion **21***a*.

[0145] The support component **230** described in Variation 3 and illustrated in FIG. **14** is exemplified as the predetermined component that engages with this sort of through-hole **65**.

[0146] In other words, as illustrated in FIG. **15**, the organic EL panel unit **20** is moved to bring the tip end of the engaging part **232** of the support component **230** closer to the through-hole **65**, and after the tip end of the engaging part **232** is located below the opening of the through-hole **65**, the organic EL panel unit **20** is moved downward.

[0147] With this, the engaging part **232** of the support component **230** engages (fits with) the through-hole **65**. In other words, the organic EL panel unit **20** is supported by the support component **230** while the engaging part **232** is hooked on the through-hole **65**.

[0148] Moreover, in this state, a state in which the organic EL panel unit **20** is stably supported is maintained by the weight of the organic EL panel unit **20**.

[0149] Moreover, since the edge of the through-hole **65** and the support component **230** are in contact with each other on a line parallel with the surface of the protrusion **21***a* in which the through-hole **65** is formed, the stability in the rotational direction of the organic EL panel unit **20** centered about the support component **230** increases, for example.

[2-5. Variation 5]

[0150] FIG. **16** is a general external perspective view of a protrusion **22** according to Variation 5 of the embodiment.

[0151] The protrusion **22** illustrated in FIG. **16** differs from the protrusion **21***a* according to the above embodiment in that is included in chassis **21** as a component attached to the main body of the chassis **21**.

[0152] More specifically, the protrusion **22** according to this variation includes a joining section **22***a* joined to the main body of the chassis **21**, and a protruding section **22***b* that is connected to the joining section **22***a* and in which the through-hole **60** is formed.

[0153] Note that the protrusion **22** is made by, for example, forming the through-hole **60** by stamping a metal plate cut into a predetermined size, and then bending the metal plate.

[0154] Moreover, the protrusion **22** is attached to the main body of the chassis **21** by joining, using a method such as welding, bonding, or fastening with screws, the joining section **22***a* of the protrusion **22** to the main body of the chassis **21**.

[0155] Such a protrusion **22** can be provided on the chassis **21** in the case that a bulge (a recess when viewed from the side on which the organic EL panel **10** is disposed), such as is illustrated in FIG. **2** and FIG. **3**, for example, is not to be formed in the chassis **21** with a drawing process.

[0156] Alternatively, in the case that the bulge is formed in the chassis **21** by a drawing process but, for example, there is no bulge suitable for supporting the organic EL panel unit **20**, such a protrusion **22** can be provided on the chassis **21**.

[0157] For example, the organic EL panel unit **20** can be stably supported by the support stand **200** as a result of the chassis **21** including protrusions **22** in locations corresponding to the four support components **220** (for example, see FIG. **8**) of the support stand **200**.

[0158] In this way, the freedom with regard to where the one or more through-holes **60** can be located on the chassis **21** increases by providing the protrusion **22** including the through-hole **60** as a component separate from the main body of the chassis **21**.

[0159] Moreover, since the plate-like component that is the main body of the chassis **21** is disposed between the through-hole **60** and the organic EL panel **10**, the engaging part **222** of the support component **220** inserted in the through-hole **60** can be prevented from directly interfering with the organic EL panel **10**, for example.

[0160] With this, for example, the projection amount of the protrusion **22** (the z axis direction height measured from the surface on which the protrusion **22** is disposed) can be minimized, which contributes to achieving a thin organic EL panel unit **20**.

[0161] Note that the chassis **21** may include the protrusion **21***a* in which one or more through-holes **60** are formed and the protrusion **22** according to this variation. In other words, the through-hole **60** provided in the main body of the chassis **21** and the through-hole **60** provided in the protrusion **22** attached to the main body of the chassis **21** may both be employed.

[0162] Moreover, the protrusion **22** may have formed therethrough, in place of the through-hole **60**, any one of the through-holes **61** through **63** and **65** according to the above Variations 1 through 4.

[0163] Moreover, two or more through-holes, such as the through-hole **60**, may be formed through a single protrusion **22**.

[0164] Moreover, the protrusion **22** may include a plurality of joining sections **22***a*. For example, joining sections **22***a* may be provided on both ends of a U-shaped protruding section **22***b*.

3. Other Embodiments

[0165] The above embodiment and variations are presented as examples of the techniques disclosed in the present application. However, the techniques of the present disclosure are not limited thereto; the techniques are also applicable to embodiments arrived at by making various modifications, interchanges, additions or omissions. The techniques are also applicable to new embodiments arrived at by combining various elements described in the above embodiment and variations.

[0166] Examples of other embodiments include the following.

[0167] For example, in the embodiment, four through-holes **60** are provided in the chassis **21**. However, the chassis **21** may include at least one through-hole **60**.

[0168] FIG. **17** illustrates one example of a positional arrangement of through-holes **60** when the chassis **21** includes two through-holes **60**, and FIG. **18** illustrates one example of a positional arrangement of through-holes **60** when the chassis **21** includes three through-holes **60**

[0169] For example, as illustrated in FIG. **17**, the protrusion **21***a* of the chassis **21** may include two through-holes **60** formed a predetermined distance apart from each other.

[0170] In this case, for example, when the center of gravity of the organic EL panel unit **20** in the widthwise direction is located in the central region of the organic EL panel unit **20**, the two through-holes **60** are arranged such that the midpoint between the two through-holes **60** is located in the center of the chassis **21** in the widthwise direction. Moreover, the support stand **200** includes two support components **220** arranged in positions where the support stand **200** can support the organic EL panel unit **20** using the two through-holes **60**.

[0171] This makes stable support of the organic EL panel unit **20** by the support stand **200** possible.

[0172] Note that the positions in which the two through-holes **60** are arranged in a vertical direction are preferably located above the center of gravity of the organic EL panel unit **20** in the vertical direction. With this, for example, when the organic EL panel unit **20** is supported by the support stand **200**, the organic EL panel unit **20** can be inhibited from leaning in the front-to-back direction (Z axis direction).

[0173] Moreover, as illustrated in FIG. **18**, the protrusion **21***a* of the chassis **21** may include three through-holes **60**.

[0174] In this case, for example, the three through-holes **60** are arranged in the protrusion **21***a* of the chassis **21** so as to be positioned at the points of an isosceles triangle. Moreover, the support stand **200** includes three support components **220** arranged in positions where the support stand **200** can support the organic EL panel unit **20** using the three through-holes **60**. With this, stable support of the organic EL panel unit **20** is possible.

[0175] Moreover, since the organic EL panel unit **20** is supported at three points, when the organic EL panel unit **20** is supported by the support stand **200**, the organic EL panel unit **20** can more reliably be inhibited from leaning in the front-to-back direction (Z axis direction).

[0176] Note that among the three through-holes **60** illustrated in FIG. **18**, the support component **220** corresponding to the through-hole **60** located in the upper part and the widthwise central region of the protrusion **21***a* of the chassis **21** may be provided in a component that connects the top ends of the two columns **210** (see FIG. **8**). With this, the support stand **200** does not interfere with the inspection of the circuit substrates **51** located in the central region of the chassis **21**.

[0177] Moreover, although not illustrated in the drawings, the number of through-holes **60** formed in the protrusion **21***a* of the chassis **21** may be one. For example, by forming a single through-hole **60** in the upper part and the widthwise central region of the protrusion **21***a* of the chassis **21**, support with a support stand **200** that includes only one support component **220** is possible.

[0178] Moreover, for example, when only one through-hole for supporting the organic EL panel unit **20** is formed in the chassis **21**, a supporting structure the through-hole and the support component contact each other on a straight line, such as with the through-hole **63** and the support component **230** in Variation 3, can be employed. With this, stability upon supporting the organic EL panel unit **20** can be increased.

[0179] Moreover, the location in which the one or more through-holes **60** are arranged can be determined so as to be common among a plurality of organic EL panel units **20** of different screen sizes. With this, for example, a single, common support stand **200** can be used as a tool for supporting a plurality of organic EL panel units **20**.

[0180] The supplementary recitations regarding the number and arrangement of the through-holes **60** also applies to the through-holes **61** through **63** and **65** according to the above Variations 1 through 4.

[0181] Moreover, the number of protrusions **22** in Variation 5 described above may be one or more. For example, the chassis **21** may include two protrusions **22** joined to the main body of the chassis **21** a predetermined distance apart from each other and, as a result, include two through-holes **60**. In this case, for example, stable support of the organic EL panel unit **20** is possible by arranging the protrusions **22** such that the midpoint between the two through-holes **60** is located in the widthwise central region of the chassis **21**.

[0182] The non-limiting embodiment has been described by way of example of the techniques of the present disclosure. To this extent, the accompanying drawings and detailed description are provided.

[0183] Thus, the elements set forth in the accompanying drawings and detailed description include not only components essential to solve the problems but also components unnecessary to solve the problems, for the purpose of illustrating the techniques. Thus, those unnecessary components should not be deemed essential due to the mere fact that they are described in the accompanying drawings and the detailed description.

[0184] The above embodiment is for providing an example of the techniques of the present disclosure, and thus

various modifications, interchanges, additions and omissions are possible in the scope of the claims and equivalent scope thereof.

INDUSTRIAL APPLICABILITY

[0185] The present disclosure is useful for image display devices where thinness is called for, and is applicable as an image display device, such as a television receiver, monitor display, digital signage, mobile device, tablet device, or table-top display device, and as an organic EL display device included in an image display device.

REFERENCE SIGNS LIST

[0186] **1** image display device
[0187] **10** organic EL panel
[0188] **20** organic EL panel unit
[0189] **21** chassis
[0190] **21***a*, **22** protrusion
[0191] **22***a* joining section
[0192] **22***b* protruding section
[0193] **30** frame
[0194] **40** back cover
[0195] **50**, **51** circuit substrate
[0196] **60**, **61**, **62**, **63**, **65** through-hole
[0197] **60***a* first hole
[0198] **60***b* second hole
[0199] **61***a*, **61***b* end
[0200] **101** TFT substrate
[0201] **110** pixel
[0202] **110**R, **110**G, **110**B sub pixel
[0203] **111** bank
[0204] **120** pixel circuit
[0205] **130** organic EL element
[0206] **131** anode
[0207] **132** EL layer
[0208] **133** cathode
[0209] **140** gate wire
[0210] **150** source wire
[0211] **160** power supply wire
[0212] **200** support stand
[0213] **201** base
[0214] **210** column
[0215] **220**, **230** support component
[0216] **221**, **231** shaft part
[0217] **222**, **232** engaging part
[0218] **223** small diameter part

1. An organic EL display device, comprising:
an organic EL panel that displays an image on a front surface of the organic EL panel; and
a chassis that is disposed on a rear surface side of the organic EL panel and holds the organic EL panel,
wherein the chassis includes a protrusion that protrudes away from the organic EL panel, and the protrusion has a through-hole formed therethrough.

2. The organic EL display device according to claim **1**, wherein
the through-hole is a hole that penetrates through a portion of the protrusion in a protruding direction of the protrusion, and is formed to have, in a plan view, two ends in opposing locations having mutually different widths.

3. The organic EL display device according to claim **2**, wherein
among the two ends in a plan view of the through-hole, a lower end is greater in width than an upper end.

4. The organic EL display device according to claim **3**, wherein
among the two ends in a plan view of the through-hole, the lower end is of a size that allows for insertion and removal of a predetermined component, and the upper end is of a size that causes the upper end to engage the predetermined component inserted via the lower end.

5. The organic EL display device according to claim **2**, wherein
the through-hole includes a first hole and a second hole defined by an outwardly extending portion of an edge of the first hole, the first hole including a wider end among the two ends, and the second hole including a narrower end among the two ends.

6. The organic EL display device according to claim **2**, wherein
the through-hole is formed to have a region that narrows in width from a first end to a second end among the two ends.

7. The organic EL display device according to claim **1**, wherein
the protrusion is formed by stamping a portion of the chassis, the chassis being a plate-like component.

8. The organic EL display device according to claim **1**, wherein
the protrusion includes two through-holes, each of which is the through-hole, formed a predetermined distance apart from each other.

9. The organic EL display device according to claim **1**, wherein
the protrusion includes a joining section joined to a main body of the chassis, and a protruding section that is connected to the joining section and has the through-hole formed therethrough.

10. The organic EL display device according to claim **9**, wherein
the chassis includes two protrusions, each of which is the protrusion, joined to the main body of the chassis a predetermined distance apart from each other and, as a result, includes two through-holes, each of which is the through-hole.

11. The organic EL display device according to claim **8**, wherein
the two through-holes are arranged in the chassis such that a midpoint between the two through-holes is located in a widthwise center of the chassis.

12. A support stand that supports the organic EL display device according to claim **1** in a standing state, the support stand comprising:
a base;
a column standing on the base; and
a support component extending from the column in a direction intersecting a lengthwise direction of the column,
wherein the support component has an engaging part on a distal end opposite an end at the column, the engaging part engaging with an edge of the through-hole in a state in which the engaging part is inserted in the through-hole.

13. An image display device, comprising:
the organic EL display device according to claim **1**; and
a back cover disposed on a rear surface side of the organic EL display device.

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