



US 20250264184A1

(19) **United States**

(12) **Patent Application Publication**
PARK

(10) **Pub. No.: US 2025/0264184 A1**

(43) **Pub. Date: Aug. 21, 2025**

(54) **STAND AND DISPLAY APPARATUS**

Publication Classification

(71) Applicant: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

(51) **Int. Cl.**
F16M 11/04 (2006.01)

F16M 11/18 (2006.01)

(72) Inventor: **Jin PARK**, Suwon-si (KR)

(52) **U.S. Cl.**
CPC **F16M 11/046** (2013.01); **F16M 11/18** (2013.01); **F16M 2200/028** (2013.01)

(73) Assignee: **SAMSUNG ELECTRONICS CO., LTD.**, Suwon-si (KR)

(21) Appl. No.: **19/197,633**

(57) **ABSTRACT**

(22) Filed: **May 2, 2025**

Related U.S. Application Data

(63) Continuation of application No. PCT/KR2023/017104, filed on Oct. 31, 2023.

Foreign Application Priority Data

Jan. 4, 2023 (KR) 10-2023-0001427
Jan. 27, 2023 (KR) 10-2023-0010994

A display apparatus includes a display; a stand, and a control device. The stand includes a stand body and a bolt. The bolt may be configured to protrude from the stand body. The control device is electrically connectable to the display and includes a mounting hole on the side. The stand and the control device may be configured so that the bolt protruding from the stand body may be inserted into the mounting hole to mount the control device on the stand. The control device mounted on the stand is supported by the stand.

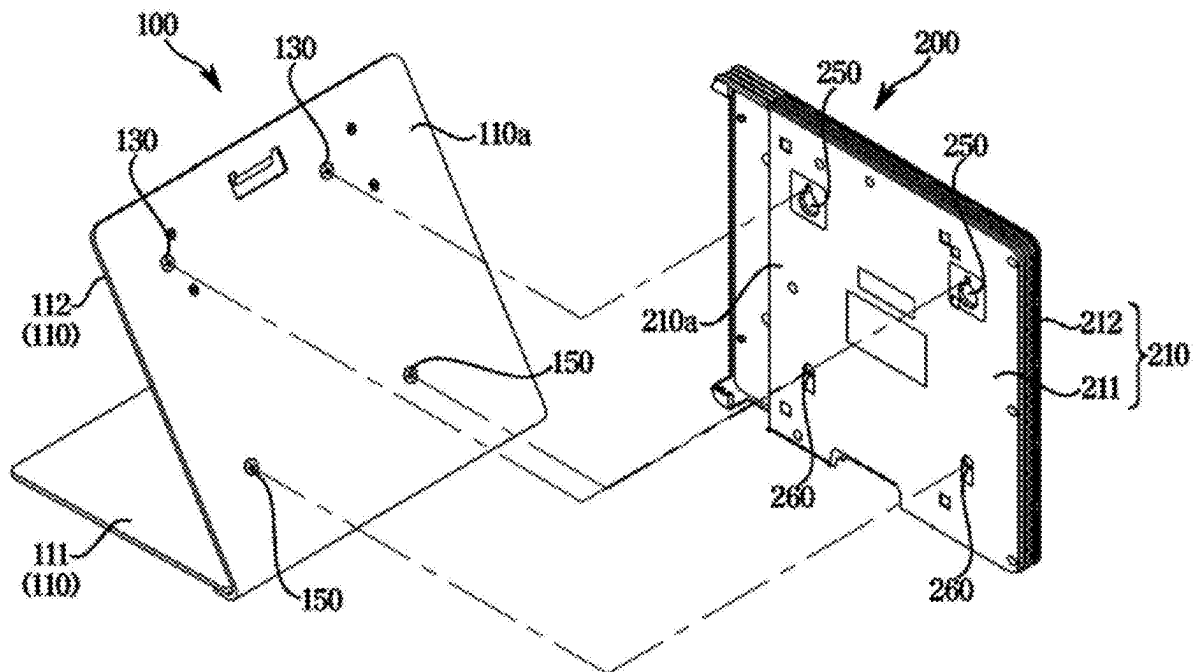


FIG. 1

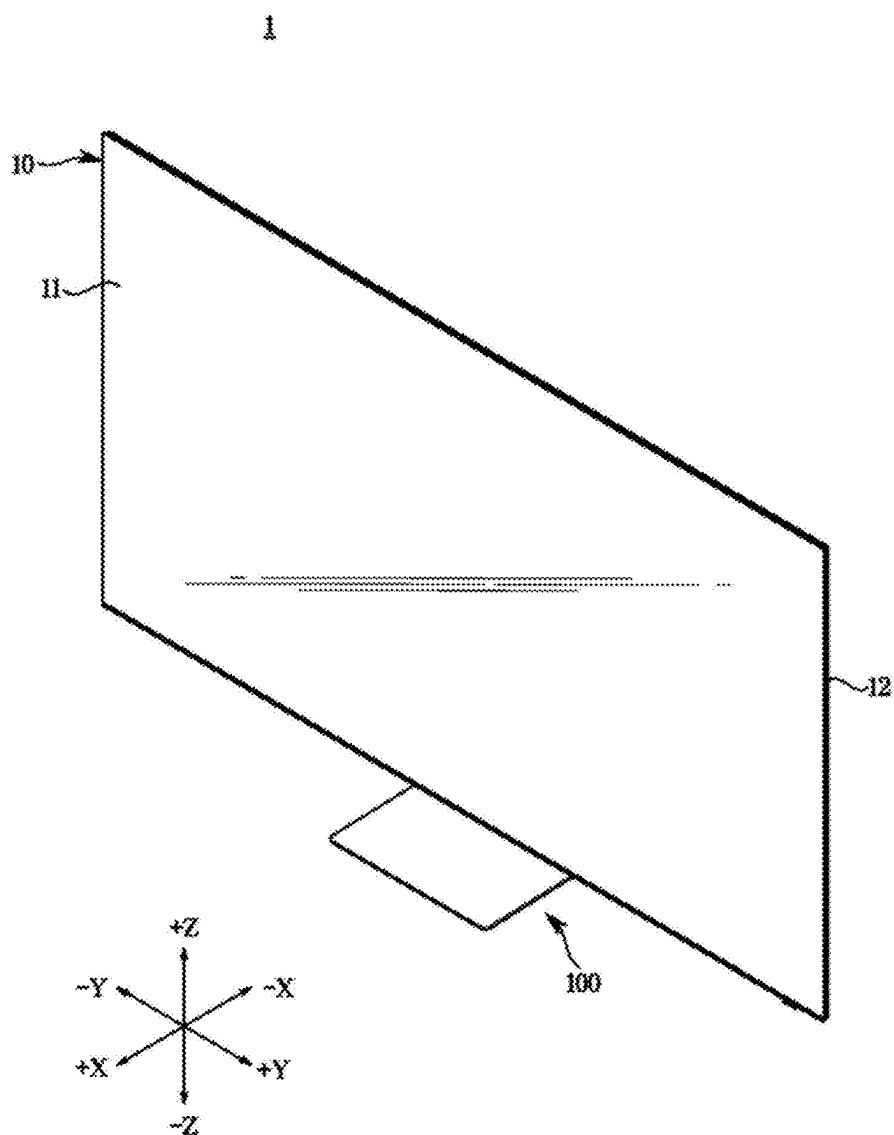


FIG. 2

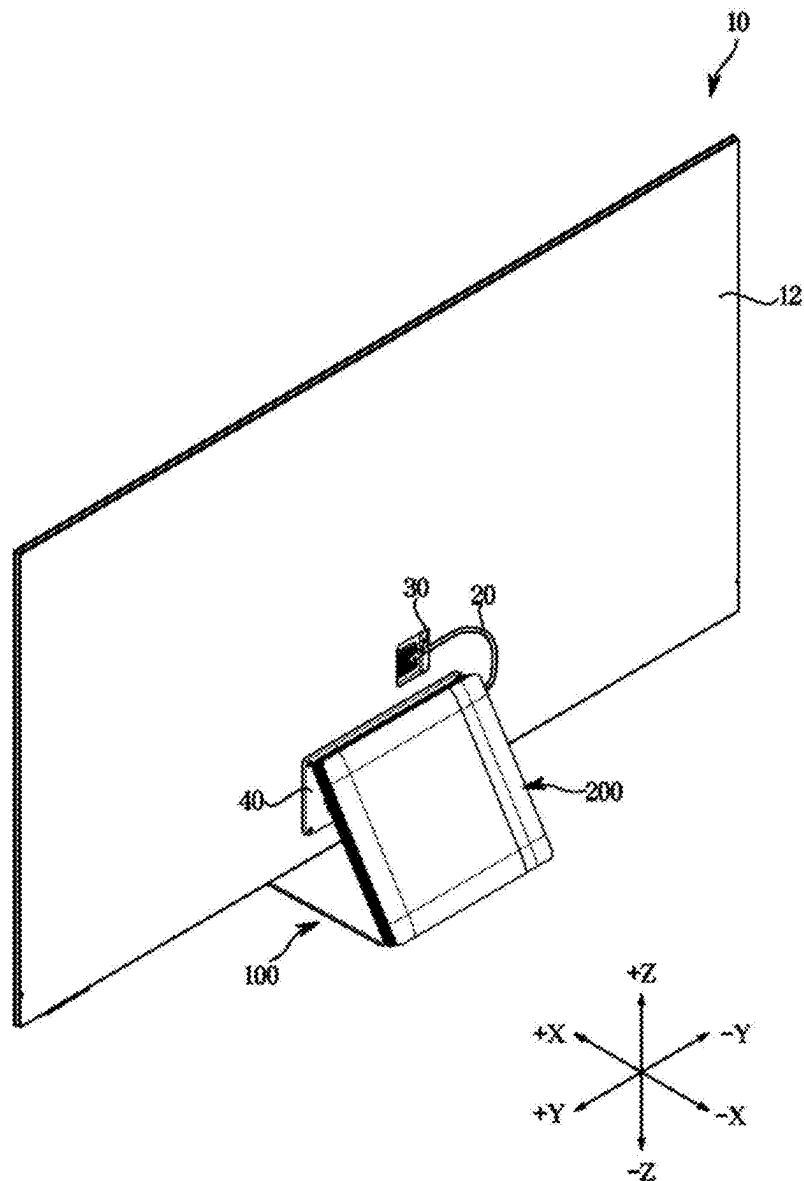


FIG. 3

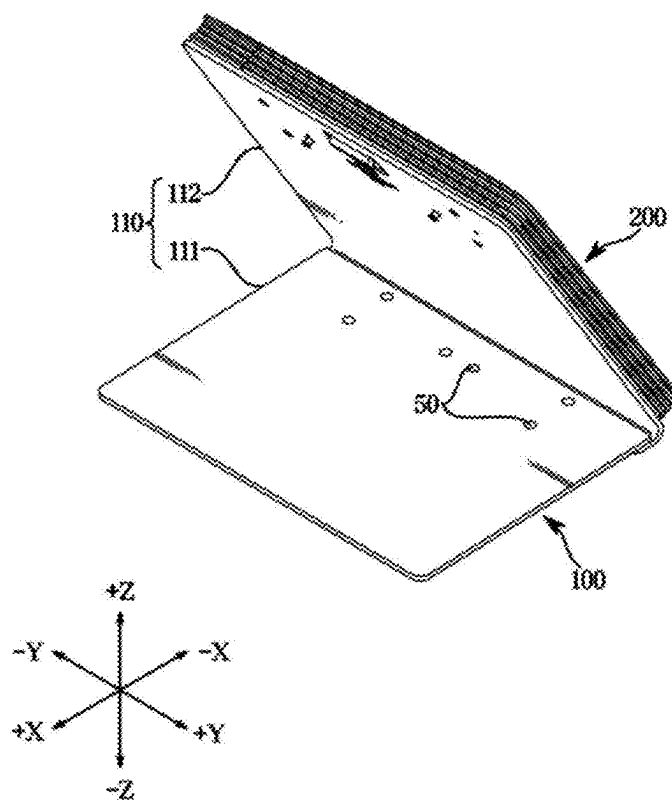


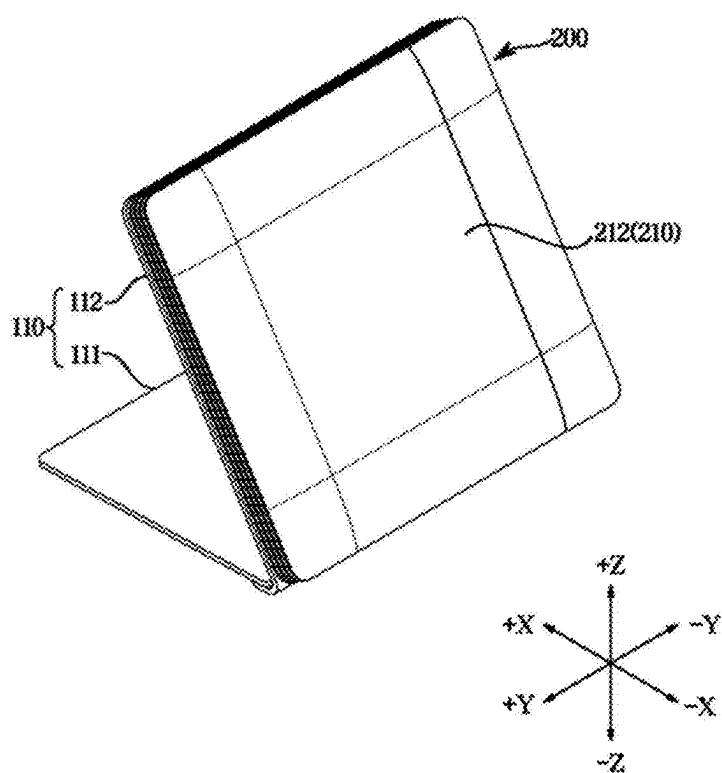
FIG. 4

FIG. 5

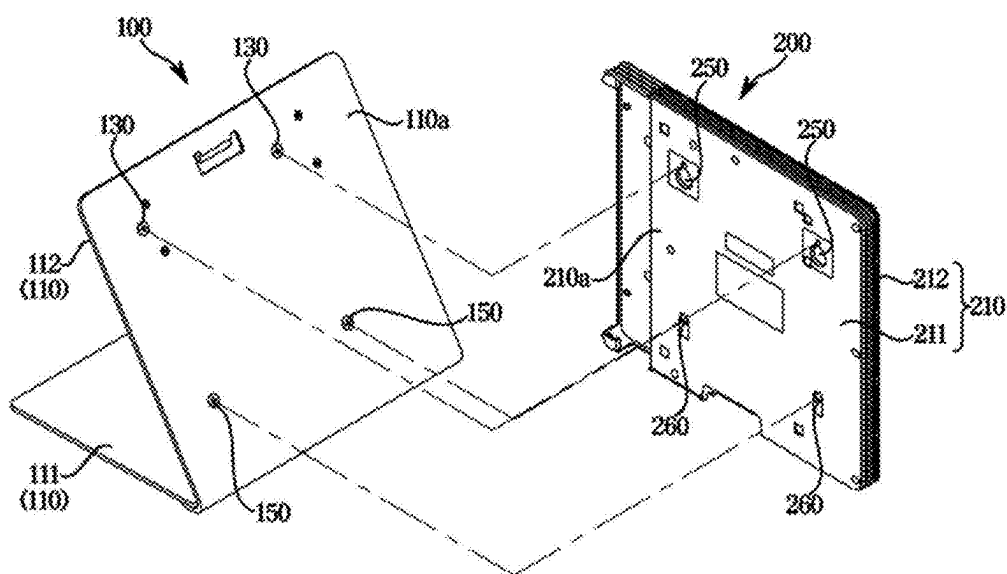


FIG. 6

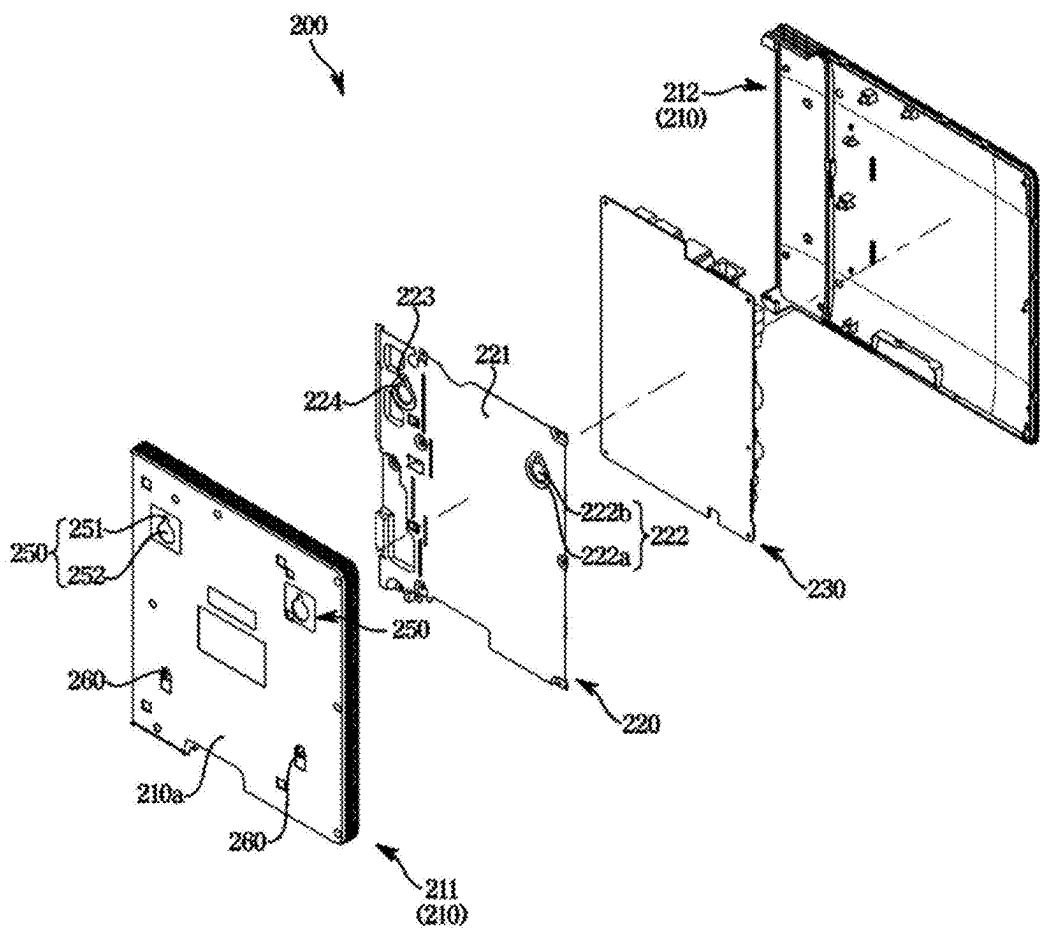


FIG. 7

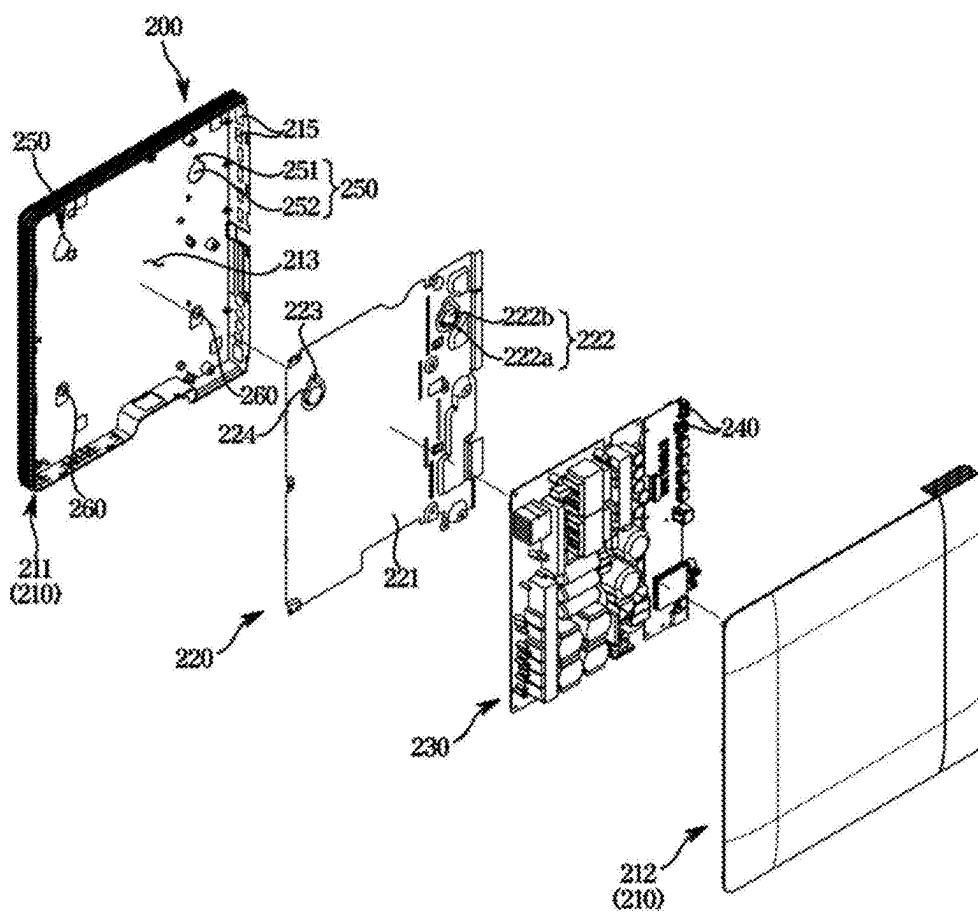


FIG. 8

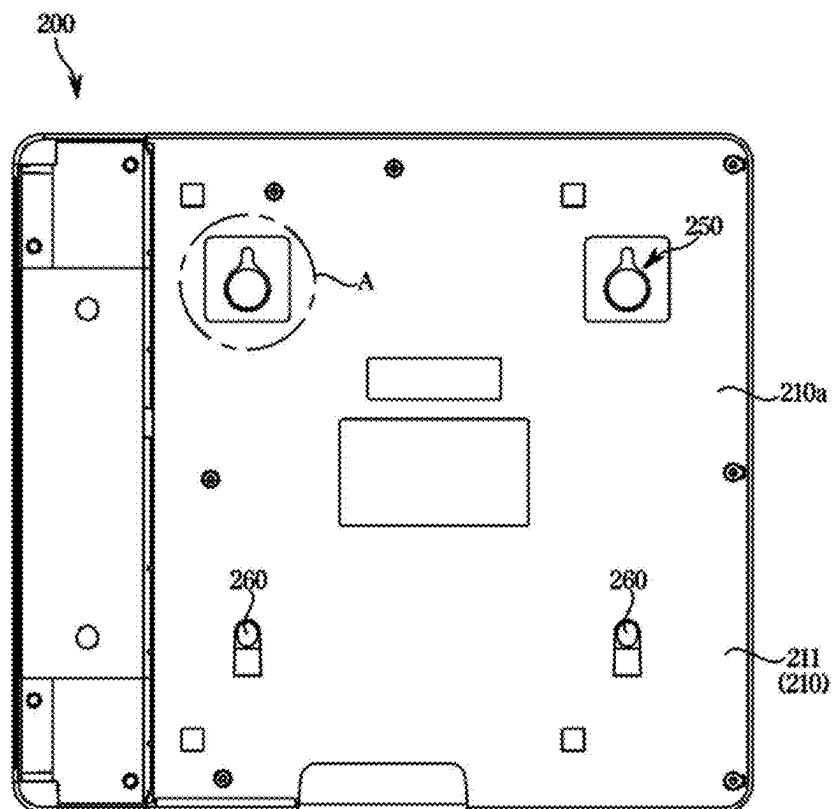


FIG. 9

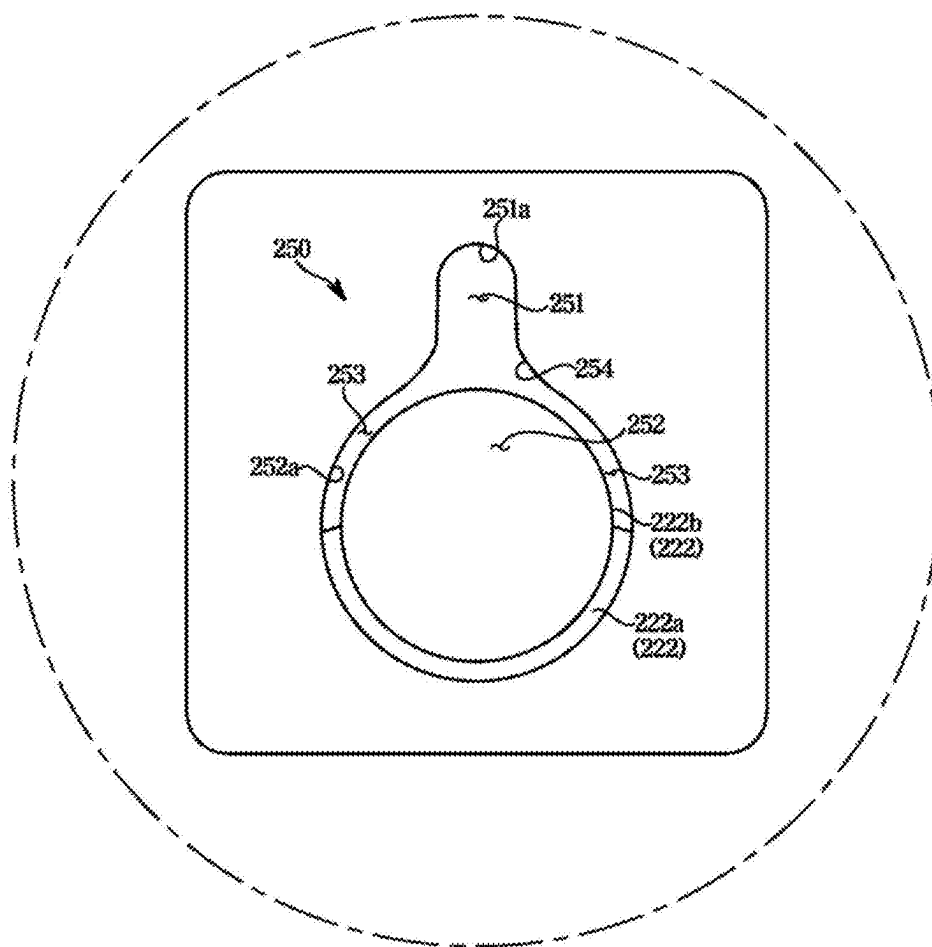


FIG. 10

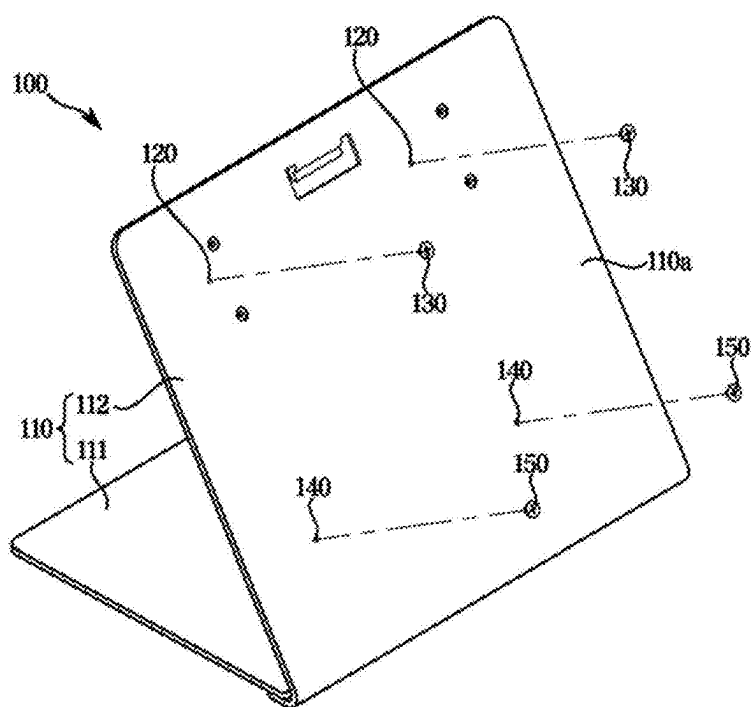


FIG. 11

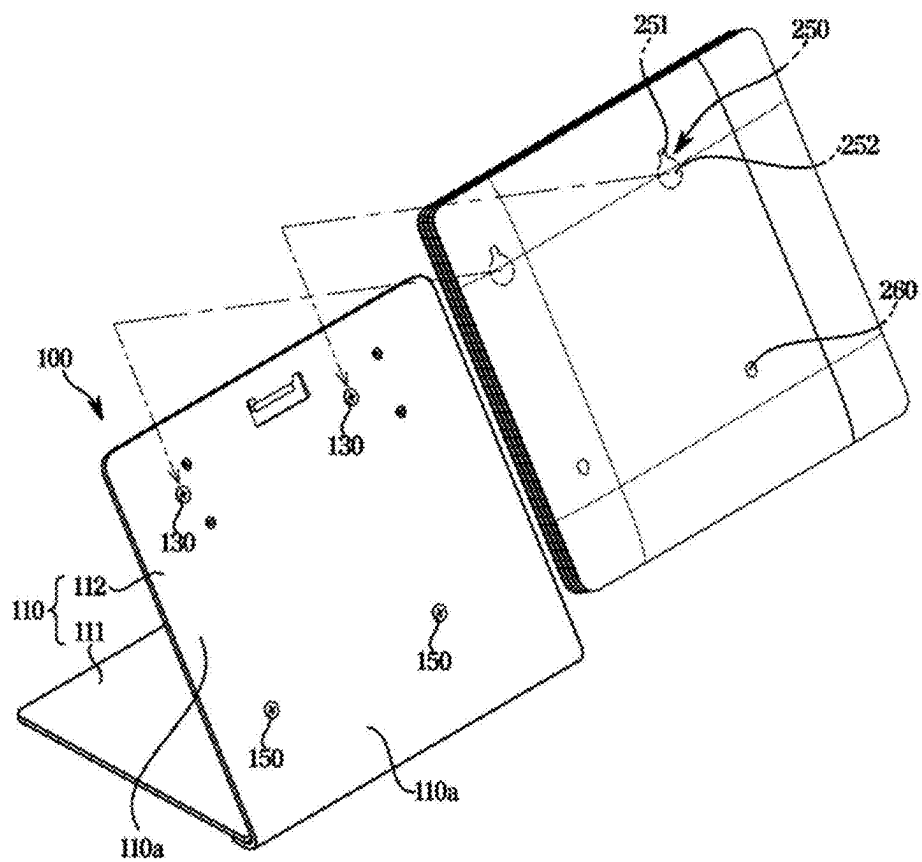


FIG. 12

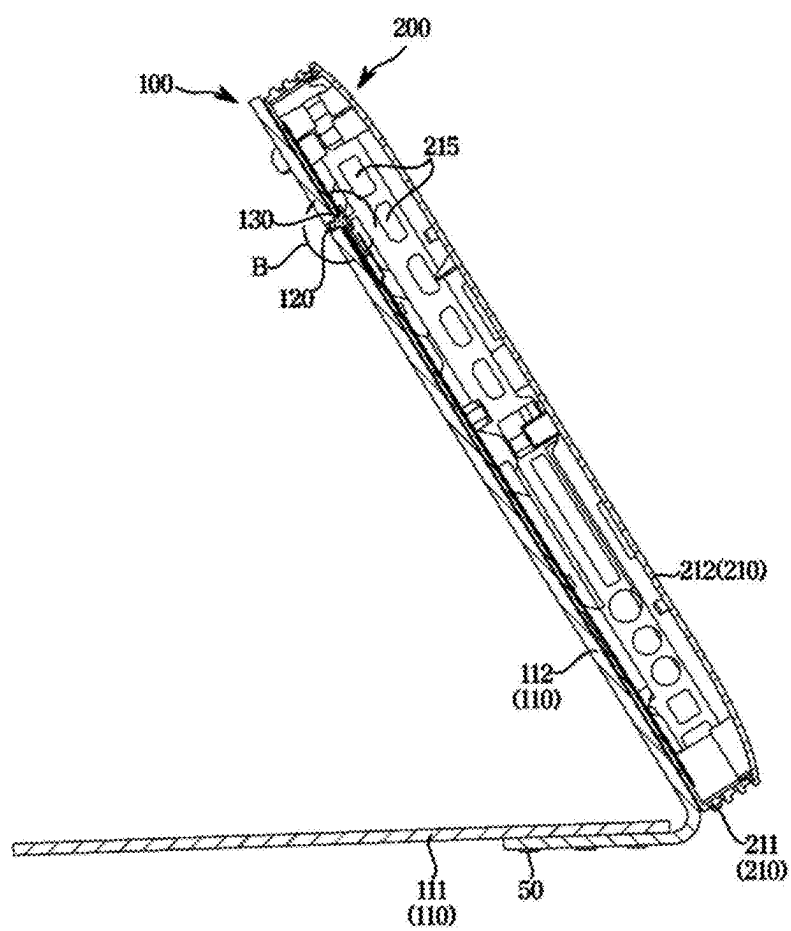


FIG. 13

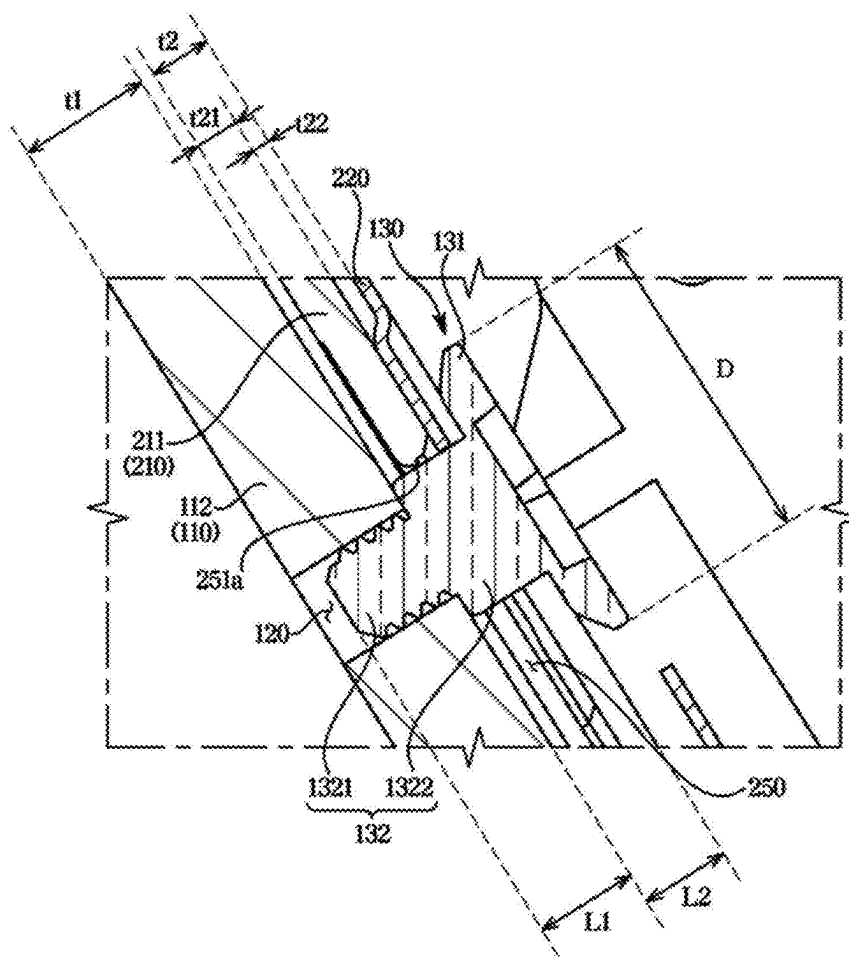


FIG. 14

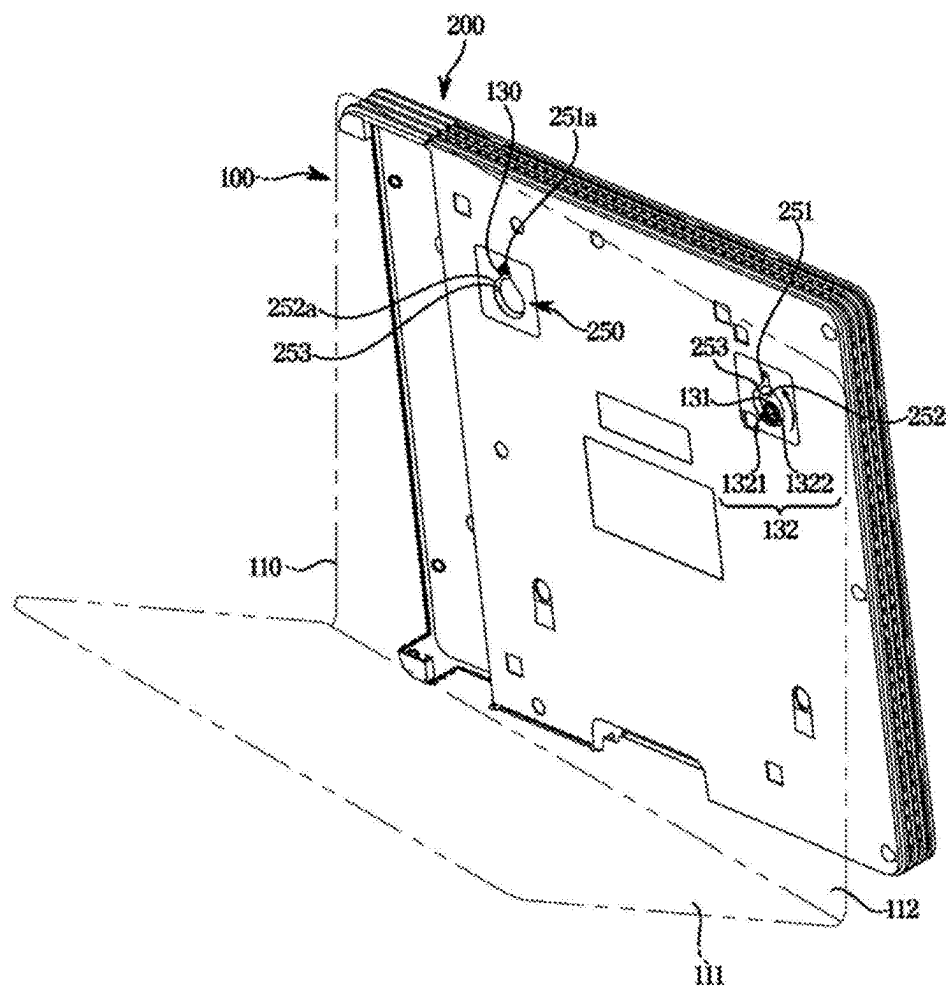


FIG. 15

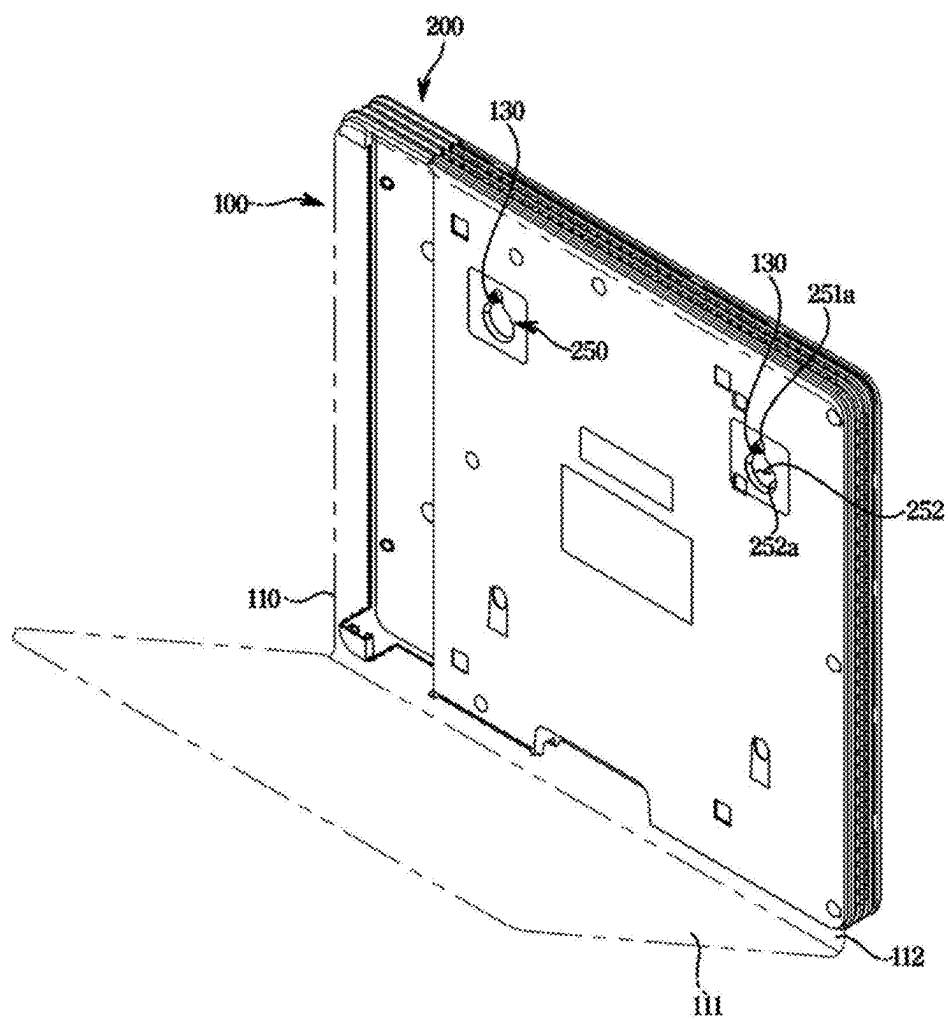


FIG. 16

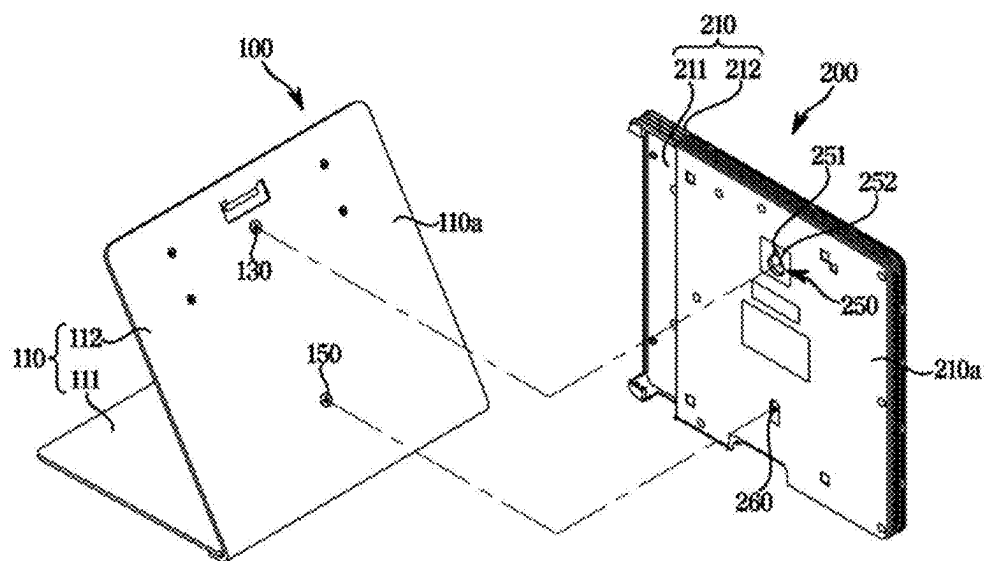


FIG. 17

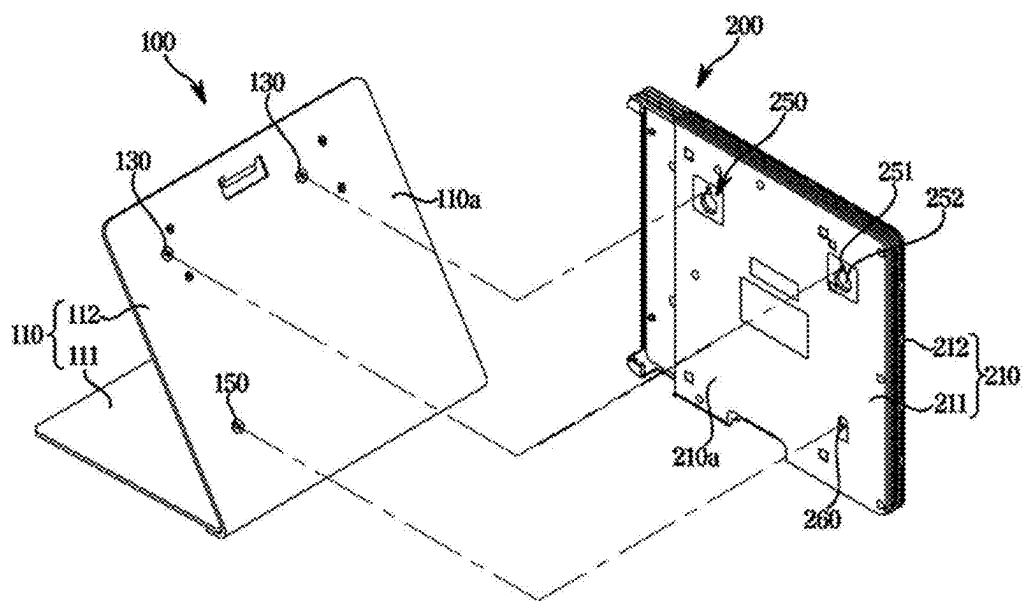


FIG. 18

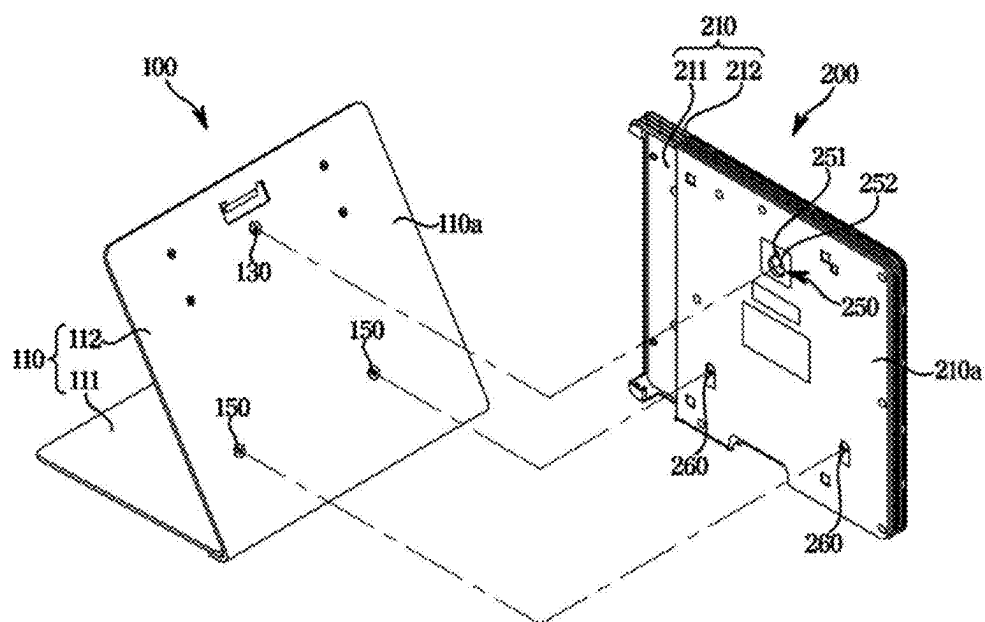


FIG. 19

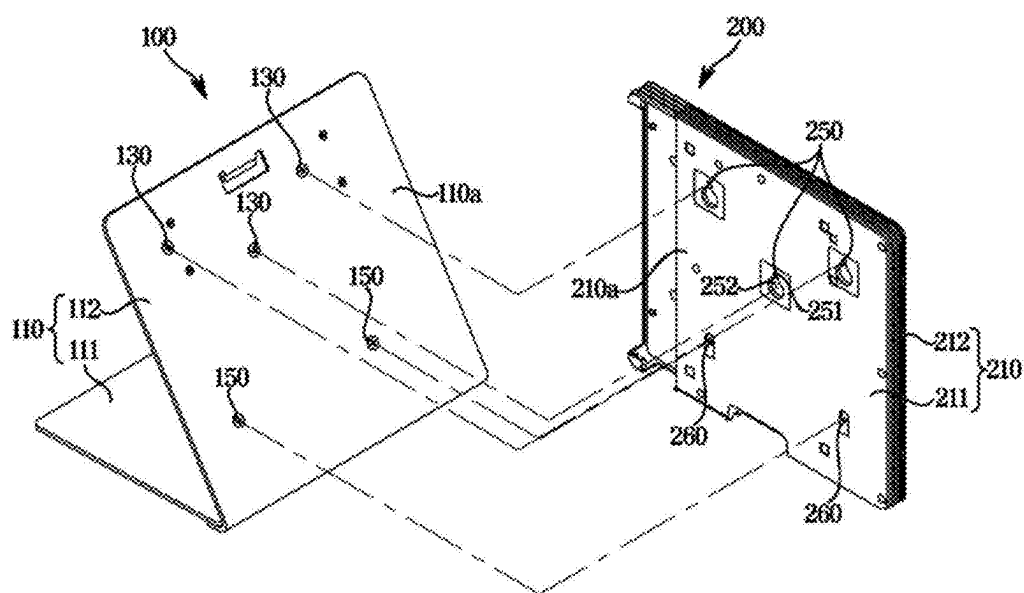
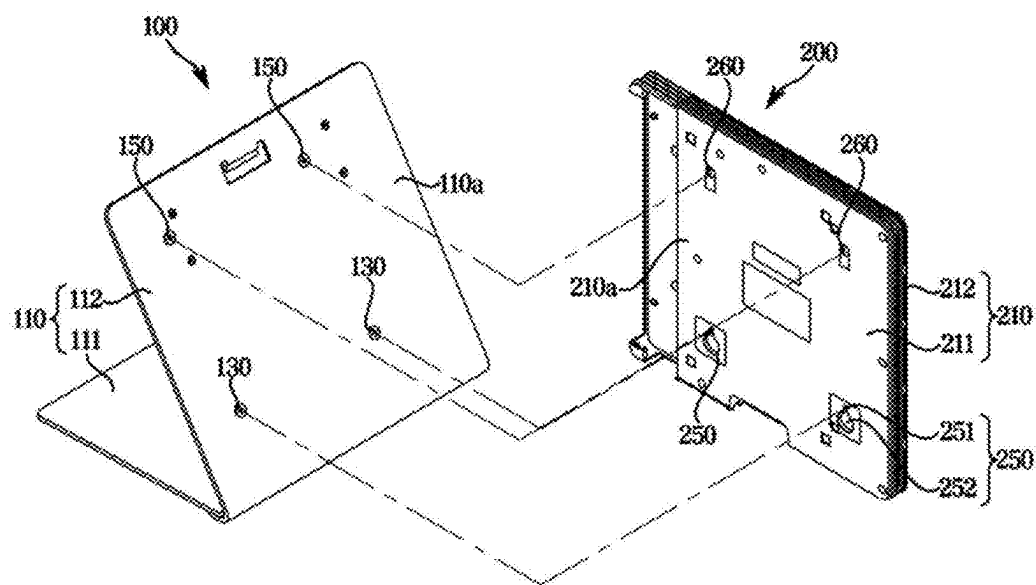


FIG. 20



STAND AND DISPLAY APPARATUS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of International Application No. PCT/KR2023/017104, filed Oct. 31, 2023, and claims foreign priority to Korean Application No. 10-2023-0001427, filed Jan. 4, 2023, and Korean Application No. 10-2023-0010994, filed Jan. 27, 2023. International Application No. PCT/KR2023/017104, Korean Application No. 10-2023-0001427, and Korean Application No. 10-2023-0010994 are incorporated herein by reference in their entireties.

TECHNICAL FIELD

[0002] The present disclosure relates to a stand and a display apparatus.

BACKGROUND ART

[0003] A display apparatus is an output device that converts electrical information into visual information and displays the visual information to a user. The display apparatus may include not only televisions and monitors, but also portable devices such as notebook PCs, smart phones, and tablet PCs.

[0004] For example, the display apparatus may include a display on which image information is displayed, a control device connectable to the display, and a stand for supporting the display and/or the control device.

[0005] In the recent display apparatus, a thickness of displays has been reduced.

DISCLOSURE

Technical Problem

[0006] The present disclosure is directed to providing a stand and a display apparatus having improved usability.

[0007] Further, the present disclosure is directed to providing a stand and a display apparatus capable of easily mounting a control device.

[0008] Further, the present disclosure is directed to providing a stand and a display apparatus capable of stably mounting a control device.

[0009] Further, the present disclosure is directed to providing a stand and a display apparatus capable of preventing separation of a control device.

[0010] Further, the present disclosure is directed to providing a stand and a display apparatus having a cost-effectiveness.

[0011] Further, the present disclosure is directed to providing a stand and a display apparatus having a slim design.

[0012] Further, the present disclosure is directed to providing a stand and a display apparatus having a simple appearance.

[0013] Additional aspects of the disclosure will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the disclosure.

Technical Solution

[0014] One aspect of the present disclosure provides a display apparatus including: a display; a stand; and a control

device. The control device is electrically connectable to the display to control the display;. The stand includes a stand body and a bolt. The control device includes a mounting hole formed on a side. The bolt may be configured to protrude from the stand body. The stand and the control device may be configured so that the bolt protruding from the stand body is insertable into the mounting hole to mount the control device on the stand. The control device mounted on the stand is supported by the stand.

[0015] Another aspect of the present disclosure provides a display apparatus including: a display; a stand including a stand body and a holder; and a control device electrically connectable to the display. The control device includes a mounting hole removably coupled to the holder. The mounting hole includes a first opening; and a second opening larger than the first opening, and extending downward from the first opening. With the holder positioned in the second opening, the control device is movable downward so that the holder is positioned within the first opening.

[0016] Another aspect of the present disclosure provides a stand to support a control device. The control device includes a case and a mounting hole formed on one side of the case. The stand includes a stand body, a coupling hole formed to penetrate the stand body, and a bolt couplable to the coupling hole and corresponding to the mounting hole. The bolt includes a first bolt body couplable to the coupling hole. The bolt includes a second bolt body extending from the first bolt body. The bolt includes a bolt head extending from the second bolt body. The second bolt body is insertable in the mounting hole. The bolt head is receivable in the case by passing through the mounting hole.

DESCRIPTION OF DRAWINGS

[0017] FIG. 1 is a perspective view of an example of a display apparatus according to one embodiment.

[0018] FIG. 2 illustrates the display apparatus illustrated in FIG. 1 when viewed from another direction.

[0019] FIG. 3 is a perspective view of an example of a stand and a control device according to one embodiment.

[0020] FIG. 4 illustrates the stand and the control device illustrated in FIG. 3 when viewed from another direction.

[0021] FIG. 5 illustrates a state in which the stand and the control device illustrated in FIG. 3 are separated.

[0022] FIG. 6 is an exploded view of an example of the control device according to one embodiment.

[0023] FIG. 7 illustrates the control device illustrated in FIG. 6 when viewed from another direction.

[0024] FIG. 8 illustrates one surface of the control device according to one embodiment.

[0025] FIG. 9 is an enlarged view of a portion A illustrated in FIG. 8.

[0026] FIG. 10 illustrates a process of coupling a holder to a stand body.

[0027] FIG. 11 illustrates a process of mounting the control device on the stand.

[0028] FIG. 12 is a cross-sectional view of an example of the stand and the control device according to one embodiment.

[0029] FIG. 13 is an enlarged view of a portion B illustrated in FIG. 12.

[0030] FIG. 14 illustrates a state in which the control device is separated from the stand.

[0031] FIG. 15 illustrates a state in which the control device illustrated in FIG. 14 returns to its original position.

[0032] FIG. 16 is a perspective view of an example of a stand and a control device according to one embodiment.

[0033] FIG. 17 is a perspective view of an example of a stand and a control device according to one embodiment.

[0034] FIG. 18 is a perspective view of an example of a stand and a control device according to one embodiment.

[0035] FIG. 19 is a perspective view of an example of a stand and a control device according to one embodiment.

[0036] FIG. 20 is a perspective view of an example of a stand and a control device according to one embodiment.

MODES OF THE INVENTION

[0037] The various embodiments and the terms used therein are not intended to limit the technology disclosed herein to specific forms, and the disclosure should be understood to include various modifications, equivalents, and/or alternatives to the corresponding embodiments.

[0038] In describing the drawings, similar reference numerals may be used to designate similar constituent elements.

[0039] A singular expression may include a plural expression unless otherwise indicated herein or clearly contradicted by context.

[0040] The expressions “A or B,” “at least one of A or/and B,” “one or more of A or/and B,” “A, B or C,” “at least one of A, B or/and C,” or “one or more of A, B or/and C,” and the like used herein may include any and all combinations of one or more of the associated listed items.

[0041] The term of “and/or” includes a plurality of combinations of relevant items or any one item among a plurality of relevant items.

[0042] Herein, the expressions “a first,” “a second,” “the first,” “the second,” etc., may simply be used to distinguish an element from other elements, but is not limited to another aspect (importance or order) of elements.

[0043] When an element (e.g., a first element) is referred to as being “(functionally or communicatively) coupled,” or “connected” to another element (e.g., a second element), the first element may be connected to the second element, directly (e.g., wired), wirelessly, or through a third element.

[0044] In this disclosure, the terms “including,” “having,” and the like are used to specify features, numbers, steps, operations, elements, components, or combinations thereof, but do not preclude the presence or addition of one or more of the features, elements, steps, operations, elements, components, or combinations thereof.

[0045] When an element is said to be “connected,” “coupled,” “supported” or “contacted” with another element, this includes not only when elements are directly connected, coupled, supported or contacted, but also when elements are indirectly connected, coupled, supported or contacted through a third element.

[0046] Throughout the description, when an element is “on” another element, this includes not only when the element is in contact with the other element, but also when there is another element between the two elements.

[0047] In the following detailed description, the terms of “front and rear direction,” “front side,” “rear side,” “lateral side,” “left and right direction,” “right side,” “left side,” “up and down direction,” “upper side,” “lower side,” and the like may be defined by the drawings, but the shape and the location of the element is not limited by the term. For example, the X direction may be defined as the front and rear direction. For example, the Y direction may be defined as the

left and right direction (lateral side). For example, the Z direction may be defined as the up and down direction (vertical direction). For example, the +X direction may be defined as the front side and the -X direction may be defined as the rear side. For example, the +Y direction may be defined as the right side and the -Y direction may be defined as the left side. For example, the +Z direction may be defined as the upper side, and the -Z direction may be defined as the lower side.

[0048] Hereinafter exemplary embodiments of the present disclosure will be described in detail with reference to the accompanying drawings.

[0049] FIG. 1 is a perspective view of an example of a display apparatus according to one embodiment. FIG. 2 illustrates the display apparatus illustrated in FIG. 1 when viewed from another direction.

[0050] The display apparatus 1 may display information, data, and the like in the form of characters, figures, graphs, images, etc. The display apparatus 1 may process image signals received from the outside and visually display the processed images.

[0051] In the following, the display apparatus 1 is exemplified as a television (TV), but is not limited thereto. For example, the display apparatus 1 may be implemented as various devices such as a PC, mobile, or digital signage.

[0052] The display apparatus 1 may include a display 10.

[0053] The display 10 may include a display panel 11 on which an image is displayed. The display 10 may include a chassis 12 for supporting and/or fixing the display panel 11. For example, the chassis 12 may cover a rear surface of the display panel 11. For example, the chassis 12 may be provided in the form of an assembly to which a plurality of components is coupled. For example, the chassis 12 may be referred to as a case, a frame, a mold, a cover, etc.

[0054] Although not shown in the drawing, the display 10 may include a light source module configured to supply light to the display panel 11. For example, the display 10 may include a light guide plate provided to guide light emitted from the light source module to the display panel 11. For example, the display 10 may include a reflective sheet arranged behind the light guide plate to reflect the light forward. For example, the display may include an optical sheet provided to improve optical characteristics of the light guided to the display panel 11. For example, the optical sheet may be arranged between the display panel 11 and the light guide plate. For example, the optical sheet may include a diffusion sheet, a prism sheet, and/or a protective sheet.

[0055] For example, the display 10 may be a light-receiving (non-emissive) display. However, the present disclosure is not limited thereto, and the display 10 may also be an emissive display.

[0056] The display apparatus 1 may include a control device 200. The control device 200 may be provided to be connectable to the display 10.

[0057] The control device 200 may be configured to supply power to the display 10. The control device 200 may transmit power supplied from the outside to the display 10. The control device 200 may be configured to connect the display 10 and an external device. The control device 200 may be configured to connect the display 10 and a peripheral device (e.g., a set-top box, audio, PC, game console, etc.). The control device 200 may perform a function of supplying power to the display 10 and connecting the display 10 and a peripheral device at the same time.

[0058] However, the present disclosure is not limited to the above-described example, and the control device 200 may be provided as a separate electronic device rather than a device for connection to the display 10. For example, the control device 200 may include various electronic devices such as a computer, a mobile phone, an MP3 player, a television, a computer monitor, a tablet, a calculator, a radio, a control box, etc. In this case, the control device 200 may be provided as a separate component rather than a component corresponding to a component of the display apparatus 1.

[0059] The control device 200 may be referred to as a control box 200, a connecting device 200, a connecting box 200, an electronic device 200, etc.

[0060] Hereinafter for convenience of description, an example in which the control device 200 is a device connectable to the display 10 will be described. However, this is merely exemplary.

[0061] A cable 20 may be provided to connect the display 10 and the control device 200. The cable 20 may be configured to transmit images, audio, video, IR signals, etc. between the display 10 and the control device 200.

[0062] For example, the display 10 and the control device 200 may be connected through a single cable 20. As a result, complex connection lines are not required between the display 10 and the control device 200, and thus an excellent appearance may be created. However, the present disclosure is not limited thereto, and in some cases, a plurality of cables 20 may be provided.

[0063] For example, a cable connection portion 30 for installing the cable 20 may be formed in the chassis 12. The cable 20 connected to the cable connection portion 30 of the display 10 may connect the display 10 and the control device 200.

[0064] The display apparatus 1 may include a stand 100 on which the control device 200 is mounted. One side of the stand 100 may be provided to support the control device 200.

[0065] For example, the other side of the stand 100 may be provided to support the display 10. For example, the stand 100 may be removably coupled to a bracket 40 provided on a rear surface of the display 10, thereby allowing the stand 100 to support the display 10.

[0066] However, the present disclosure is not limited to the above-described example, and the stand 100 may be provided so as not to support the display 10. For example, the display 10 may be provided to be hung on a wall, and the stand 100 and the control device 200 may be provided in separate spaces (e.g., a floor, a storage box, etc.). For example, the display 10 may be supported by a separate display stand. For example, the chassis 12 may further include a display stand.

[0067] Meanwhile, when the control device 200 is provided as a separate component rather than as a component of the display apparatus 1, the stand 100 may also be provided as a separate component rather than as a component of the display apparatus 1. The stand 100 may be provided as a member for mounting various electronic devices.

[0068] FIG. 3 is a perspective view of an example of a stand and a control device according to one embodiment. FIG. 4 illustrates the stand and the control device illustrated in FIG. 3 when viewed from another direction. FIG. 5 illustrates a state in which the stand and the control device illustrated in FIG. 3 are separated.

[0069] Referring to FIGS. 3 to 5, the stand 100 may be provided to mount the control device 200. The stand 100 may be provided to support the control device 200. The stand 100 may be provided to be removably coupled to the control device 200. The control device 200 may be provided to be hung on the stand 100.

[0070] The stand 100 may include a stand body 110. The stand body 110 may be provided to correspond to one side 210a of the control device 200. The stand body 110 may be provided to support the one side 210a of the control device 200. The stand body 110 may be provided to come into contact with the one side 210a of the control device 200.

[0071] For example, the stand body 110 may include a base 111 and a support body 112. The base 111 may be supported by a floor. The support body 112 may form one side 110a for supporting the control device 200. The support body 112 may extend upward from the base 111. The support body 112 may be provided at an angle relative to the base 111. However, the support body 112 may also be provided to be substantially perpendicular to the base 111.

[0072] For example, the base 111 and the support body 112 may be removably coupled. For example, the base 111 and the support body 112 may be distributed in a separated state, and then assembled. For example, the base 111 and the support body 112 may be fastened by a fastening member 50. However, the present disclosure is not limited thereto, and the base 111 and the support body 112 may be formed integrally. For example, the base 111 and the support body 112 may be formed together in one process.

[0073] The stand 100 may include a first holder 130. The first holder 130 may allow the control device 200 to be mounted on the stand 100. The first holder 130 may allow the control device 200 to be supported on the stand body 110. The first holder 130 may prevent the control device 200 supported on the stand body 110 from being separated from the stand body 110. The first holder 130 may fix the control device 200 to the stand 100.

[0074] The first holder 130 may protrude from the stand body 110. The first holder 130 may protrude from the stand body 110 toward the control device 200. The first holder 130 may protrude from the stand body 110 toward the one side 210a of the control device 200.

[0075] The first holder 130 may be provided to correspond to a mounting hole 250 of the control device 200 to be described later. The first holder 130 may be provided to be positioned within the mounting hole 250. When the control device 200 is mounted on the stand 100, the first holder 130 may be provided to be positioned within the mounting hole 250. The first holder 130 may be provided to be positioned within the mounting hole 250 to support the control device 200. A detailed description thereof will be described later.

[0076] At least one first holder 130 may be provided. For example, a single first holder 130 may be provided. For example, a plurality of the first holders 130 may be provided. In FIG. 5, it is illustrated that two first holders 130 are provided, but the number of the first holders 130 is not limited thereto.

[0077] For example, the first holder 130 may be provided as a bolt. The first holder 130 may be referred to as a first bolt 130.

[0078] The stand 100 may include a second holder 150. The second holder 150 may be provided to restrict movement of the control device 200 while the control device 200 is mounted on the stand 100. For example, the second holder

150 may be provided to prevent rotation of the control device **200** while the control device **200** is mounted on the stand **100**.

[0079] The second holder **150** may protrude from the stand body **110**. The second holder **150** may protrude from the stand body **110** toward the control device **200**. The second holder **150** may protrude from the stand body **110** toward the one side **210a** of the control device **200**.

[0080] The second holder **150** may be provided to correspond to a stopper **260** of the control device **200** to be described later. The second holder **150** may be provided to be positioned within the stopper **260**. When the control device **200** is mounted on the stand **100**, the second holder **150** may be provided to be positioned within the stopper **260**. The second holder **150** may be provided to be positioned within the stopper **260** to restrict the movement of the control device **200**. A detailed description thereof will be described later.

[0081] At least one second holder **150** may be provided. For example, a single second holder **150** may be provided. For example, a plurality of the second holders **150** may be provided. In FIG. 5, it is illustrated that two second holders **150** are provided but the number of second holders **150** is not limited thereto.

[0082] For example, the second holder **150** may be provided as a bolt. The second holder **150** may be referred to as a second bolt **150**.

[0083] The ordinal numbers “first” and “second” in the first holder **130** and the second holder **150** do not limit the configurations of the first holder **130** and the second holder **150**. For example, the first holder **130** and the second holder **150** may be named oppositely as the second holder **130** and the first holder **150**.

[0084] The control device **200** may include a mounting hole **250**. The mounting hole **250** may be formed on one side of the control device **200**. The mounting hole **250** may be formed on the one side **210a** of the control device **200** facing the stand **100**. The mounting hole **250** may be formed on the one side **210a**, which is supported by the stand **100**, of the control device **200**.

[0085] The mounting hole **250** may correspond to the first holder **130** of the stand **100**. The mounting hole **250** may be provided to be mounted on the first holder **130** of the stand **100**. The mounting hole **250** may be provided to be locked to the first holder **130** of the stand **100**. The mounting hole **250** may be removably coupled to the first holder **130** of the stand **100**. An edge of the mounting hole **250** may be provided to interfere with the first holder **130** of the stand **100**.

[0086] The control device **200** may include the stopper **260**. The stopper **260** may be arranged spaced apart from the mounting hole **250**. The stopper **260** may be formed on one side of the control device **200**. The stopper **260** may be formed on the one side **210a**, which faces the stand **100**, of the control device **200**. The stopper **260** may be formed on the one side **210a**, which is supported by the stand **100**, of the control device **200**. For example, the stopper **260** may be provided as a hole.

[0087] The stopper **260** may correspond to the second holder **150** of the stand **100**. The stopper **260** may be provided to be mounted on the second holder **150** of the stand **100**. The stopper **260** may be provided to be locked to the second holder **150** of the stand **100**. The stopper **260** may be removably coupled to the second holder **150** of the stand

100. An edge of the stopper **260** may be provided to interfere with the second holder **150** of the stand **100**. The stopper **260** may be provided to restrict the movement of the control device **200** while the first holder **130** is positioned within a first opening **251** of the mounting hole **250**. When the control device **200** moves while the second holder **150** is positioned within the stopper **260**, the second holder **150** and the edge of the stopper **260** may interfere. Accordingly, the movement of the control device **200** may be restricted.

[0088] For example, when a force is applied to the control device **200** in a state in which the control device **200** is mounted on the stand **100**, the control device **200** may rotate around the first holder **130**. For example, when a force is applied to the control device **200** in a state in which the first holder **130** is positioned within the first opening **251** of the mounting hole **250**, the control device **200** may rotate around the first holder **130**. When the second holder **150** is positioned within the stopper **260**, the rotation of the control device **200** may be prevented as the second holder **150** and the edge of the stopper **260** interfere with each other.

[0089] FIG. 6 is an exploded view of an example of the control device according to one embodiment. FIG. 7 illustrates the control device illustrated in FIG. 6 when viewed from another direction. FIG. 8 illustrates one surface of the control device according to one embodiment. FIG. 9 is an enlarged view of a portion A illustrated in FIG. 8.

[0090] The control device **200** may include a case **210**. The case **210** may form an exterior of the control device **200**. The case **210** may be provided to accommodate components for the operation of the control device **200**. For example, the case **210** may have a substantially box shape.

[0091] For example, the case **210** may include a first case **211** and a second case **212**. For example, the first case **211** and the second case **212** may be removably coupled. However, the present disclosure is not limited thereto, and the first case **211** and the second case **212** may be formed integrally.

[0092] For example, the first case **211** may form an accommodation space **213**, and the second case **212** may be provided to cover the accommodation space **213**. However, the present disclosure is not limited thereto, and alternatively, the second case **212** may form the accommodation space **213**, and the first case **211** may be provided to cover the accommodation space **213**. In addition, the accommodation space **213** may be formed as the first case **211** and the second case **212** are coupled to each other.

[0093] The mounting hole **250** may be formed on the one side **210a**, which is supported by the stand **100**, of the control device **200**. For example, the mounting hole **250** may be formed as a portion of the case **210** is cut off. For example, the first case **211** may form the mounting hole **250**.

[0094] The mounting hole **250** may include the first opening **251** and a second opening **252** extending from the first opening **251**. The second opening **252** may extend downward from the first opening **251**. A size of the second opening **252** may be greater than a size of the first opening **251**. For example, the mounting hole **250** may have a substantially gourd shape. For example, a center of the first opening **251** and a center of the second opening **252** may be provided on a substantially same vertical line.

[0095] An edge **251a** forming the first opening **251** and an edge **252a** forming the second opening **252** may be arranged to be connected. For example, a curved portion **254** may be

formed between the edge **251a** forming the first opening **251** and the edge **252a** forming the second opening **252**.

[0096] The mounting hole **250** may include a rail **253** (refer to FIG. 9). The first holder **130** may be positioned in the first opening **251** of the mounting hole **250** by being guided by the rail **253**. For example, the rail **253** may have a shape extending along the edge **252a** of the second opening **252**. For example, the rail **253** may be formed as a portion of the second opening **252** is covered. For example, the rail **253** may be formed by a cover portion **222** of an inner plate **220** to be described later. For example, the rail **253** may mean an area of the second opening **252** that is not covered by the cover portion **222**. However, the second opening **252** may not be covered by the cover portion **222**, and the rail **253** may not be formed. That is, the rail **253** may be omitted.

[0097] The stopper **260** may be formed on the one side **210a**, which is supported by the stand **100**, of the control device **200**. For example, the stopper **260** may be formed as a portion of the case **210** is cut off. For example, the first case **211** may form the stopper **260**.

[0098] In the drawing, it is illustrated that the stopper **260** has a hole having a substantially oval shape, but is not limited thereto. As long as the stopper **260** limits the movement of the control device **200** while the control device **200** is mounted on the stand **100**, the shape of the stopper **260** is not limited.

[0099] Meanwhile, in the drawing, it is illustrated that the first case **211** is supported by the stand **100** and forms the mounting hole **250** and the stopper **260**, but is not limited thereto. Unlike the drawing, the second case **212** may be provided to be supported by the stand **100** and form the mounting hole **250** and the stopper **260**.

[0100] The control device **200** may include a cooling hole **214**. The cooling hole **214** may be formed in the case **210**. The cooling hole **214** may be provided to discharge heat generated in a substrate assembly **230** to be described later to the outside of the case **210**. For example, the cooling hole **214** may be formed in the edge of the case **210**. However, as long as the cooling hole **214** discharges heat inside the control device **200**, a location of the cooling hole **214** is not limited. For example, a plurality of the cooling hole **214** may be provided.

[0101] The control device **200** may include a port hole **215**. The port hole **215** may be formed in the case **210**. The port hole **215** may be provided to correspond to a terminal **240** to be described later. Various connectors, cables, etc. may be connected to the terminal **240** through the port hole **215**. For example, a plurality of the port hole **215** may be provided. For example, the port hole **215** may have various shapes depending on the type of the port **240**.

[0102] The control device **200** may include an inner plate **220**. The inner plate **220** may be accommodated in the case **210**. The inner plate **220** may be disposed inside the case **210**. The inner plate **220** may be provided in the accommodation space **213**. For example, the inner plate **220** may be disposed between the first case **211** and the substrate assembly **230**.

[0103] For example, the inner plate **220** may provide electromagnetic interference (EMI) shielding. For example, the inner plate **220** may be provided to efficiently dissipate heat generated in the substrate assembly **230**.

[0104] The inner plate **220** may be disposed adjacent to the one side **210a**, which is supported by the stand **100**, of the control device **200**.

[0105] The inner plate **220** may include a plate body **221**. For example, the plate body **221** may be arranged to correspond to the one side **210a**, which is supported by the stand **100**, of the control device **200**. For example, the plate body **221** may have a substantially plate shape.

[0106] For example, the inner plate **220** may include a mounting hole corresponding portion **222**, **223**, and/or **224** formed in the plate body **221** to correspond to the mounting hole **250**. For example, the mounting hole corresponding portion may be provided as a component of the mounting hole **250**. For example, the mounting hole corresponding portion may be provided to form a portion of the mounting hole **250**. The mounting hole **250** may be formed by the first case **211** and the inner plate **220**. However, the inner plate **220** may not include the mounting hole corresponding portion. In this case, the mounting hole **250** may be formed by the first case **211**.

[0107] For example, the inner plate **220** may include a third opening **223** provided to correspond to the first opening **251**. For example, the third opening **223** may be provided to have substantially the same shape and size as the first opening **251** and thus the third opening **223** may overlap the first opening **251**.

[0108] For example, the inner plate **220** may include a fourth opening **224** provided to correspond to the second opening **252**. For example, the fourth opening **224** may be provided to have substantially the same shape and size as a portion of the second opening **252**, and the fourth opening **224** may overlap the second opening **252**.

[0109] For example, the inner plate **220** may include the cover portion **222**. For example, the cover portion **222** may be provided to cover a portion of the second opening **252**. For example, when the cover portion **222** covers a portion of the second opening **252**, the rail **253** may be formed. For example, the cover portion **222** may include a first cover portion **222a** and a second cover portion **222b**. The first cover portion **222a** may protrude from the plate body **221** in a direction away from the mounting hole **250**. The second cover portion **222b** may extend from the first cover portion **222a** to be substantially parallel to the plate body **221**. For example, the cover portion **222** may not be provided as a single component of the inner plate **220**, but may be provided as a single component of the first case **211**. At this time, the fourth opening **224** may be provided with substantially the same shape and size as the entire second opening **252**.

[0110] The control device **200** may include the substrate assembly **230**. The substrate assembly **230** may be accommodated in the case **210**. The substrate assembly **230** may be disposed inside the case **210**. The substrate assembly **230** may be provided in the accommodation space **213**.

[0111] For example, the substrate assembly **230** may include a substrate, and at least one electronic component mounted on the substrate. For example, the substrate assembly **230** may include a light source driver, a power driver, a transceiver, and a temperature sensor.

[0112] The control device **200** may include the port **240**. The port **240** may be connected to a cable and/or connector for connection with a peripheral device. The port **240** may be connected to a cable and/or connector for connection with the display **10**. For example, one end of the cable **20** may be

connected to the display 10, and the other end of the cable 20 may be connected to the port 240 of the control device 200. For example, the port 240 may include various types of ports such as high-definition multimedia interface (HDMI), audio optical terminal, universal serial bus (USB), local area network (LAN), etc. For example, the port 240 may be provided in the substrate assembly 230.

[0113] FIG. 10 illustrates a process of coupling a holder to a stand body. FIG. 11 illustrates a process of mounting the control device on the stand.

[0114] Referring to FIG. 10, the stand 100 may include the stand body 110. The stand 100 may include the first holder 130. The stand 100 may include the second holder 150.

[0115] The stand 100 may include a first coupling hole 120. The first coupling hole 120 may be formed in the stand body 110. For example, the first coupling hole 120 may be formed to penetrate the stand body 110.

[0116] The first holder 130 may be provided to correspond to the first coupling hole 120. The first holder 130 may be provided to be fixed to the first coupling hole 120. The first holder 130 may be removably coupled to the first coupling hole 120. For example, the first holder 130 may be screw-fastened to the first coupling hole 120.

[0117] A portion of the first holder 130 may be inserted into the first coupling hole 120. Another portion of the first holder 130 may protrude from the stand body 110.

[0118] The stand 100 may include a second coupling hole 140. The second coupling hole 140 may be formed in the stand body 110. For example, the second coupling hole 140 may be formed to penetrate the stand body 110.

[0119] The second holder 150 may be provided to correspond to the second coupling hole 140. The second holder 150 may be provided to be fixed to the second coupling hole 140. The second holder 150 may be removably coupled to the second coupling hole 140. For example, the second holder 150 may be screw-fastened to the second coupling hole 140.

[0120] A portion of the second holder 150 may be inserted into the second coupling hole 140. Another portion of the second holder 150 may protrude from the stand body 110.

[0121] The ordinal numbers “first” and “second” in the first coupling hole 120 and the second coupling hole 140 do not limit the configurations of the first coupling hole 120 and the second coupling hole 140. For example, the first coupling hole 120 and the second coupling hole 140 may be named oppositely as the second coupling hole 120 and the first coupling hole 140.

[0122] Referring to FIG. 11, the control device 200 may be mounted on the stand 100. For example, the control device 200 may move downward to allow the mounting hole 250 to be locked to the first holder 130. As the first holder 130 is provided in the first opening 251, the control device 200 may be mounted on the stand 100. As the first holder 130 is positioned in the first opening 251, the control device 200 may be hung on the stand 100.

[0123] For example, when the control device 200 moves downward in a state in which the second opening 252 of the mounting hole 250 corresponds to the first holder 130, the first holder 130 may be provided to be positioned within the first opening 251. For example, while the control device 200 is mounted on the stand 100, the first holder 130 may be arranged to be positioned within the first opening 251 through the second opening 252. For example, the first holder 130 may be guided by the edge of the mounting hole

250. The first holder 130 may be arranged to be positioned within the first opening 251 by being guided by the edge 252a forming the second opening 252. That is, as the mounting hole 250 moves while the first holder 130 is fixed, the first holder 130 may be arranged to be positioned within the first opening 251 by naturally passing through the second opening 252 due to the shape of the mounting hole 250. For example, the control device 200 may naturally move downward due to gravity.

[0124] In a state in which the first holder 130 is positioned within the first opening 251, the second holder 150 may be positioned within the stopper 260. As the control device 200 moves to allow the first holder 130 to be positioned within the mounting hole 250, the second holder 150 may also be naturally positioned within the stopper 260.

[0125] In the related art, a stand may include a bolt and nut connection structure for mounting a control device (or electronic device). However, in order to mount the control device (or electronic device) on the stand, there may be an inconvenience of having to assemble the bolt and nut. In order to separate the control device (or electronic device) mounted on the stand, there may be an inconvenience of having to disassemble the bolt and nut.

[0126] In contrast, according to the present disclosure, it may be easy to mount the control device 200 on the stand 100. By simply placing the control device 200 on the stand 100 in a state in which the mounting hole 250 and the first holder 130 correspond to each other, the mounting hole 250 may be provided to be locked to the first holder 130. That is, the first holder 130 may be naturally positioned in the first opening 251 of the mounting hole 250. In addition, according to the present disclosure, it may be easy to separate the control device 200, which is mounted on the stand 100, from the stand 100. Simply by lifting the control device 200 from the stand 100 in a state in which the first holder 130 is positioned in the first opening 251 of the mounting hole 250, the mounting hole 250 may become a state in which the mounting hole 250 is not locked to the first holder 130. That is, the first holder 130 may be naturally positioned in the second opening 252 of the mounting hole 250. In a state in which the first holder 130 and the second opening 252 correspond to each other, a user can easily separate the control device 200 from the stand 100. As a result, the usability of the stand 100 and the control device 200 may be improved.

[0127] In the related art, a stand may form a seating groove (or pocket) for accommodating a control device. For example, the stand may include a support surface for supporting the control device and an edge protruding from four corners of the support surface to form the seating groove. However, at least two or more frames may be required to form the seating groove in the stand, which may cause additional costs. In addition, because the seating groove is formed in the stand, a portion of the stand may have a protruding shape. As a result, a thickness of the stand may be increased, and the appearance of the stand may be deteriorated.

[0128] According to the present disclosure, the stand 100 does not need to form a seating groove, and may not require additional components for forming the seating groove. Accordingly, a cost-saving effect may be obtained. A material cost and assembly cost of the stand 100 may be reduced. In addition, because the seating groove is omitted from the stand 100, the stand 100 may be implemented with a slim

design. For example, the support body **112** of the stand **100** may have a substantially plate shape so as to correspond to one surface of the control device **200**. That is, the stand **100** may not have a protruding shape. Accordingly, the thickness of the stand **100** may be reduced, and the stand **100** may be implemented with a slim design.

[0129] FIG. 12 is a cross-sectional view of an example of the stand and the control device according to one embodiment. FIG. 13 is an enlarged view of a portion B illustrated in FIG. 12.

[0130] Referring to FIGS. 12 and 13, the control device **200** may be supported by the stand body **110**. The control device **200** may be supported by the support body **112**.

[0131] The first holder **130** may include a holder body **132**. The first holder **130** may include a holder head **131**.

[0132] The holder body **132** may include a first holder body **1321**. The first holder body **1321** may be removably coupled to the first coupling hole **120**. The first holder body **1321** may be provided within the first coupling hole **120**. The first holder body **1321** may be inserted into the first coupling hole **120**.

[0133] For example, a screw thread may be formed on an outer circumferential surface of the first holder body **1321**. For example, the first holder body **1321** may be screw-coupled to the first coupling hole **120**. For example, the first coupling hole **120** may include screw threads (not shown) that are provided to engage with the screw threads of the first holder body **1321**. However, the present disclosure is not limited thereto, and the first holder body **1321** may be fastened to the first coupling hole **120** in various ways.

[0134] For example, the first holder body **1321** may be fixed to the stand body **110** so as to support a weight of the control device **200**.

[0135] For example, a length **L1** of the first holder body **1321** may be less than a thickness **t1** of one side, in which the first coupling hole **120** is formed, of the stand body **110**. It is possible to prevent that the first holder body **1321** passes through the first coupling hole **120** and protrudes from the stand body **110**.

[0136] The holder body **132** may include a second holder body **1322**. The second holder body **1322** may extend from the first holder body **1321**. The second holder body **1322** may protrude from the stand body **110**. For example, when the first holder body **1321** is coupled to the first coupling hole **120**, the second holder body **1322** may extend from the first holder body **1321** and protrude from the stand body **110**.

[0137] For example, the second holder body **1322** may be provided within the mounting hole **250**. For example, the second holder body **1322** may be provided to be positioned within the first opening **251**. For example, the second holder body **1322** may be provided to be locked to the mounting hole **250**. For example, the second holder body **1322** may be provided to interfere with the edge of the mounting hole **250**. For example, the second holder body **1322** may be provided to interfere with the edge **251a** of the first opening **251**. For example, the second holder body **1322** may be provided to support an upper portion of the edge **251a** of the first opening **251**. For example, a screw thread may not be formed on an outer circumferential surface of the second holder body **1322**. However, the present disclosure is not limited thereto, and in some cases, a screw thread may be formed on the outer circumferential surface of the second holder body **1322**.

[0138] For example, the second holder body **1322** may be provided to have a length that allows the control device **200** to be locked thereto.

[0139] For example, a length **L2** of the second holder body **1322** may be greater than a thickness **t2** of one side, on which the mounting hole **250** is formed, of the control device **200**. For example, the length **L2** of the second holder body **1322** may be greater than a thickness **t21** of the first case **211**. For example, the length **L2** of the second holder body **1322** may be greater than a thickness **t22** of the inner plate **220**. The second holder body **1322** may be provided within the mounting hole **250** to support the control device **200**. The second holder body **1322** may support at least a portion of the edge **251a** of the first opening **251**.

[0140] For example, a diameter of the second holder body **1322** may be greater than a maximum diameter of the first holder body **1321**. For example, the diameter of the second holder body **1322** may be greater than a diameter of the first coupling hole **120**. Accordingly, the second holder body **1322** may be provided to form a locking protrusion so as not to be inserted into the first coupling hole **120**.

[0141] The holder head **131** may extend from the holder body **132**. The holder head **131** may extend from the second holder body **1322**. The holder head **131** may be arranged to pass through the mounting hole **250** and be positioned within the case **210** of the control device **200**. For example, the holder head **131** may be provided to pass through the second opening **252** and positioned within the case **210**.

[0142] For example, a diameter **D** of the holder head **131** may be smaller than the size of the second opening **252** of the mounting hole **250**. The holder head **131** may pass through the second opening **252** and be provided on the inside of the case **210** of the control device **200**.

[0143] For example, the diameter **D** of the holder head **131** may be larger than the size of the first opening **251** of the mounting hole **250**. The holder head **131** may be provided not to pass through the first opening **251** in a state in which the second holder body **1322** is provided within the first opening **251**. Accordingly, when the control device **200** is mounted on the stand **100**, the mounting hole **250** may not be easily separated from the first holder **130**.

[0144] Meanwhile, the holder body **132** may be referred to as a bolt body **132**. The first holder body **1321** may be referred to as a first bolt body **1321**. When a screw thread is formed on the first holder body **1321**, the first holder body **1321** may be referred to as a screw portion **1321**. The second holder body **1322** may be referred to as a second bolt body **1322**. The second holder body **1322** may be referred to as a shank portion **1322**. The holder head **131** may be referred to as a bolt head **131**.

[0145] However, although not shown in the drawing, the second holder **150** may have the same configuration and shape as the first holder **130**. The second holder **150** may have substantially the same configuration as the holder body **132** of the first holder **130** described above. The second holder **150** may include substantially the same configuration as the holder head **131** of the first holder **130** described above.

[0146] FIG. 14 illustrates a state in which the control device is separated from the stand. FIG. 15 illustrates a state in which the control device illustrated in FIG. 14 returns to its original position.

[0147] Referring to FIG. 14, the control device 200 may deviate from its original position by an external force while mounted on the stand 100.

[0148] The control device 200 may be applied with external forces due to various factors. For example, when a user connects the control device 200 to the display 10 and/or a peripheral device, a force may be applied to the control device 200. For example, when the control device 200 collides with and/or interferes with another component (e.g., a peripheral device, a structure such as a wall, etc.), a force may be applied to the control device 200.

[0149] For example, a state in which the control device 200 is provided in the original position may mean a state in which the first holder 130 is provided in the first opening 251 of the mounting hole 250. For example, the state in which the control device 200 is provided in the original position may mean a state in which the second holder body 1322 is positioned within the first opening 251. For example, when the control device 200 is provided in the original position, the control device 200 may be stably mounted on the stand 100.

[0150] For example, a state in which the control device 200 deviates from the original position may mean a state in which the first holder 130 is positioned in the second opening 252 of the mounting hole 250. For example, the state in which the control device 200 deviates from the original position may mean a state in which the second holder body 1322 is positioned within the second opening 252. For example, when a force is applied to the control device 200, the first holder 130 may come out of the first opening 251 and be positioned within the second opening 252 as the mounting hole 250 moves.

[0151] As mentioned above, the mounting hole 250 may include the first opening 251 and the second opening 252 provided below the first opening 251 and larger than the first opening 251. The edge 251a of the first opening 251 and the edge 252a of the second opening 252 may be provided to be smoothly connected. Due to the shape of the mounting hole 250, the control device 200 may be provided to easily return to the original position even when the control device 200 deviates from the original position.

[0152] As the control device 200 moves downward by gravity in a state in which the first holder 130 is provided in the second opening 252 of the mounting hole 250, the mounting hole 250, which is a component of the control device 200, may also move downward. As the mounting hole 250 moves downward, the first holder 130 may be provided to be guided by the edge of the mounting hole 250 (refer to an arrow in FIG. 14). For example, the first holder 130 may be provided to be guided by the edge 252a of the second opening 252. In other words, as the mounting hole 250 moves while the first holder 130 is fixed, the first holder 130 may be naturally positioned within the first opening 251 which is narrower than the second opening 252.

[0153] Referring to FIG. 15, the control device 200 may be returned to the original position. The first holder 130 may be provided to be positioned within the first opening 251. The second holder body 1322 may be provided to be positioned within the first opening 251.

[0154] In the related art, a stand may form a seating groove (or pocket) for receiving a control device. For example, the control device may be placed in the seating groove. For example, when a force is applied to the control device provided in the seating groove of the stand, the

control device may be separated from the seating groove of the stand and fall from the stand. For example, the control device may be damaged by the impact when the control device falls from the stand.

[0155] In contrast, according to the present disclosure, even when the control device 200 is applied with external forces while being mounted on the stand 100, the control device 200 may not be easily separated from the stand 100. Even when the control device 200 is separated from the original position, the control device 200 may be easily returned to the original position. For example, even when the first holder 130 is separated from the first opening 251, the first holder 130 may be arranged to be positioned within the first opening 251 again as the control device 200 moves.

[0156] FIG. 16 is a perspective view of an example of a stand and a control device according to one embodiment.

[0157] The same reference numerals may be assigned to components the same as the components of the stand and the control device illustrated in FIGS. 1 to 15, and a description thereof will be omitted.

[0158] Referring FIG. 16, a stand 100 may include a single first holder 130. For example, the first holder 130 may be arranged substantially at a center portion along the left and right direction (Y direction) of the stand 100. However, the present disclosure is not limited thereto, and the first holder 130 may be arranged at a biased position from the center portion of the stand 100. The stand 100 may include a single second holder 150. For example, the second holder 150 may be arranged substantially at the center portion along the left and right direction (Y direction) of the stand 100. However, the present disclosure is not limited thereto, and the second holder 150 may be arranged at a biased position from the center portion of the stand 100.

[0159] Referring to FIG. 16, a control device 200 may include a single mounting hole 250 corresponding to the single first holder 130. The control device 200 may include a single stopper 260 corresponding to the single second holder 150.

[0160] FIG. 17 is a perspective view of an example of a stand and a control device according to one embodiment.

[0161] The same reference numerals may be assigned to components the same as the components of the stand and the control device illustrated in FIGS. 1 to 15, and a description thereof will be omitted.

[0162] Referring to FIG. 17, a stand 100 may include a plurality of first holders 130. For example, the plurality of first holders 130 may be arranged to be spaced apart from each other substantially in the left and right direction (Y direction). In FIG. 17, it is illustrated that two first holders 130 are provided, but is not limited thereto. Three or more first holders 130 may be provided. The stand 100 may include a single second holder 150. For example, the second holder 150 may be provided to be positioned on the same vertical line as one of the plurality of first holders 130. However, the present disclosure is not limited thereto, and the second holder 150 may be provided to be positioned between one of the plurality of first holders 130 and another one of the plurality of first holders 130.

[0163] Referring to FIG. 17, a control device 200 may include a plurality of mounting holes 250 corresponding to the plurality of first holders 130. The control device 200 may include a single stopper 260 corresponding to the single second holder 150.

[0164] FIG. 18 is a perspective view of an example of a stand and a control device according to one embodiment.

[0165] The same reference numerals may be assigned to components the same as the components of the stand and the control device illustrated in FIGS. 1 to 15, and a description thereof will be omitted.

[0166] Referring to FIG. 18, a stand 100 may include a single first holder 130. For example, the first holder 130 may be arranged substantially at the center portion along the left and right direction (Y direction) of the stand 100. However, the present disclosure is not limited thereto, and the first holder 130 may be arranged at a biased position from the center portion of the stand 100. The stand 100 may include a plurality of second holders 150. For example, the plurality of second holders 150 may be arranged to be spaced apart from each other substantially in the left and right direction (Y direction). In FIG. 18, it is illustrated that two second holders 150 are provided, but is not limited thereto. Three or more second holders 150 may be provided. For example, the first holder 130 may be provided to be positioned between one of the plurality of second holders 150 and another one of the plurality of second holders 150. However, the present disclosure is not limited thereto, and the first holder 130 may be arranged to be positioned on the same vertical line as one of the plurality of second holders 150.

[0167] Referring to FIG. 18, a control device 200 may include a single mounting hole 250 corresponding to the single first holder 130. The control device 200 may include a plurality of stoppers 260 corresponding to the plurality of second holders 150.

[0168] FIG. 19 is a perspective view of an example of a stand and a control device according to one embodiment.

[0169] The same reference numerals may be assigned to components the same as the components of the stand and the control device illustrated in FIGS. 1 to 15, and a description thereof will be omitted.

[0170] Referring to FIG. 19, a stand 100 may include a plurality of first holders 130. For example, some of the plurality of first holders 130 may be arranged in a first row, and other of the plurality of first holders 130 may be arranged in a second row. For example, some of the plurality of first holders 130 may be arranged in a first column, and other of the plurality of first holders 130 may be arranged in a second column. In FIG. 19, it is illustrated that three first holders 130 are provided, but is not limited thereto.

[0171] For example, as illustrated in FIG. 19, when three first holders 130 are provided, two first holders 130 may be arranged in the same row, and the remaining one first holder 130 may be arranged in a different row. For example, as illustrated in FIG. 19, each of the plurality of first holders 130 may be arranged in a different column. However, this is merely exemplary, and the positions of the first holders 130 are not limited thereto. For example, unlike FIG. 19, all three first holders 130 may be arranged in the same row. For example, unlike FIG. 19, all three first holders 130 may be arranged in the same column.

[0172] Referring to FIG. 19, the stand 100 may include a plurality of second holders 150. For example, some of the plurality of second holders 150 may be arranged in a first row, and other of the plurality of second holders 150 may be arranged in a second row. For example, some of the plurality of second holders 150 may be arranged in a first column, and other of the plurality of second holders 150 may be arranged

in a second column. In FIG. 19, it is illustrated that two second holders 150 are provided, but is not limited thereto.

[0173] For example, as illustrated in FIG. 19, a plurality of second holders 150 may be arranged to be spaced apart from each other substantially in the left and right direction (Y direction). For example, as illustrated in FIG. 19, when two second holders 150 are provided, the two second holders 150 may be arranged in the same row. For example, as illustrated in FIG. 19, the two second holders 150 may be arranged in different columns. However, this is merely exemplary, and the positions of the second holders 150 are not limited. For example, unlike FIG. 19, the two second holders 150 may be arranged in different rows. For example, unlike FIG. 19, the two second holders 150 may be arranged in the same column.

[0174] Referring to FIG. 19, the control device 200 may include a plurality of mounting holes 250 corresponding to the plurality of first holders 130. The control device 200 may include a plurality of stoppers 260 corresponding to the plurality of second holders 150.

[0175] FIG. 20 is a perspective view of an example of a stand and a control device according to one embodiment.

[0176] The same reference numerals may be assigned to components the same as the components of the stand and the control device illustrated in FIGS. 1 to 15, and a description thereof will be omitted.

[0177] Referring to FIG. 20, a stand 100 may include at least one first holder 130. The stand 100 may include at least one second holder 150. For example, the first holder 130 may be positioned spaced downward from the second holder 150. For example, the first holder 130 may be positioned below the second holder 150. For example, the second holder 150 may be positioned spaced upward from the first holder 130. For example, the second holder 150 may be positioned above the first holder 130.

[0178] Referring to FIG. 20, a control device 200 may include at least one mounting hole 250 corresponding to the at least one first holder 130. The control device 200 may include at least one stopper 260 corresponding to the at least one second holder 150. For example, the mounting hole 250 may be positioned spaced downward from the stopper 260. For example, the mounting hole 250 may be positioned below the stopper 260. For example, the stopper 260 may be positioned spaced upward from the first holder 130. For example, the stopper 260 may be positioned above the first holder 130.

[0179] Also, although not shown in the drawings, the contents described in FIG. 20 may also be applied to the examples shown in FIGS. 16 to 19. For example, the positions of the first holder 130 and the second holder 150 of the stands shown in FIGS. 16 to 19 may be provided oppositely. For example, the positions of the mounting hole 250 and the stopper 260 of the control device 200 shown in FIGS. 16 to 19 may be provided oppositely.

[0180] The display apparatus 1 according to one embodiment may include the display 10, the control device 200 connectable to the display, and the stand 100 configured to support the control device. The control device may include the mounting hole 250 formed on one side thereof facing the stand. The stand may include the stand body 110; and the bolt 130 protruding from the stand body and configured to be inserted into the mounting hole and to support the control device on the stand body to prevent the control device from being separated from the stand body. According to the

present disclosure, the control device **200** may be easily mounted on the stand **100**. The control device **200** may be stably mounted on the stand **100**. The control device **200** may not be easily separated from the stand **100** while the control device is mounted on the stand **100**.

[0181] The mounting hole may include the first opening **251**, and the second opening **252** extending downward from the first opening and larger than the first opening.

[0182] The bolt **130** may be positioned within the first opening **251** through the second opening **252** while the control device is mounted on the stand.

[0183] The bolt **130** may be positioned within the first opening **251** as the control device moves downward, with the second opening being aligned with the bolt.

[0184] The stand may further include the coupling hole **120** formed to penetrate the stand body. The bolt may be fixable to the coupling hole.

[0185] The bolt may include the first bolt body **1321** removably coupled to the coupling hole. The bolt may include the second bolt body **1332** extending from the first bolt body and protruding from the stand body, the second bolt body provided to allow the mounting hole to be locked thereto

[0186] The screw thread may be formed on the outer circumferential surface of the first bolt body.

[0187] The length **L1** of the first bolt body may be less than the thickness **t1** of one side, in which the coupling hole is formed, of the stand body.

[0188] The length **L2** of the second bolt body may be greater than the thickness **t2** of one side, in which the mounting hole is formed, of the control device.

[0189] The bolt may further include the bolt head **131** extending from the second bolt body. The bolt head **131** may be provided to be received inside the control device through the mounting hole while the control device is mounted on the stand.

[0190] The diameter **D** of the bolt head may be smaller than the size of the second opening and larger than the size of the first opening.

[0191] The bolt may be the first bolt **130**. The stand may further include the second bolt **150** spaced apart from the first bolt and protruding from the stand body. The control device may further include the stopper **260** provided to be locked to the second bolt to limit movement of the control device while the bolt is positioned within the mounting hole.

[0192] The stand body may include the base **111**, and the support body **112** extending obliquely from the base. The support body **112** may be provided to have a plate shape corresponding to one surface of the control device.

[0193] The control device may be configured to supply power to the display or configured to connect the display and an external device.

[0194] One side of the stand may be provided to support the control device, and the other side of the stand may be provided to support the display.

[0195] The display apparatus **1** according to one embodiment may include the display **10**, the control device **200** connectable to the display, and the stand **100**. The stand **100** may include the stand body **110** provided to support one side of the control device, and the holder **130** protruding from the stand body. The control device may include the mounting hole **250** removably coupled to the holder. The mounting hole **250** may include the first opening **251**, and the second opening **252** extending downward from the first opening and

larger than the first opening. The control device may be positioned within the first opening while moving downward in a state in which the second opening and the holder correspond to each other.

[0196] The stand may further include the coupling hole **120** formed to penetrate the stand body and provided to allow a portion of the holder to be inserted thereto.

[0197] The holder may be the first holder **130**, and the stand may further include the second holder **150** spaced apart from the first holder and protruding from the stand body. The control device may further include the stopper **260** that is connectable to the second holder to limit movement of the control device while the first holder is positioned within the first opening.

[0198] The stand **100** according to one embodiment may be provided to support the control device including the case **210** and the mounting hole **250** formed on one side of the case. The stand **100** may include the stand body **110**, the coupling hole **120** formed to penetrate the stand body, and the bolt **130** provided to be fixed to the coupling hole and provided to correspond to the mounting hole. The bolt may include the first bolt body **1321** provided in the coupling hole, the second bolt body **1322** extending from the first bolt body, and the bolt head **131** extending from the second bolt body. The second bolt body may be provided in the mounting hole. The bolt head may be provided in the case by passing through the mounting hole.

[0199] The length **L1** of the first bolt body may be less than the thickness **t1** of one side, in which the coupling hole is formed, of the stand body. The length **L2** of the second bolt body may be greater than the thickness **t2** of one side, in which the mounting hole is formed, of the case.

[0200] Additional aspects of the disclosure will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the disclosure.

[0201] While the present disclosure has been particularly described with reference to exemplary embodiments, it should be understood by those of skilled in the art that various changes in form and details may be made without departing from the spirit and scope of the present disclosure.

1. A display apparatus comprising:

a display;

a stand including a stand body, and a bolt configured to protrude from the stand body; and

a control device electrically connectable to the display to control the display, the control device including a mounting hole formed on a side of the control device, wherein the stand and the control device are configured so that the bolt protruding from the stand body is insertable into the mounting hole to mount the control device on the stand, and the control device mounted on the stand is supported by the stand.

2. The display apparatus of claim 1, wherein the mounting hole includes:

a first opening, and

a second opening larger than the first opening and extending downward from the first opening.

3. The display apparatus of claim 2, wherein the bolt is configured to be positioned within the first opening while the control device is mounted on the stand.

4. The display apparatus of claim 2, wherein the stand and the control device are configured so that, to mount the control device on the stand,

the bolt protruding from the stand body is configured to be aligned with the second opening,

the bolt aligned with the second opening is insertable into the second opening, and

with the bolt inserted into the second opening, the control device is movable downward so that the bolt is positioned within the first opening.

5. The display apparatus of claim **1**, wherein the stand further includes a coupling hole penetrating the stand body and through which the bolt is couplable to couple the bolt to the stand body.

6. The display apparatus of claim **5**, wherein the bolt includes:

a first bolt body couplable to the coupling hole, and

a second bolt body extending from the first bolt body,

so that when the first bolt body is coupled to the coupling hole, the second bolt body is configured to be insertable into the mounting hole to lock the second bolt body to the mounting hole.

7. The display apparatus of claim **6**, wherein a screw thread is formed on an outer circumferential surface of the first bolt body.

8. The display apparatus of claim **6**, wherein a length of the first bolt body is less than a thickness of the stand body where the coupling hole penetrates the stand body.

9. The display apparatus of claim **6**, wherein a length of the second bolt body is greater than a thickness of the side of the control device on which the mounting hole is formed.

10. The display apparatus of claim **6**, wherein

the bolt further includes a bolt head extending from the second bolt body, and

the stand and the control device are configured so that the bolt head is receivable inside the control device through the mounting hole while the control device is mounted on the stand.

11. The display apparatus of claim **10**, wherein the mounting hole includes:

a first opening, and

a second opening larger than the first opening and extending downward from the first opening, and

a diameter of the bolt head is smaller than a size of the second opening and larger than a size of the first opening.

12. The display apparatus of claim **1**, wherein:

the bolt is a first bolt,

the stand further includes a second bolt spaced apart from the first bolt and protruding from the stand body,

the control device further includes a stopper, and

the stand and the control device are configured so that the stopper is lockable to the second bolt to limit movement of the control device while the first bolt is positioned within the mounting hole.

13. The display apparatus of claim **1**, wherein the stand body includes:

a base, and

a support body extending obliquely from the base and having a plate shape corresponding to a surface of the control device.

14. The display apparatus of claim **1**, wherein the control device is configured to supply power to the display or to connect the display and an external device.

15. The display apparatus of claim **1**, wherein one side of the stand supports the control device, and another side of the stand supports the display.

* * * * *