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(54) **DISPLAY MOUNTING STRUCTURE AND CLOTHES TREATMENT EQUIPMENT**

(57) Embodiments of the present invention relate to a display mounting structure and clothes treatment equipment. The display mounting structure comprises a front sealing door, a support and a light guide member; the light guide member is located between the support and the front sealing door; a light-transmissive hole is formed in the front sealing door, and a light guide protrusion which can extend into the light-transmissive hole is provided on the light guide member, so that light emitted by a light-emitting member mounted on the support is guided out through the light guide protrusion; the support is provided with first mounting parts, the front sealing door is provided with second mounting parts, and the support is connected to the front sealing door by means of cooperation of the first mounting part and the second mounting part, so as to abut the light guide member against the front sealing door, so that the light guide member is stably sandwiched between the front sealing door and the support. According to such a design, the phenomenon that the light guide member is scratched is avoided to a certain extent, and the rejection rate of the light guide member caused by scratching is further reduced. In addition, the need for the connection structure between

the light guide member and the support is eliminated, and the assembly time is shortened, thereby improving the assembly efficiency.

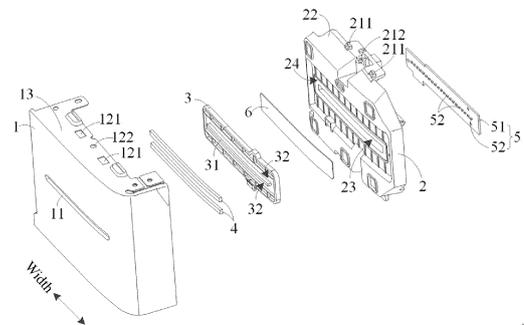


FIG. 1

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to Chinese Patent Application No. 202210615520.8, filed on May 31, 2022 and entitled with "DISPLAY MOUNTING STRUCTURE AND CLOTHES TREATMENT EQUIPMENT", and Chinese Patent Application No.20221364464.7, filed on May 31, 2022 and entitled with "DISPLAY MOUNTING STRUCTURE AND CLOTHES TREATMENT EQUIPMENT", the entire contents of which are hereby incorporated by reference in their entirety.

TECHNICAL FIELD

[0002] Embodiments of the present application relate to the technical field of household electrical appliances, and in particular relate to a display mounting structure and a laundry treatment device.

BACKGROUND

[0003] Taking a washing machine as an example, in a related art, a front closing door of the washing machine is provided with a light-transmitting port, a display structure for displaying a working state of the washing machine is mounted inside the light-transmitting port, and the display structure generally comprises a support, a light-emitting member, and a light guide member.

[0004] However, in the related art, during an assembly, the light guide member is first mounted on the support, that is, the light guide member and the support are first combined into an integral structure, and then the combined integral structure is mounted on the front closing door, which may lead to a problem that the light guide member is easily scratched and a scrap rate is high.

SUMMARY

[0005] The technical problem at least to be solved by the present application is the problem that the light guide member is easily scratched and the scrap rate is high when a display mounting structure of a conventional laundry treatment device is assembled.

[0006] In order to solve the above technical problem, according to a first aspect, embodiments of the present application provide a display mounting structure for a laundry treatment device. The display mounting structure comprises a front closing door, a support, and a light guide member. The light guide member is located between the support and the front closing door, the front closing door is provided with a light-transmitting hole, the light guide member is provided with a light guide protrusion capable of extending into the light-transmitting hole to allow light emitted from a light-emitting member mounted on the support to be guided out through the

light guide protrusion. The support is provided with first mounting portion and the front closing door is provided with second mounting portion. The support is connected to the front closing door through a cooperation of the first mounting portion and the second mounting portion, to allow the light guide member to abut against the front closing door.

[0007] In the display mounting structure provided by the embodiment of the present application, the light guide member and the support sequentially cooperate with the front closing door, that is, the light guide protrusion of the light guide member is first inserted into the light-transmitting hole of the front closing door, to allow the light guide member to be prepositioned on the front closing door.

15 The support is then mounted on the front closing door through a cooperation of the first mounting portion and the second mounting portion, and in the meantime, the light guide member abuts against the front closing door through the support, to allow the light guide member to be stably sandwiched between the front closing door and the support. During the assembly, the light guide member is prepositioned on the front closing door first, then the support is assembled on the front closing door, and the light guide member abuts against the front closing door through the support after the support is assembled in place. In this way, the phenomenon that the light guide member is scratched is avoided to a certain extent, and the scrap rate of the light guide member due to the scratching is further reduced. In addition, the connection structure and the assembly time of the light guide member and the support are saved, and the assembly efficiency is improved.

[0008] Optionally, a waterproof seal is provided at a joint of the light-transmitting hole and the light guide member.

[0009] By providing the waterproof seal at the joint of the light-transmitting hole and the light guide member, the water vapor or the liquid water can be prevented from entering into the display mounting structure through the light-transmitting hole to a certain extent to damage parts. In this way, the waterproof performance is improved, the service life of the display mounting structure and the device using the display mounting structure is prolonged.

[0010] Optionally, the waterproof seal comprises two waterproof strips, in which one of the two waterproof strips is located above the light guide protrusion, and another one of the two waterproof strips is located below the light guide protrusion.

[0011] Such an arrangement not only facilitates the assembly, but also further improves the waterproof performance of the display mounting structure.

[0012] Optionally, the light guide protrusion is an elongated protrusion extending in a width direction of the laundry treatment device, the light-transmitting hole is an elongated hole which allows the elongated protrusion to extend into, and the two waterproof strips extend in the width direction of the laundry treatment device.

[0013] Such an arrangement improves the safety of repositioning the light guide member on the front closing door, further avoids the phenomenon that the light guide member is scratched, and reduces the scrap rate. In addition, the waterproof seal extends in the width direction of the laundry treatment device, and the shape of the waterproof seal matches with the shape of the light guide protrusion, which further improves the waterproof sealing performance of the joint of the light guide protrusion and the light-transmitting hole, and improves the service life of the display mounting structure provided by the embodiments of the present application.

[0014] Optionally, a side of the light guide member facing towards the front closing door is provided with an accommodating groove, the waterproof seal being located in the accommodating groove, a part of the waterproof seal projecting out of a notch of the accommodating groove to abut against the front closing door.

[0015] With such an arrangement, a part of the waterproof seal is accommodated in the accommodating groove, which not only facilitates the assembly of the waterproof seal, but also improves the stability of a connection of the waterproof seal and the light guide member. In addition, the thickness of the waterproof seal can be increased without changing a relative position of the light guide member and the front closing door, and the waterproofing performance can be further improved.

[0016] Optionally, a bent edge extending towards the support is provided on an inner side of the light-transmitting hole, a rib is provided at a periphery of the accommodating groove, the bent edge and the rib jointly limiting the waterproof seal.

[0017] With such an arrangement, on the basis of accommodating the waterproof seal in the accommodating groove, the waterproof seal can be jointly limited by the bent edge provided on the inner side of the light-transmitting hole and the rib provided at the periphery of the accommodating groove, which further improves the stability of the connection of the waterproof seal and the accommodating groove, and thus improves the airtightness between the light guide member and the front closing door.

[0018] Optionally, the waterproof seal is bonded to a face of the light guide member close to the front closing door.

[0019] Such an arrangement facilitates the connection and the assembly, and in addition, improves the connection strength of the waterproof seal and the light guide member.

[0020] Optionally, the waterproof seal is a sponge.

[0021] The sponge has good water-blocking and water-isolating performance, is simple in structure, and is easy to realize. In addition, since the sponge is elastic, it can play a certain buffering role during the assembly, which avoids the phenomenon that a face of the light guide member away from the light-emitting member is scratched to a certain extent, and improves the working performance of the light-emitting member.

[0022] Optionally, the support is provided with at least two first mounting portions, the at least two first mounting portions being spaced apart from each other along a circumferential direction of the support; and the front closing door is provided with at least two second mounting portions, the at least two first mounting portions forming one-to-one correspondence relationship with the at least two second mounting portions.

[0023] By providing a plurality of first mounting portions and a plurality of second mounting portions cooperating with the plurality of first mounting portions, the connection strength of the support and the front closing door is improved, and the stability of the light guide member between the front closing door and the support is further improved, thereby improving the structural stability of the display mounting structure, which contributes to improving the working performance of the display mounting structure.

[0024] Optionally, an edge of the support is provided with a first turned extension edge extending in a direction away from the front closing door, an edge of the front closing door being provided with a second turned extension edge extending towards the support. The at least two first mounting portions are provided on the first turned extension edge, the at least two second mounting portions being provided on the second turned extension edge, the first turned extension edge being located inside the second turned extension edge when the support and the front closing door are assembled in place.

[0025] With such an arrangement, the structural strength of the support and the front closing door is improved, and the connection strength of the support and the front closing door is further improved.

[0026] Optionally, one of first mounting portion and second mounting portion is a snapping protrusion, and another one of first mounting portion and second mounting portion is a snapping slot which allows the snapping protrusion to extend into; and/or first mounting portion comprises a first mounting hole and second mounting portion comprises a second mounting hole, the support being connected to the front closing door by a fastener penetrating through the first mounting hole and the second mounting hole.

[0027] The structure is simple, and the connection is convenient and reliable.

[0028] Optionally, the light-emitting member is provided on a side of the support away from the light guide member, the support being provided with a light through hole for a passage of light emitted by the light-emitting member. A diffuser film is provided between the light guide member and the support, the diffuser film covering at least a part of the light through hole.

[0029] The diffuser film is provided between the light guide member and the light-emitting member. In this way, on the one hand, the light emitted by each LED of the light-emitting member can be evenly dispersed to facilitate the display. On the other hand, water vapor or liquid water can be prevented from entering the light-emitting

member through the light through hole, which can further improve the waterproofing performance.

[0030] Optionally, a face of the support facing towards the light guide member is provided with a receiving groove for receiving the diffuser film, the diffuser film being located in the receiving groove.

[0031] With such an arrangement, the diffuser film is provided in the receiving groove, which facilitates the assembly, and in addition, improves the stability of a connection of the diffuser film and the support.

[0032] According to a second aspect, embodiments of the present application further provide a laundry treatment device comprising the display mounting structure described above.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] The accompanying drawings herein, which are incorporated into and constitute a part of the description, illustrate embodiments consistent with the present application and, together with the description, serve to explain the principles of the present application.

[0034] In order to more clearly explain the embodiments of the present application or technical solutions in the related art, the drawings that need to be used in the description of the embodiments or the related art will be briefly introduced below, and it is apparent that other drawings can be obtained from these drawings for those skilled in the art without making creative work.

FIG. 1 is an explosion view of a display mounting structure according to an embodiment of the present application.

FIG. 2 is an assembly view of a display mounting structure according to an embodiment of the present application.

FIG. 3 is an enlarged view of a portion A in FIG. 2.

FIG. 4 is a partially exploded schematic view of a display mounting structure according to an embodiment of the present application.

FIG. 5 is a schematic view illustrating an assembly of a front closing door and a light guide member of a display mounting structure according to the embodiment of the present application.

FIG. 6 is another partially exploded schematic view of a display mounting structure according to an embodiment of the present application.

FIG. 7 is a schematic view illustrating an assembly of a diffuser film and a support of a display mounting structure according to an embodiment of the present application.

[0035] 1. front closing door; 11. light-transmitting hole; 111. bent edge; 121. snapping slot; 122. second mounting hole; 13. second turned extension edge; 2. support; 211. snapping protrusion; 212. first mounting hole; 22. first turned extension edge; 23. light through hole; 24. receiving groove; 25. rib; 3. light guide member; 31. light

guide protrusion; 32. accommodating groove; 4. waterproof seal; 5. light-emitting member; 51. PCB; 52. lamp body; 6. diffuser film.

5 DETAILED DESCRIPTION

[0036] In order to make the objections, technical solutions, and advantages of embodiments of the present application more clear, the technical solutions in the embodiments of the present application will be clearly and completely described below. It is apparent that the described embodiments are some embodiments of the present application, but not all embodiments of the present application. Based on the embodiments of the present application, all other embodiments obtained by those skilled in the art without making creative work belong to the scope of protection of the present application.

[0037] Generally, a front closing door of a laundry treatment device is provided with a light-transmitting port, a display structure for displaying a working state of the laundry treatment device is mounted inside the light-transmitting port, and the display structure generally comprises a support, a light-emitting member, and a light guide member.

[0038] The laundry treatment device may be, for example, a drum washing machine, a laundry dryer, or the like.

[0039] However, in the related art, during an assembly, it is necessary to first mount the light guide member on the support, that is, the light guide member and the support are combined into an integral structure, and then the combined integral structure is mounted on the front closing door, which may lead to a problem that the light guide member is easily scratched and a scrap rate is high.

[0040] Based on this, embodiments of the present application provide a display mounting structure, and a laundry treatment device provided with the display mounting structure. A light guide member and a support of the display mounting structure cooperate with a front closing door of the laundry treatment device independently, that is, the light guide member and the support are separate from each other. First, a guide protrusion of the light guide member is embedded into a light-transmitting hole of the front closing door, and then the light guide member abuts against an inner wall of the front closing door through a cooperation of the support and the front closing door, which avoids the phenomenon that the light guide member is scratched to a certain extent, and further reduces the scrap rate of the light guide member due to the scratching. In addition, a connection structure and assembly time of the light guide member and the support are saved, and the assembly efficiency is improved.

[0041] The display mounting structure and the laundry treatment device are described in detail below by specific embodiments.

First embodiment

[0042] With reference to FIG. 1 to FIG. 7, the present embodiment provides a display mounting structure for a laundry treatment device. The display mounting structure comprises a front closing door 1, a support 2, and a light guide member 3. Specifically, in use, the display mounting structure can be configured to display a working condition of the device using the display mounting structure, such as stopping or operating, etc.

[0043] In the present embodiment, with reference to FIG. 1 and FIG. 3, the light guide member 3 is located between the support 2 and the front closing door 1, the front closing door 1 is provided with a light-transmitting hole 11, and the light guide member 3 is provided with a light guide protrusion 31 extending into the light-transmitting hole 11 to allow light emitted from a light-emitting member 5 mounted on the support 2 to be guided out through the light guide protrusion 31. That is, the light emitted from the light-emitting member 5 in the display mounting structure can be guided out from the light-transmitting hole 11 through the light guide member 3 and the light guide protrusion 31, to allow display information of the light-emitting member 5 to be exposed to an outside of the laundry treatment device. In this way, the user can know the working condition of the laundry treatment device through the display information of the light-emitting member 5.

[0044] It should be noted that an outer surface of the front closing door 1 is an appearance surface of the laundry treatment device, and the light-transmitting hole 11 of the front closing door 1 is also exposed on the appearance surface. That is, the light-transmitting hole 11 of the front closing door 1 faces towards the user. Herein, structural forms of the front closing door 1 and the light-transmitting hole 11 are not limited.

[0045] With reference to FIG. 1 and FIG. 6, the support 2 is provided with a first mounting portion, the front closing door 1 is provided with a second mounting portion, and the support 2 is connected to the front closing door 1 through a cooperation of the first mounting portion and the second mounting portion, to allow the light guide member 3 to abut against the front closing door 1.

[0046] Specifically, during the assembly, the light guide member 3 and the support 2 are connected to the front closing door 1 independently. As shown in FIG. 4 and FIG. 5, the light guide protrusion 31 of the light guide member 3 is first embedded into the light-transmitting hole 11 of the front closing door 1 from an inner side of the front closing door 1, that is, the light guide member 3 is first prepositioned on the front closing door 1. Then, as shown in FIG. 6, the first mounting portion of the support 2 and the second mounting portion of the front closing door 1 are connected to each other. At this time, one face of the light guide member 3 abuts against the front closing door 1, and another face of the light guide member 3 abuts against the support 2, to allow the light guide member 3 to abut against the front closing door 1 through the support

2. That is, the light guide member 3 abuts against the front closing door 1 through the support 2 under an action of the first mounting portion and the second mounting portion. In this way, the connection is convenient and the structure is stable, thus avoiding the phenomenon that the light guide member 3 is scratched to a certain extent, reducing the scrap rate, and improving the working performance and the service life of the light guide member 3.

[0047] Furthermore, since there is no need to provide a connection structure between the light guide member 3 and the support 2, the assembly process is simplified, manpower and material resources are saved, the cost is reduced, and the work efficiency is improved.

[0048] According to the technical solution described above, in the display mounting structure provided by the present embodiment, the light guide member 3 and the support 2 sequentially cooperate with the front closing door 1, that is, the light guide protrusion 31 of the light guide member 3 is first inserted into the light-transmitting hole 11 of the front closing door 1, to allow the light guide member 3 to be prepositioned on the front closing door 1. The support 2 is then mounted on the front closing door 1 through a cooperation of the first mounting portion and the second mounting portion, and in the meantime, the light guide member 3 abuts against the front closing door 1 through the support 2, to allow the light guide member 3 to be stably sandwiched between the front closing door 1 and the support 2. During the assembly, the light guide member 3 is prepositioned on the front closing door 1 first, then the support 2 is assembled on the front closing door 1, and the light guide member 3 abuts against the front closing door 1 through the support 2 after the support 2 is assembled in place. In this way, the phenomenon that the light guide member 3 is scratched is avoided to a certain extent, and the scrap rate of the light guide member 3 due to the scratching is further reduced. In addition, the connection structure and the assembly time of the light guide member 3 and the support 2 are saved, and the assembly efficiency is improved.

[0049] In some embodiments, with reference to FIG. 2 to FIG. 4, a waterproof seal 4 is provided at a joint of the light-transmitting hole 11 and the light guide member 3.

[0050] Generally, there is a large amount of water vapor in the use environment of the laundry treatment device, and sometimes liquid water is hung on the appearance surface of the laundry treatment device. If the water vapor or the liquid water enters into the display mounting structure from the light-transmitting hole 11, the device may be malfunctioned. Therefore, as shown in FIG. 1, FIG. 3 and FIG. 4, by providing the waterproof seal 4 at the joint of the light-transmitting hole 11 and the light guide member 3, the water vapor or the liquid water can be prevented from entering into the display mounting structure through the light-transmitting hole 11 to a certain extent to damage parts. In this way, the waterproof performance is improved, the service life of the display mounting structure and the device using the display mounting structure is prolonged, and a good safety is

provided.

[0051] It can be understood that the waterproof seal 4 may be provided on a face of the light guide member 3 close to the front closing door 1, and certainly, the waterproof seal 4 may also be mounted on the inner wall of the front closing door 1, and it may be arbitrarily selected according to specific usage situations, which is not limited herein.

[0052] In some embodiments, the waterproof seal 4 comprises two waterproof strips, one of the two waterproof strips is located above the light guide protrusion 31, and another one of the two waterproof strips is located below the light guide protrusion 31, which not only facilitates the assembly, but also further improves the waterproof performance of the display mounting structure.

[0053] Certainly, the waterproof seal 4 may also be an annular seal ring provided around a periphery of the light guide protrusion 31.

[0054] In some embodiments, with reference to FIG. 1 and FIG. 4, the light guide protrusion 31 is an elongated protrusion extending in a width direction of the laundry treatment device, the light-transmitting hole 11 is an elongated hole into which the elongated protrusion may extend, and each of the two waterproof strips extends in the width direction of the laundry treatment device.

[0055] With reference to FIG. 1, when the user faces towards the front closing door 1, a direction from a left side to a right side of the user is the width direction of the laundry treatment device, and each of a width direction of the front closing door 1 and a width direction of the light guide member 3 coincides with the width direction of the laundry treatment device.

[0056] The light guide protrusion 31 is provided as an elongated protrusion extending in the width direction, and the light-transmitting hole is an elongated hole extending in the width direction, which improves the safety of pre-positioning the light guide member on the front closing door, which further avoids the phenomenon that the light guide member is scratched, and which reduces the scrap rate. In addition, each of the two waterproof strips extends in the width direction of the laundry treatment device, and is provided at the joint of the light guide protrusion 31 and the light-transmitting hole 11, which further improves the waterproof sealing performance of the joint of the light guide protrusion 31 and the light-transmitting hole 11, and improves the service life of the display mounting structure provided by the present embodiment.

[0057] In some embodiments, with reference to FIG. 1, FIG. 3 and FIG. 4, a side of the light guide member 3 facing towards the front closing door 1 is provided with an accommodating groove 32. The waterproof seal 4 is located in the accommodating groove 32, and a part of the waterproof seal 4 protrudes out of a notch of the accommodating groove 32. That is, in a direction from a bottom of the accommodating groove 32 to the notch of the accommodating groove 32, a dimension of the water-

proof seal 4 is greater than a depth of the accommodating groove 32, to allow a face of the waterproof seal 4 close to the front closing door 1 to abut against the inner wall of the front closing door 1 when the light guide protrusion 31 of the light guide member 3 is inserted into the light-transmitting hole 11 in place, which leads to a good sealing effect.

[0058] With this arrangement, a part of the waterproof seal 4 is accommodated in the accommodating groove 32, which not only facilitates the assembly of the waterproof seal 4, but also improves the stability of a connection of the waterproof seal 4 and the light guide member 3. In addition, the thickness of the waterproof seal 4 can be increased without changing a relative position of the light guide member 3 and the front closing door 1, and the waterproofing performance can be further improved.

[0059] In some embodiments, with reference to FIG. 3, a bent edge 111 extending towards the support 2 is provided on an inner side of the light-transmitting hole 11. With reference to FIG. 4, a rib 25 is provided at a periphery of the accommodating groove 32, and the bent edge 111 and the rib 25 jointly limit the waterproof seal 4.

[0060] Specifically, in use, on the basis of accommodating the waterproof seal 4 in the accommodating groove 32, the waterproof seal 4 can be jointly limited by the bent edge 111 provided on the inner side of the light-transmitting hole 11 and the rib 25 provided at the periphery of the accommodating groove 32, which further improves the stability of the connection of the waterproof seal 4 and the accommodating groove 32, and thus improves the airtightness between the light guide member and the front closing door.

[0061] Herein, the bent edge 111 is provided on the inner side of the light-transmitting hole 11 along a circumferential direction of the light-transmitting hole 11. That is, the bent edge 111 is an annular turned edge provided on the inner side of the light-transmitting hole 11, and the bent edge 111 is bent and extends towards the support 2, that is, towards a direction away from the user, which improves the sealing performance, and which is beneficial to prolonging the service life of the display mounting structure provided in the present embodiment.

[0062] In some embodiments, the waterproof seal 4 is bonded to a face of the light guide member 3 close to the front closing door 1, which facilitates the connection and the assembly, and in addition, improves the connection strength of the waterproof seal 4 and the light guide member 3.

[0063] By way of example, with reference to FIG. 4, the waterproof seal 4 is bonded to the accommodating groove 32 of the light guide member 3, which leads to a simple structure and convenient assembly.

[0064] In other embodiments, the waterproof seal 4 may be bonded to the inner wall of the front closing door 1 by a structural adhesive, or the inner wall of the front closing door 1 may be provide with an accommodating groove for accommodating the waterproof seal 4, and the waterproof seal 4 may be bonded to the accommodating

groove of the inner wall of the front closing door 1 by a structural adhesive.

[0065] In some embodiments, the waterproof seal 4 is a sponge.

[0066] The sponge has good water-blocking and water-isolating performance, is simple in structure, and is easy to realize. In addition, since the sponge is elastic, it can play a certain buffering role during the assembly, which avoids the phenomenon that a face of the light guide member 3 away from the light-emitting member 5 is scratched to a certain extent, and improves the working performance of the light-emitting member 5.

[0067] In other embodiments, the waterproof seal 4 may also be, for example, a rubber, silicone, or the like.

[0068] In some embodiments, with reference to FIG. 1 and FIG. 6, there are at least two first mounting portions, and the at least two first mounting portions are spaced apart from each other along a circumferential direction of the support 2. There are at least two second mounting portions, and the at least two second mounting portions are spaced apart from each other along a circumferential direction of the front closing door 1. The at least two first mounting portions form one-to-one correspondence relationship with the at least two second mounting portions. In this way, the structure is simple and easy to realize.

[0069] By providing a plurality of first mounting portions and a plurality of second mounting portions cooperating with the plurality of first mounting portions, the connection strength of the support 2 and the front closing door 1 is improved, and the stability of the light guide member 3 between the front closing door 1 and the support 2 is further improved, thereby improving the structural stability of the display mounting structure, which contributes to improving the working performance of the display mounting structure provided by the present embodiment.

[0070] In some embodiments, with reference to FIG. 1, FIG. 4 and FIG. 6, an edge of the support 2 is provided with a first turned extension edge 22 extending in a direction away from the front closing door 1, and an edge of the front closing door 1 is provided with a second turned extension edge 13 extending towards the support 2. The first mounting portion is provided on the first turned extension edge 22, the second mounting portion is provided on the second turned extension edge 13, and when the support 2 and the front closing door 1 are assembled in place, the first turned extension edge 22 is located inside the second turned extension edge 13. In this way, a contact area of the support 2 and the front closing door 1 is increased, the structural strength of the support 2 and the front closing door 1 is improved, and the connection strength of the support 2 and the front closing door 1 is further improved.

[0071] By way of example, with reference to FIG. 6, the support 2 is provided with two opposing edges, and each of the two opposing edges is provided with a first turned extension edge 22 extending in a direction away from the front closing door 1, that is, the support 2 is provided with two opposing first turned extension edges 22. The plur-

ality of first mounting portions are provided on the two first turned extension edges 22 of the support 2. Similarly, the front closing door 1 is provided with two opposite edges, and each of the two opposite edges is provided with a second turned extension edge 13 extending towards support 2, that is, the front closing door 1 is provided with two opposite second turned extension edges 13. The plurality of second mounting portions are provided on the two second turned extension edges 13 of the front closing door 1, the two first turned extension edges 22 form one-to-one correspondence relationship with the two second turned extension edges 13, and the plurality of first mounting portions form one-to-one correspondence relationship with the plurality of second mounting portions. In this way, the connection strength of support 2 and the front closing door 1 can be increased, the structure is stable and the reliability is high.

[0072] In some embodiments, one of the first mounting portion and the second mounting portion is a snapping protrusion 211, and another one of the first mounting portion and the second mounting portion is a snapping slot 121 into which the snapping protrusion 211 protrudes. The first mounting portion comprises a first mounting hole 212, the second mounting portion comprises a second mounting hole 122, and the support 2 is connected to the front closing door 1 by a fastener, such as a screw, which penetrates through the first mounting hole 212 and the second mounting hole 122. In this way, the structure is simple, and the connection is convenient and reliable.

[0073] As an alternative embodiment, with reference to FIG. 1 and FIG. 4 to FIG. 7, the first mounting portion is a snapping protrusion 211 provided on the support 2, and the second mounting portion is a snapping slot 121 which is provided on the front closing door 1 and into which the snapping protrusion 211 is snapped.

[0074] As another alternative embodiment, the first mounting portion is a snapping slot 121 provided on the support 2, and the second mounting portion is a snapping protrusion 211 which is provided on the front closing door 1 and into which the snapping slot 121 protrudes.

[0075] In other embodiments, the first mounting portion comprises a first mounting hole 212, the second mounting portion comprises a second mounting hole 122, and the support 2 is connected to the front closing door 1 by a fastener, such as a screw, which penetrates through the first mounting hole 212 and the second mounting hole 122. In this way, the structure is simple and convenient to be assembled.

[0076] Herein, the first mounting hole 212 may be provided on the first turned extension edge 22 of the support 2, and the second mounting hole 122 may be provided on the second turned extension edge 13 of the front closing door 1.

[0077] Specifically, in a case that a snapping protrusion 211 or a snapping slot 121 is provided on the support 2, a first mounting hole 212 may also be provided. Corre-

spondingly, in a case that a snapping slot 121 or a snapping protrusion 211 is provided on the front closing door 1, a second mounting hole 122 matching with the first mounting hole 212 may also be provided.

[0078] Exemplarily, with reference to FIG. 1 and FIG. 6, each of two opposite first turned extension edges 22 of support 2 is provided with two snapping protrusions 211 and one first mounting hole 212. Correspondingly, each of two opposite second turned extension edges 13 of the front closing door 1 is provided with two snapping slots 121 and one second mounting hole 122. The snapping protrusions 211 form one-to-one correspondence relationship with the snapping slots 121, and the first mounting holes 212 form one-to-one correspondence relationship with the second mounting holes 122. The support 2 is mounted on the front closing door 1 through the cooperation of four sets of the snapping protrusions 211 and the snapping slots 121, and two screws penetrating through the first mounting holes 212 and corresponding second mounting holes 122, which leads to a convenient connection and a stable structure, to allow the light guide member 3 to abut against the front closing door 1 reliably.

[0079] In some embodiments, with reference to FIG. 1, FIG. 3 and FIG. 7, the light-emitting member 5 is provided on a side of the support 2 away from the light guide member 3, and the support 2 is provided with a light through hole 23 for the passage of light emitted by the light-emitting member 5. Herein, the light-emitting member 5 comprises a PCB board and a lamp body, the PCB board is assembled on a face of the support 2 away from the light guide member 3 by a glue or a screw, and the lamp body is provided on a face of the PCB board close to the support 2. When the PCB board and the support 2 are assembled in place, as shown in FIG. 3, the lamp body extends into the light through hole 23, and at this time, the light through hole 23 is equivalent to a lamp cavity.

[0080] The lamp body can be a plurality of LED lamp points, and the plurality of LED lamp points are provided on the PCB board along a length direction or a width direction of the PCB board. Certainly, the lamp body can also be a LED lamp strip.

[0081] It is understood that the light through hole 23 is a strip-shaped hole matching with the lamp body.

[0082] In specific implementation, with reference to FIG. 3, in a direction from the light-emitting member 5 to the light guide member 3, an opening dimension of the light through hole 23 gradually increases, which is beneficial to the diffusion of light and has a good display effect.

[0083] In the present embodiment, as shown in FIG. 1, FIG. 3 and FIG. 7, a diffuser film 6 is provided between the light guide member 3 and the support 2. That is, the diffuser film 6 is provided on a face of the support 2 away from the lamp body, and the diffuser film 6 covers at least a part of the light through hole 23. In this way, on the one hand, the light emitted by each LED of the light-emitting member 5 can be evenly dispersed to facilitate the display. On the other hand, water vapor or liquid water can

be prevented from entering the light-emitting member 5 through the light through hole 23, which can further improve the waterproofing performance.

[0084] In some embodiments, with reference to FIG. 3 and FIG. 7, a face of the support 2 facing towards the light guide member 3 is provided with a receiving groove 24 for receiving the diffuser film 6, and the diffuser film 6 is located in the receiving groove 24, which facilitates the assembly, and in addition, improves the stability of a connection of the diffuser film 6 and the support 2.

[0085] Herein, a face of diffuser film 6 close to the light guide member 3 is flush with a notch of receiving groove 24.

[0086] In addition, the diffuser film 6 may be placed in the receiving groove 24 with an outer surface of the diffuser film 6 abutting against a groove wall of the accommodating groove 32. Certainly, the diffuser film 6 may also be bonded to the accommodating groove 32 by a structural adhesive.

Second embodiment

[0087] The present embodiment also provides a laundry treatment device, which may be, for example, a laundry treatment device such as a washing machine or a dryer.

[0088] Herein, the laundry treatment device comprises a display mounting structure.

[0089] The display mounting structure in the present embodiment has the same specific structure and implementation principle as the display mounting structure provided in the first embodiment, and can bring the same or similar technical effects as the display mounting structure provided in the first embodiment, which will not be repeatedly described herein, and can refer to the description of the first embodiment described above.

[0090] Other technical features are the same as those of the first embodiment described above, and will not be repeatedly described herein.

[0091] In the laundry treatment device provided by the embodiments of the present application, the light guide member and the support sequentially cooperate with the front closing door, that is, the light guide protrusion of the light guide member is first inserted into the light-transmitting hole of the front closing door, to allow the light guide member to be prepositioned on the front closing door. The support is then mounted on the front closing door through a cooperation of the first mounting portion and the second mounting portion, and in the meantime, the light guide member abuts against the front closing door through the support, to allow the light guide member to be stably sandwiched between the front closing door and the support. Such a design avoids the phenomenon that the light guide member is scratched to a certain extent, and further reduces the scrap rate of the light guide member due to the scratching. In addition, a connection structure and assembly time of the light guide member and the support are saved, and the assembly efficiency is im-

proved.

[0092] It should be noted that the relationship terms such as "first" and "second" are intended merely to distinguish one entity or operation from another entity or operation, and do not necessarily require or imply that any such actual relationship or order exists between these entities or operations. Furthermore, the terms "comprise", "comprising", or any other variation thereof are intended to encompass a non-exclusive inclusion such that a process, method, article, or apparatus comprising a series of elements comprises not only those elements but also other elements not explicitly listed, or elements inherent to such a process, method, article, or apparatus. Without further limitation, an element defined by the statement "comprising a ..." does not preclude the presence of additional identical elements in a process, method, article, or apparatus comprising the element.

[0093] The foregoing is merely specific embodiments of the present application to enable those skilled in the art to understand or realize the present application. Various modifications to these embodiments will be apparent to those skilled in the art, and the general principles defined herein may be implemented in other embodiments without departing from the spirit or scope of the present application. Accordingly, the present application will not be limited to these embodiments shown herein, but rather conform to the widest scope consistent with the principles and novel features of the present application.

Claims

1. A display mounting structure for a laundry treatment device, **characterized in that** the display mounting structure comprises a front closing door, a support and a light guide member,

wherein the light guide member is located between the support and the front closing door, the front closing door being provided with a light-transmitting hole, the light guide member being provided with a light guide protrusion capable of extending into the light-transmitting hole to allow light emitted from a light-emitting member mounted on the support to be guided out through the light guide protrusion,
 wherein the support is provided with first mounting portion and the front closing door is provided with second mounting portion, the support being connected to the front closing door through a cooperation of the first mounting portion and the second mounting portion, to allow the light guide member to abut against the front closing door.

2. The display mounting structure according to claim 1, wherein a waterproof seal is provided at a joint of the light-transmitting hole and the light guide member.

3. The display mounting structure according to claim 2, wherein the waterproof seal comprises two waterproof strips, one of the two waterproof strips being located above the light guide protrusion, another one of the two waterproof strips being located below the light guide protrusion.
4. The display mounting structure according to claim 3, wherein the light guide protrusion is an elongated protrusion extending in a width direction of the laundry treatment device, the light-transmitting hole being an elongated hole which allows the elongated protrusion to extend into,
 wherein the two waterproof strips extend in the width direction of the laundry treatment device.
5. The display mounting structure according to claim 2, wherein a side of the light guide member facing towards the front closing door is provided with an accommodating groove, the waterproof seal being located in the accommodating groove, a part of the waterproof seal projecting out of a notch of the accommodating groove to abut against the front closing door.
6. The display mounting structure according to claim 5, wherein a bent edge extending towards the support is provided on an inner side of the light-transmitting hole,
 wherein a rib is provided at a periphery of the accommodating groove, the bent edge and the rib jointly limiting the waterproof seal.
7. The display mounting structure according to claim 2, wherein the waterproof seal is bonded to a face of the light guide member close to the front closing door.
8. The display mounting structure according to claim 2, wherein the waterproof seal is a sponge.
9. The display mounting structure according to any one of claims 1 to 8, wherein the support is provided with at least two first mounting portions, the at least two first mounting portions being spaced apart from each other along a circumferential direction of the support, wherein the front closing door is provided with at least two second mounting portions, the at least two first mounting portions forming one-to-one correspondence relationship with the at least two second mounting portions.
10. The display mounting structure according to claim 9, wherein an edge of the support is provided with a first turned extension edge extending in a direction away from the front closing door, an edge of the front closing door being provided with a second turned extension edge extending towards the support, wherein the at least two first mounting portions are

provided on the first turned extension edge, the at least two second mounting portions being provided on the second turned extension edge, the first turned extension edge being located inside the second turned extension edge when the support and the front closing door are assembled in place. 5

11. The display mounting structure according to claim 9, wherein one of first mounting portion and second mounting portion is a snapping protrusion, and another one of first mounting portion and second mounting portion is a snapping slot which allows the snapping protrusion to extend into; and/or first mounting portion comprises a first mounting hole and second mounting portion comprises a second mounting hole, the support being connected to the front closing door by a fastener penetrating through the first mounting hole and the second mounting hole. 10
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12. The display mounting structure according to any one of claims 1 to 8, wherein the light-emitting member is provided on a side of the support away from the light guide member, the support being provided with a light through hole for a passage of the light emitted by the light-emitting member, 25
wherein a diffuser film is provided between the light guide member and the support, the diffuser film covering at least a part of the light through hole. 30

13. The display mounting structure according to claim 12, wherein a face of the support facing towards the light guide member is provided with a receiving groove for receiving the diffuser film, the diffuser film being located in the receiving groove. 35

14. A laundry treatment device, **characterized in that** the laundry treatment device comprises a display mounting structure according to any one of claims 1 to 13. 40

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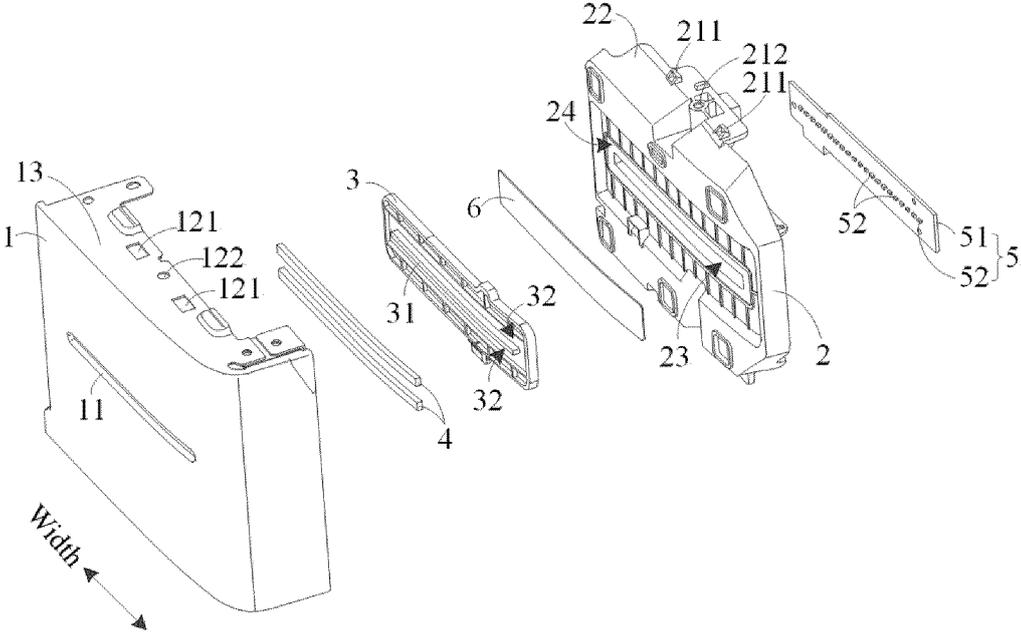


FIG. 1

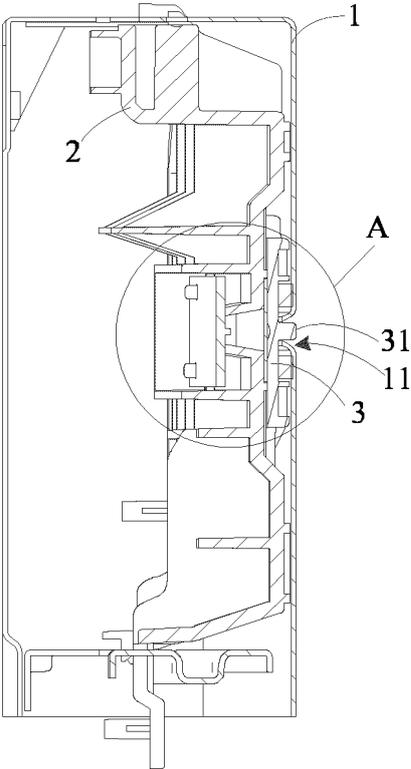


FIG. 2

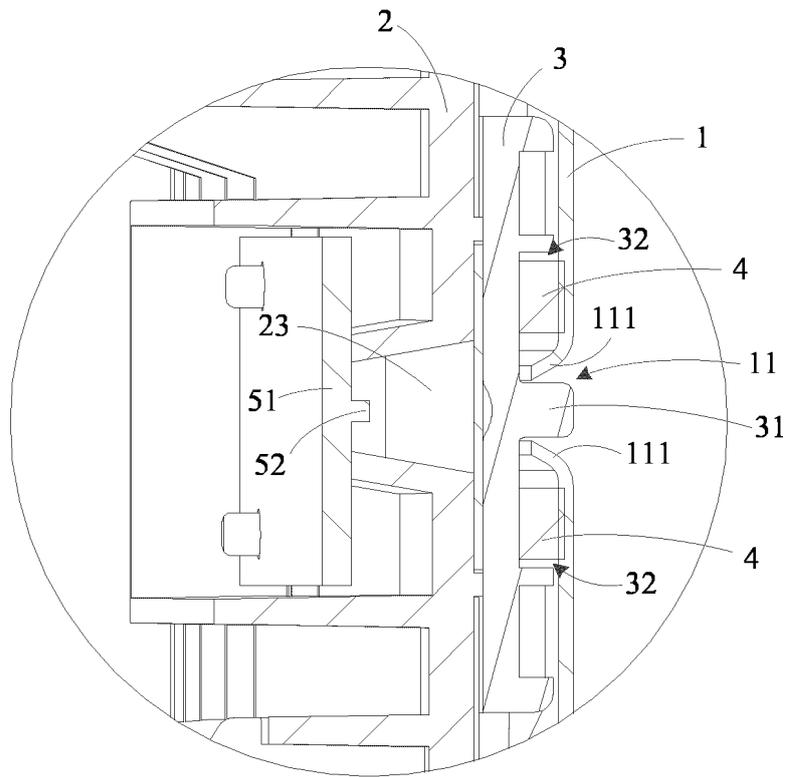


FIG. 3

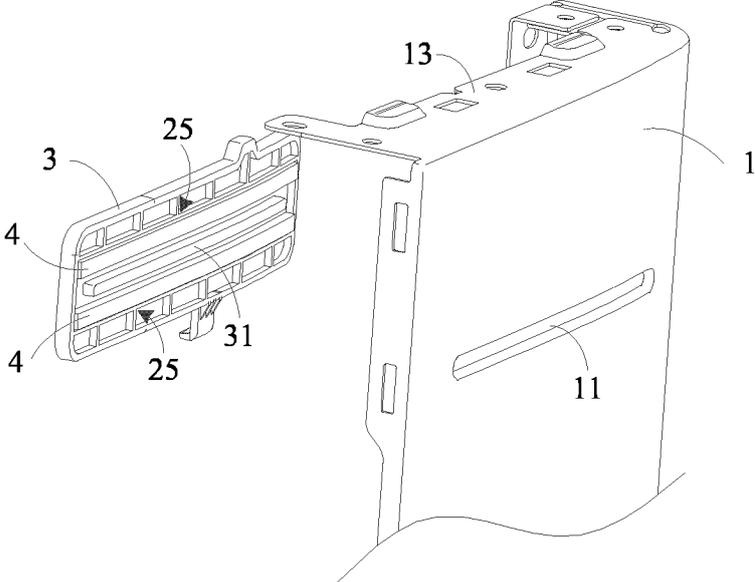


FIG. 4

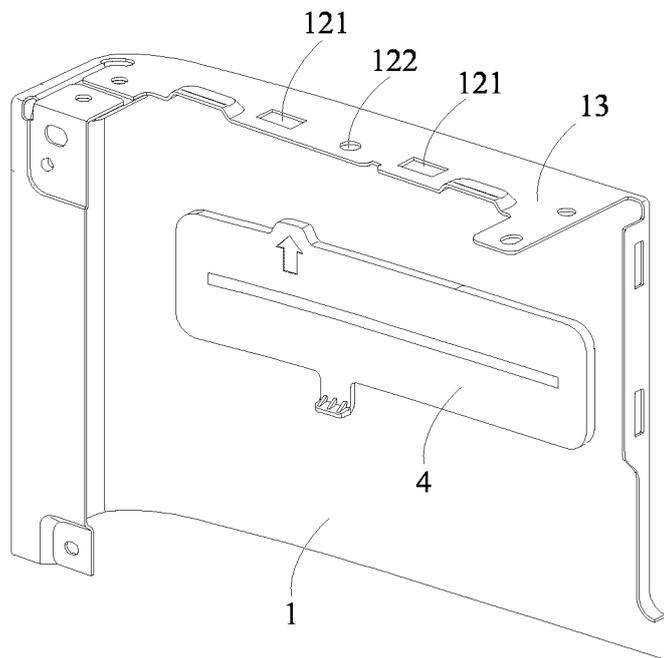


FIG. 5

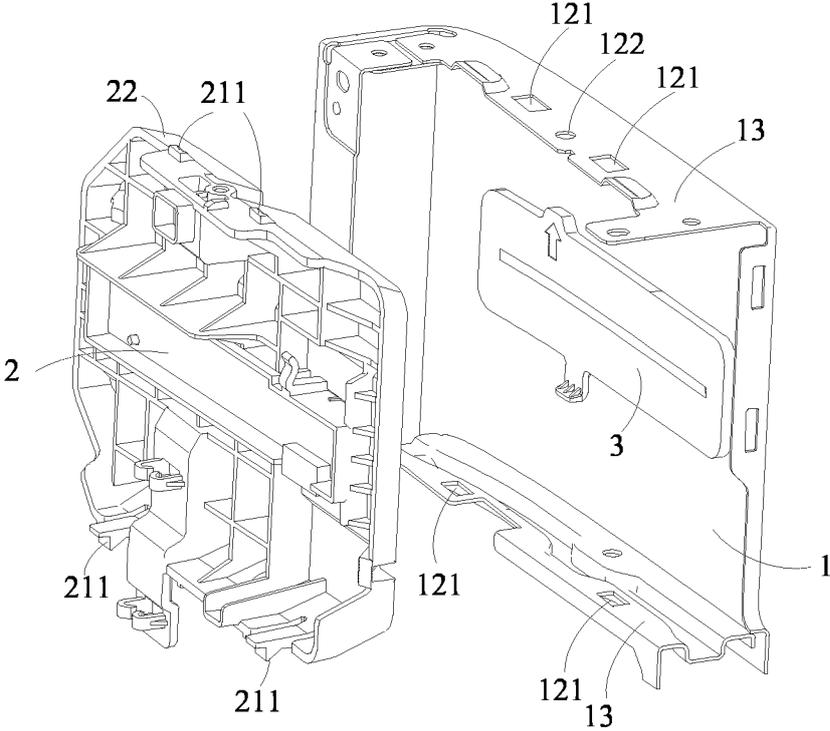


FIG. 6

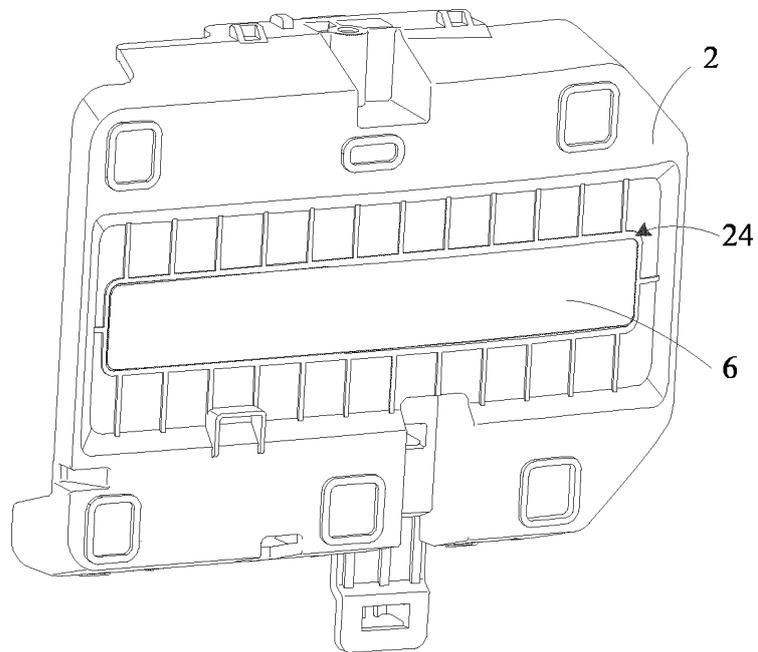


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/124989

5	A. CLASSIFICATION OF SUBJECT MATTER D06F34/34(2020.01)i	
	According to International Patent Classification (IPC) or to both national classification and IPC	
10	B. FIELDS SEARCHED	
	Minimum documentation searched (classification system followed by classification symbols) IPC: D06F	
15	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNTXT, ENTXTC, CNKI: 洗衣机, 烘衣机, 干衣机, 冰箱, 家电, 显示, 屏幕, 导光, 卡接, 扣接, 卡合, 夹紧, 抵紧, 安装, 设置; DWPL, ENTXT: washing machine, clothes dryer, refrigeratory, home appliances, display, screen, light, lead, guide, lock, fasten, clamp, touch, install.	
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
	Category*	Citation of document, with indication, where appropriate, of the relevant passages
		Relevant to claim No.
25	PX	CN 115045086 A (WUXI LITTLE SWAN ELECTRIC CO., LTD.) 13 September 2022 (2022-09-13) claims 1-14
	PX	CN 217517195 U (WUXI LITTLE SWAN ELECTRIC CO., LTD.) 30 September 2022 (2022-09-30) claims 1-14
30	X	CN 201245779 Y (PANASONIC HOME APPLIANCES (HANGZHOU) CO., LTD. et al.) 27 May 2009 (2009-05-27) description, p. 1, line 16-p. 3, line 13, and figures 2-4
	X	JP 2010069192 A (PANASONIC CORP.) 02 April 2010 (2010-04-02) description, paragraphs 18-31, and figures 1-4
35	X	JP 2007185237 A (TOSHIBA CORP. et al.) 26 July 2007 (2007-07-26) description, paragraphs 8-29, and figures 1-9
	X	JP 2011136221 A (TOSHIBA CORP. et al.) 14 July 2011 (2011-07-14) description, paragraphs 20-33, and figures 1-9
40	<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.	
	* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
45	"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
	"D" document cited by the applicant in the international application	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
	"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
	"O" document referring to an oral disclosure, use, exhibition or other means	
	"P" document published prior to the international filing date but later than the priority date claimed	
50	Date of the actual completion of the international search 13 February 2023	Date of mailing of the international search report 16 February 2023
55	Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088 Facsimile No. (86-10)62019451	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/124989

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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JP	2011136221	A	14 July 2011	JP	5127949	B2	23 January 2013
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REFERENCES CITED IN THE DESCRIPTION

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