

Door Body Structure

Field of the invention

[0001] The present application relates to a technical field of a linkage door, in particular to a door body structure.

Background of the invention

[0002] Linkage door has been widely used in life, especially in home life. According to the existing linkage doors, on the top of the linkage door, the end of the transverse frame used to install functional components (such as moving devices, transmitting components, adjusting components) is exposed on the outside. The external dust is easy to enter the transverse frame through the two ends of the transverse frame, which results in the interior of the transverse frame easily accumulating dust. At the same time, part of the moving devices in the transverse frame of the linkage door may be exposed from two sides of the transverse frame, which also affects the overall appearance of the structure of the linkage door.

Summary of the invention

[0003] In order to overcome at least one of defects of the prior art mentioned above, provided in the present application is a door body structure. Covering the ends of a transverse frame with moving devices inside is achieved, thereby preventing dust from accumulating inside the transverse frame and preventing the internal functional components from being exposed at the end of the transverse frame, so as to ensure the beauty of the overall structure of the door body.

[0004] The technical solution adopted in the present application for solving the problems is as follows.

[0005] A door body structure includes a door body, a side-sealing frame and a transverse frame used for mounting functional components; the transverse frame is fixedly connected to a top and/or a bottom of the door body; in order to ensure the connection between the transverse frame and the door body more firmly, a bottom of a linkage slot is provided with a through-hole, and a bolt passes through the through-hole, wherein the transverse frame is connected to the door body through the bolt; the side-sealing frame is enclosed on two sides of the door body and two ends of the

transverse frame. By installing the functional components into the transverse frame, the linkage components may not be exposed on the door body structure, so that the structure of the door body is more beautiful. Additionally, by installing the functional components on the transverse frame, then the transverse frame is fixedly mounted on the door body, thereby leading to an easier and more efficient assembly of the door body.

[0006] Further, by enclosing the side-sealing frame on the sides of the door body and the ends of the transverse frame, on the one side, it prevents the internal functional components from being exposed at the end of the transverse frame, so that the entire door is more beautiful, thereby improving the problem that the dust is easy to accumulate inside the transverse frame.

[0007] On the flip side, it prevents the tip of the sides of the door body and the tip of the ends of the transverse frame from hooking such as the portiere, and prevents the human body from touching the tip of the ends or the sides of the door body causing cuts, so as to protect the portiere and the human body.

[0008] Further, the door body is connected to the side-sealing frame by a snap fit, a bolt or a corner connector.

[0009] Further, the door body is provided with a snap-fit protrusion; the side-sealing frame is provided with a snap-fit slot snap-fitted with the snap-fit protrusion. The snap-fit connection between the door body and the side-sealing frame is achieved; additionally, since the mounting position of the bolt connection is concealed, the door body structure is more beautiful.

[0010] Further, a side edge of the side-sealing frame is provided with an external extension part used for handle and/or decorative part, which may achieve the dragging and pulling of the door body, and further achieve the beautifying of the door body.

[0011] Further, the transverse frame is provided with a connecting slot; a door core panel of the door body is inserted into an interior of the connecting slot, so as to position and fix the door core panel of the door body during assembly.

[0012] Further, an interior sidewall of the connecting slot is provided with sawtooth-pattern structure, so that the door core panel is tightly inserted into the interior of the connecting slot, thereby more firmly connecting the transverse frame to the door body.

[0013] Further, an interior of the side-sealing frame is provided with a side-connecting slot, so

that the door core panel may snap-fit into the side-connecting slot, thereby fixing the door core panel of the door body more firmly.

[0014] Further, the door body structure also includes a first fixing part and a second fixing part; the first fixing part is fixedly connected to the door body; the second fixing part is fixedly connected to an interior of the side-connecting slot; and the first fixing part abuts or snap-fits the second fixing part so as to fix the side-sealing frame on the door body.

[0015] Further, an interior of the transverse frame is provided with an accommodating slot used for accommodating the functional components; the accommodating slot is located on a side opposite to a bottom of the connecting slot.

[0016] Further, the interior of the transverse frame is provided with a mounting slot used for fixedly connecting the functional components; the mounting slot is provided in an interior of the accommodating slot.

[0017] In summary, the door body structure provided in the present application has technical effects as follows:

[0018] By adopting a transverse frame to install functional components, the process of mounting the door body is more efficient and convenient, and the functional components are concealed, thereby making the entire structure of the door body more beautiful.

[0019] The transverse frame is fixedly mounted on a top and/or a bottom of the door body, and the side-sealing frame is enclosed on two sides of the door body and two ends of the transverse frame, so that the entire door body is more beautiful. Additionally, the functional components on the door body are covered by the side-sealing frame, which addresses the appearance problem that the rail assembly, the hanging wheel assembly and the linkage assembly of the existing linkage door are exposed, thereby improving the problem that the dust is easy to accumulate inside the transverse frame. Moreover, it prevents the tip of the sides of the door body and the tip of the ends of the transverse frame from hooking such as the portiere, and prevents the human body from touching the tip of the ends or the tip of the sides of the door body causing cuts, so as to protect the portiere and the human body.

Brief description of the drawings

- [0020]** Fig. 1 is a first structural diagram of embodiment 1 in the present application;
- [0021]** Fig. 2 is a second structural diagram of embodiment 1 in the present application;
- [0022]** Fig. 3 is a partially enlarged diagram of Fig. 1 in the A-direction;
- [0023]** Fig. 4 is a partially enlarged diagram of Fig. 1 in the B-direction;
- [0024]** Fig. 5 is an assembly diagram of the transverse frame and the side-sealing frame provided with an external extension part of embodiment 2 in the present application;
- [0025]** Fig. 6 is a first installation diagram of the first fixing part and the second fixing part of embodiment 3 in the present application;
- [0026]** Fig. 7 is a semi-section in the C-direction of Fig. 6, wherein the side-sealing frame and the door body are shown in section;
- [0027]** Fig. 8 is an exploded diagram of Fig. 6, wherein the side-sealing frame and the door body are shown in section;
- [0028]** Fig. 9 is a second installation diagram of the first fixing part and the second fixing part of embodiment 3 in the present application.

The meanings of the attached markings are as follows:

1 door body; 11 snap-fit protrusion; 12 door core panel; 13 door slot; 2 side-sealing frame; 21 snap-fit slot; 22 side-connecting slot; 3 transverse frame; 31 connecting slot; 32 sawtooth-pattern structure; 33 accommodating slot; 34 mounting slot; 35 linkage slot; 36 through-hole; 4 bolt; 5 external extension part; 61 first fixing part; 62 second fixing part.

Detailed description of the preferred embodiments

[0029] For a better understanding and implementation, the technical solutions in the embodiments of the present application are clearly and completely described below in conjunction with the attached drawings of the present application.

[0030] In the description of the present application, it is to be noted that the terms "up", "down", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inside", "outside" and other orientation or position relationships are based on the orientation or position relationships shown in the attached drawings. It is only intended to facilitate description and simplify operation,

but not to indicate or imply that the referred device or element has a specific orientation, or is constructed and operated in a specific orientation. Therefore, they should not be construed as a limitation of the present application.

[0031] Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as commonly understood by those skilled in the art to which the present application belongs. The terms used herein in the specification of the present application are used only to describe specific embodiments and are not intended as a limitation of the application.

Embodiment 1

[0032] Referring to Fig. 1 to Fig. 4, disclosed in the present application is a door body structure, including a door body 1, a side-sealing frame 2 and a transverse frame 3 used for mounting functional components; the functional components are moving devices used for driving the door body 1 to move, transmitting component used for connecting the adjacent door bodies, or adjusting component used for adjusting the door body to lift and lower. That is to say, the linkage component or other adjusting components used for adjusting the door body 1 are accommodated in the transverse frame 3, so that the functional components are not exposed outside. Additionally, when assembling the functional components of the door body, the functional components may be mounted into the transverse frame 3 firstly, thereby increasing the mounting efficiency of the door body. Moreover, the transverse frame 3 is fixedly connected on a top and/or a bottom of the door body 1, and the side-sealing frame 2 is enclosed on two sides of the door body 1 and two ends of the transverse frame 3. Thus, when assembling the side-sealing frame 2 on two sides of the door body 1, two ends of the transverse frame 3 are also sealed at the same time, so that the accommodating slot 33 of the transverse frame 3 is formed as a sealed slot. Compared to the situation that the ends of the transverse frame 3 are exposed, the dust is less likely to accumulate inside the transverse frame 3, which improves the problem of dust accumulation. Additionally, the side-sealing frame 2 seals both the sides of the door body 1 and the ends of the transverse frame 3; by sealing the ends of the transverse frame 3 through the side-sealing frame 2, which makes the structure of the door body more integral, so that the entire door body is more beautiful. The tip of the sides of the door body 1 and the tip of the ends of the transverse frame 3 are sealed inside the

side-sealing frame 2, which prevents the tip of the ends from hooking such as the portiere, and prevents the human body from touching the tip of the ends or the sides of the door body 1 causing cuts, so as to protect the portiere and the human body.

[0033] In the present embodiment, in order to achieve that the side-sealing frame 2 is enclosed on the door body 1 and the ends of the transverse frame 3, the door body 1 is connected to the side-sealing frame 2 by a snap fit, a bolt or a corner connector. A plurality of threaded holes may be provided on the side edge of the door body 1, so that the bolted connection may be achieved between the side-sealing frame 2 and the door body 1; both the side-sealing frame 2 and the door body 1 are provided with threaded holes, and corner connectors are provided inside the side-sealing frame 2, wherein an end of the corner connector is bolted to the door body 1, and an opposite end of the corner connector is bolted to the side-sealing frame 2, so as to achieve that the side-sealing frame 2 is fixedly assembled on the sides of the door body 1 and the ends of the transverse frame 3.

[0034] As an optimal solution, in conjunction with Fig. 3, the door body 1 is provided with a snap-fit protrusion 11, and the side-sealing frame 2 is provided with a snap-fit slot 21 snap-fitted with the snap-fit protrusion 11, so as to achieve that the door body 1 is snap-fitted with the side-sealing frame 2. As an equivalent alternative for the optimal solution, the door body 1 is provided with a snap-fit slot, and then the side-sealing frame 2 is provided with a snap-fit protrusion snap-fitted with the snap-fit slot. When the snap-fit protrusion is snap-fitted with the snap-fit slot, it may also achieve that the door body 1 is snap-fitted with the side-sealing frame 2. Additionally, since the mounting position of the bolt connection is concealed, the door body structure is more beautiful. Specifically, referring to Fig. 4, the transverse frame 3 is provided with a connecting slot 31; a door core panel 12 of the door body 1 is inserted into an interior of the connecting slot 31, so that the positioning and fixing of the door core panel 12 of the door body 1 during assembly is achieved. Preferably, an interior sidewall of the connecting slot 31 is provided with sawtooth-pattern structure 32, so that the door core panel 12 is tightly inserted into the interior of the connecting slot 31. In order to ensure that the connection between the transverse frame 3 and the door body 1 is more firmly, a bottom of a linkage slot 35 is provided with a through-hole 36, and a bolt 4 passes through the through-hole 36, wherein the transverse frame 3 is connected to the door body 1

through the bolt 4.

[0035] Further, referring to Fig. 3, an interior of the side-sealing frame 2 is provided with a side-connecting slot 22. When assembling the side-sealing frame 2 on the door body 1, the door core panel 12 may be snap-fitted into the side-connecting slot 22, thereby fixing the door core panel 12 of the door body 1 more firmly.

[0036] Specifically, in conjunction with Fig. 1 to Fig. 4, an interior of the transverse frame 3 is provided with an accommodating slot 33 used for accommodating the functional components; the accommodating slot 33 is located on a side opposite to a bottom of the connecting slot 31. Therefore, the functional components are positioned in the slot of the accommodating slot 33, so as to achieve that the functional components inside the door body are concealed.

[0037] Further, in conjunction with Fig. 4, an interior of the transverse frame 3 is provided with a mounting slot 34 used for fixedly connecting functional components. When the door body is a linkage door, the functional component is preferably a linkage component provided with a connecting component, wherein the linkage component is fixedly mounted inside the mounting slot 34, and the mounting slot 34 is provided inside the accommodating slot 33, i.e., the mounting slot 34 is fixedly mounted inside the accommodating slot 33. When assembling the linkage door, the linkage component may be mounted on the transverse frame 3 firstly, and then the transverse frame 3 is fixedly mounted on the door body 1, so as to facilitate assembling the linkage door.

[0038] Further, in conjunction with Fig. 4, a linkage slot 35 is formed by the wall of the accommodating slot 33 and the wall on a same side of the mounting slot 34, the connecting part connected to the linkage component slides within the linkage slot 35. Preferably, two linkage slots 35 are formed by two side walls of the mounting slot 34 and two corresponding side walls of the accommodating slot 33 respectively, and two linkage slots 35 are located on two opposite side of the mounting slot 34. Correspondingly, two connecting parts are provided on the linkage component, wherein two connecting parts slide within the two corresponding linkage slots 35 respectively; driven door bodies adjacent to the door body 1 are fixedly connected to the corresponding connecting parts. Thus, the linkage between the door body 1 and the two adjacent driven door bodies is achieved, and only the ends of the connecting parts may be seen between the door body 1 and the adjacent driven door bodies, so as to make the entire linkage door simpler and

more beautiful.

[0039] In summary, disclosed in the present application is a door body structure, including a side-sealing frame and the transverse frame mounted on the door body; the side-sealing frame is enclosed on the sides of the door body and the ends of the transverse frame, so that the functional components required by the door body are mounted inside the transverse frame, which enables that the functional components may not be exposed on the door body structure, so that the structure of the door body is more beautiful. Additionally, by mounting the functional components on the transverse frame firstly, then the transverse frame is fixedly mounted on the door body, thereby making the assembly of the door body easier and more efficient. Further, the side-sealing frame is enclosed on the sides of the door body and the ends of the transverse frame, on the one side, which further makes the entire door more beautiful, thereby improving the problem that the dust is easy to accumulate inside the transverse frame; on the flip side, it prevents the tip of the sides of the door body and the tip of the ends of the transverse frame from hooking such as the portiere, and prevents the human body from touching the tip of the ends or the sides of the door body causing cuts, so as to protect the portiere and the human body.

Embodiment 2

[0040] As a preferable solution, in conjunction with Fig. 5, in the illustration, the transverse frame 2 is shown in a cross-sectional structure in order to show more clearly the structure of the external extension part 5. The side-sealing frame 2 of embodiment 1 is applied, differing from the side-sealing frame 2 of embodiment 1, wherein a side edge of the side-sealing frame 2 is provided with an external extension part 5 used for a handle and/or a decorative part. The external extension part 5 is preferably provided as a hollow structure, so that the weight of the entire side-sealing frame 2 is lighter. When the external extension part 5 is used as a handle, the external extension part 5 may be provided with a through-hole for passing through hands. When hands pass through the through-hole, the user may grip the external extension part 5 to drag or pull the door body. Admittedly, a handle assembly may be mounted additionally on the external extension part 5, so as to drag and pull the door body. Further, the wall of the external extension part 5 may be hollowed out and engraved with patterns, so as to achieve that the ends of the transverse frame 3 are sealed

to conceal the functional components inside the transverse frame 3, thereby further achieving the beautifying of the door body.

Embodiment 3

[0041] In order to ensure that the side-sealing frame 2 of embodiment 1 or embodiment 2 does not slip easily after being mounted to the door body 1, a preferable solution being provided herein, specifically in conjunction with Fig. 6 and Fig. 9, the door body structure further includes a first fixing part 61 and a second fixing part 62; the first fixing part 61 is fixedly connected to the door body 1; the second fixing part 62 is fixedly connected to an interior of the side-connecting slot 22; and the first fixing part 61 abuts or snap-fits the second fixing part 62 so as to fix the side-sealing frame 2 on the door body 1. The first fixing part 61 is bolted inside the door slot 13 of the door body 1; the first fixing part 61 and the second fixing part 62 may be non-metal materials or metal materials. Further, the first fixing part 61 may abut the second fixing part 62, and the side-sealing frame 2 is fixed on the door body 1 through the friction between the first fixing part 61 and the second fixing part 62, which prevents the side-sealing frame 2 from inevitably slipping down after being mounted to the door body 1. Therefore, the first fixing part 61 and the second fixing part 62 may be non-metal materials or metal materials with knurled layers. Additionally, the first fixing part 61 may be snap-fitted with the second fixing part 62 so as to fix the side-sealing frame 2 on the door body 1, which prevents the side-sealing frame 2 from slipping down after being mounted to the door body 1.

[0042] The technical means disclosed in the solution of the present application are not limited to those disclosed in the embodiments mentioned above but also include technical solutions consisting of any combination of the above technical features; it should be noted that for those of ordinary skill in the art, a plurality of improvements and modifications may be made without departing from the principles of the present application; and these improvements and modifications are also considered to be within the scope of protection of the present application.

Claims

1. A door body structure, characterized by comprising: a door body (1), a side-sealing frame (2) and a transverse frame (3) used for mounting functional components; the transverse frame (3) is fixedly connected to a top and/or a bottom of the door body (1); and the side-sealing frame (2) is enclosed on two sides of the door body (1) and two ends of the transverse frame (3).
2. The door body structure according to claim 1, characterized in that the door body (1) is connected to the side-sealing frame (2) by a snap fit, a bolt or a corner connector.
3. The door body structure according to claim 2, characterized in that the door body (1) is provided with a snap-fit protrusion (11); the side-sealing frame (2) is provided with a snap-fit slot (21) snap-fitted with the snap-fit protrusion (11).
4. The door body structure according to claim 1, characterized in that a side edge of the side-sealing frame (2) is provided with an external extension part (5).
5. The door body structure according to claim 1, characterized in that the transverse frame (3) is provided with a connecting slot (31); a door core panel (12) of the door body (1) is inserted into an interior of the connecting slot (31).
6. The door body structure according to claim 5, characterized in that an interior sidewall of the connecting slot (31) is provided with sawtooth pattern structure (32), so that the door core panel (12) is tightly inserted into the interior of the connecting slot (31).
7. The door body structure according to claim 5, characterized in that an interior of the side-sealing frame (2) is provided with a side-connecting slot (22).
8. The door body structure according to claim 7, characterized by further comprising a first fixing part (61) and a second fixing part (62); the first fixing part (61) is fixedly connected to the door body (1); the second fixing part (62) is fixedly connected to an interior of the side-connecting slot (22); and the first fixing part (61) abuts or snap-fits the second fixing part (62) so as to fix the side-sealing frame (2) on the door body (1).
9. The door body structure according to claim 5, characterized in that an interior of the transverse frame (3) is provided with an accommodating slot (33) used for accommodating the functional components; the accommodating slot (33) is located on a side opposite to a bottom of the

connecting slot (31).

10. The door body structure according to claim 9, characterized in that the interior of the transverse frame (3) is provided with a mounting slot (34) used for fixedly connecting the functional components; the mounting slot (34) is provided in an interior of the accommodating slot (33).