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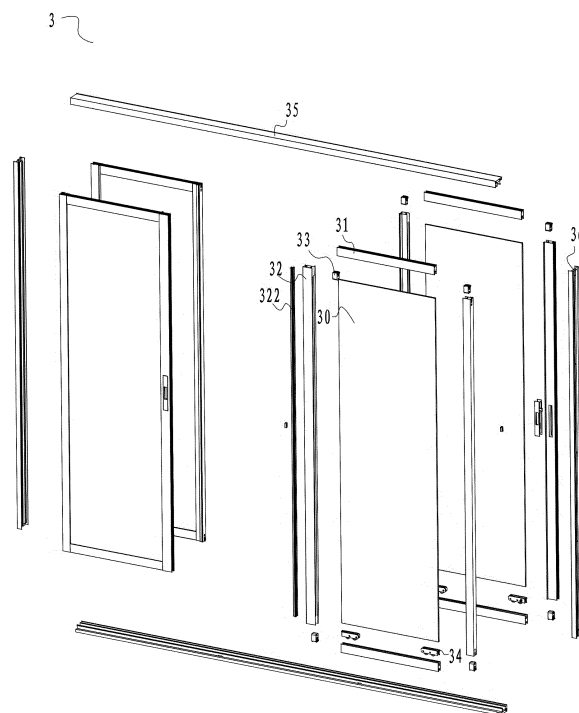
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(54) **A FAST-ASSEMBLED SLIDING DOOR ASSEMBLY FOR AN OUTDOOR TENT**

(57) The utility model pertains to the field of outdoor supplies and specifically relates to a fast-assembled sliding door assembly for an outdoor tent. The fast-assembled sliding door assembly comprises a door frame structure and sliding doors that are slidably embedded in the door frame structure. Each sliding door comprises a door panel and a border structure surrounding the door panel. The border structure comprises an upper horizontal sliding door border tube, a lower horizontal sliding door border tube, a left vertical sliding door border tube and a right vertical sliding door border tube. The four border tubes are mounted in a fit manner by means of first fasteners. Non-metallic parts are built in the upper and lower ends of the vertical sliding door border tubes, respectively. The non-metallic parts have guide holes. The guide holes are used to provide guidance for the connection of the first fasteners between the horizontal sliding door border tubes and the vertical sliding door border tubes. The present utility model has the following beneficial effects: Non-metallic parts are built in the two ports of each vertical sliding door border tube, and the horizontal sliding door border tubes are fixed with tapping screws through the guide holes of the non-metallic parts, resulting in effects of guidance, reinforcement, and reducing noise during sliding of the sliding doors.



[Figure No.] Fig. 2

## Description

### TECHNICAL FIELD

**[0001]** The present utility model pertains to the field of outdoor supplies and specifically relates to a fast-assembled sliding door assembly for an outdoor tent.

### BACKGROUND ART

**[0002]** Outdoor sliding-door tents are outdoor tent products. In general, a rack constitutes the main body of an outdoor sliding-door tent, the top of the rack has a canopy structure that can be opened and closed, sliding door assemblies are provided around the rack, each sliding door assembly comprises a door frame structure fixed on the rack and sliding doors that can be opened and closed on the door frame structure, and each sliding door comprises a border structure and a door body embedded in the border structure. A conventional border structure generally comprises two horizontal sliding door border tubes and two vertical sliding door border tubes; and a conventional door frame structure comprises two horizontal door frame tubes and two vertical supporting and fixing frame tubes. The prior art has the following problems: 1. The assembly of the four borders is troublesome. In particular, when screws are used for fixation, it is difficult to align the positions of the holes. As the border structure is a rectangular structure, when the assembly of a corner has an error, it will be impossible to correctly assemble all borders; 2. It is noisy to open or close a sliding door assembly; 3. The structure of the vertical sliding door borders is vertically asymmetric, resulting in a complex manufacturing process; 4. The installation structure between the horizontal door frame tubes and the vertical supporting and fixing frame tubes is complex and the installation is laborious; 5. When the vertical supporting and fixing frame tubes are mounted to a ring beam of the rack, screws need to be tapped from the inner side of the vertical borders of the door frame and are exposed, affecting the appearance; 6. On the inner side of a conventional vertical supporting and fixing frame tube, there are two double-rib structures used for fitting a border of the door panel, but only one double-rib structure is actually used. The redundant double-rib structure affects the appearance; 7. The chute tubes are groove tube structures that are integrated with the vertical sliding door border tubes of the sliding door. The chute tubes are used to contact the door frame or another sliding door when the present sliding door is closed, and have a sealing effect. As only some vertical sliding door border tubes need to be provided with chute tubes, normally both vertical sliding door border tubes with chute tubes and vertical sliding door border tubes without chute tubes need to be manufactured, adding difficulties to the manufacturing. Further, the vertical sliding door border tubes with chute tubes and the vertical sliding door border tubes without chute tubes are not interchangeable, causing in-

convenience to assembly.

### SUMMARY OF THE UTILITY MODEL

**[0003]** In order to make up for the defects of the prior art, the present utility model provides a technical solution for a fast-assembled sliding door assembly for an outdoor tent.

**[0004]** A fast-assembled sliding door assembly for an outdoor tent, comprising a door frame structure and sliding doors that are slidably embedded in the door frame structure, each sliding door comprising a door panel and a border structure surrounding the door panel, the border structure comprising an upper horizontal sliding door border tube, a lower horizontal sliding door border tube, a left vertical sliding door border tube and a right vertical sliding door border tube, which are mounted in a fit manner by means of first fasteners, wherein non-metallic parts are built in the upper and lower ends of the vertical sliding door border tubes, respectively, the non-metallic parts have guide holes, and the guide holes are used to provide guidance for the connection of the first fasteners between the horizontal sliding door border tubes and the vertical sliding door border tubes.

**[0005]** The fast-assembled sliding door assembly for an outdoor tent, wherein the horizontal sliding door border tubes comprise horizontal sliding door border tube bodies and horizontal sliding door border tube slots used for mounting the door panel, and a guide wheel assembly is mounted in a fit manner inside the horizontal sliding door border tube body of at least one of the upper horizontal sliding door border tube and the lower horizontal sliding door border tube; a guide wheel frame of the guide wheel assembly is mounted to the vertical sliding door border tubes by means of second fasteners, the non-metallic parts have guide slots, and the guide slots are used to provide guidance for the connection of the second fasteners between the guide wheel frame and the vertical sliding door border tubes.

**[0006]** The fast-assembled sliding door assembly for an outdoor tent, wherein the guide holes on the non-metallic parts are aligned with first mounting holes on the horizontal sliding door border tubes and second mounting holes on the vertical sliding door border tubes, respectively, and the first fasteners are simultaneously connected to the second mounting holes, the guide holes and the first mounting holes; the guide slots on the non-metallic parts are aligned with third mounting holes on the guide wheel frame and mounting ports on the vertical sliding door border tubes, respectively, and the second fasteners are simultaneously connected to the mounting ports, the guide slots and the third mounting holes.

**[0007]** The fast-assembled sliding door assembly for an outdoor tent, wherein the first mounting holes are first openings, which are formed by first grooves arranged on the horizontal sliding door border tube bodies.

**[0008]** The fast-assembled sliding door assembly for an outdoor tent, wherein the vertical sliding door border

tubes adopt vertically symmetric structures.

**[0009]** The fast-assembled sliding door assembly for an outdoor tent, wherein the non-metallic parts adopt plastic structures.

**[0010]** The fast-assembled sliding door assembly for an outdoor tent, wherein the door frame structure comprises an upper horizontal door frame tube, a lower horizontal door frame tube, a left vertical supporting and fixing frame tube and a right vertical supporting and fixing frame tube, the four frame tubes are mounted in a fit manner, second grooves are arranged on main bodies of the horizontal door frame tubes, the second grooves form second openings, and the second openings are fixed and mounted to the corresponding vertical supporting and fixing frame tubes by means of third fasteners.

**[0011]** The fast-assembled sliding door assembly for an outdoor tent, wherein groove portions formed from outward depression are arranged on the vertical supporting and fixing frame tubes and are fixed and mounted to a ring beam of a rack by means of fourth fasteners, so that the fourth fasteners are concealed in the groove portions and not exposed.

**[0012]** The fast-assembled sliding door assembly for an outdoor tent, wherein only one double-rib structure used for fitting a vertical sliding door border tube is arranged on the inner side of each vertical supporting and fixing frame tube; and guide rails are arranged on the main body of at least one of the two horizontal door frame tubes.

**[0013]** The fast-assembled sliding door assembly for an outdoor tent, wherein chute tubes on the vertical sliding door border tubes are snap-fit with the vertical sliding door border tubes.

**[0014]** The present utility model has the following beneficial effects:

1) The vertical sliding door border tubes adopt vertically symmetric structures and the holes and slots matched with the vertical sliding door border tubes are all designed to be symmetric to simplify the process and avoid confusion during assembly;

2) The horizontal sliding door border tubes are designed to have first openings, and fasteners are used to simplify the assembly between the horizontal sliding door border tubes and the vertical sliding door border tubes;

3) Non-metallic parts are built in the two ports of each vertical sliding door border tube, and the horizontal sliding door border tubes are fixed with fasteners through the guide holes of the non-metallic parts, resulting in effects of guidance, reinforcement, and reducing noise during sliding of the sliding door;

4) Only one double-rib structure is provided for each vertical supporting and fixing frame tube to fit the vertical sliding door border tubes. There are no re-

dundant exposed double-ribs and the appearance is better;

5) The vertical supporting and fixing frame tubes are designed to have groove portions, and the fasteners are arranged inside the groove portions and not exposed, so the appearance is better;

6) The vertical sliding door border tubes and the chute tubes are designed to be split buckle structures, to minimize the border tubes of the sliding door and simplify the manufacturing process of the vertical sliding door border tubes. The left vertical sliding door border tube and the right vertical sliding door border tube are interchangeable and it is not necessary to produce two types of vertical sliding door border tubes;

7) Second openings are arranged on the horizontal door border tubes, and fasteners are used to simplify the assembly between the horizontal door frame tubes and the vertical supporting and fixing frame tubes.

## BRIEF DESCRIPTION OF THE DRAWINGS

### [0015]

Fig. 1 is a structural schematic view of an outdoor sliding-door tent in which the present utility model is used;

Fig. 2 is an exploded structural schematic view of the fast-assembled sliding door assembly for an outdoor tent;

Fig. 3 is a structural schematic front view of sliding doors in the present utility model. Four sliding doors are shown in the figure;

Fig. 4 is a structural schematic top view of sliding doors in the present utility model. Four sliding doors are shown in the figure;

Fig. 5 is a schematic view of the end face when a vertical sliding door border tube is connected to a chute tube in the present utility model;

Fig. 6 is a structural schematic right view of vertical sliding door border tubes in the present utility model. Two vertical sliding door border tubes are shown in the figure;

Fig. 7 is a locally enlarged structural schematic view of a vertical sliding door border tube in the present utility model;

Fig. 8 is a structural schematic view of the connection

between vertical sliding door border tubes and a lower horizontal door border tube in the present utility model;

Fig. 9 is a structural schematic view of the connection between vertical sliding door border tubes and an upper horizontal door border tube in the present utility model;

Fig. 10 is a structural schematic view of a non-metallic part in the present utility model;

Fig. 11 is a structural schematic view of the connection between a vertical supporting and fixing frame tube and a vertical sliding door border tube in the present utility model;

Fig. 12 is a structural schematic view of the end face of a vertical supporting and fixing frame tube in the present utility model;

Fig. 13 is a structural schematic view of a horizontal sliding door border tube in the present utility model

Fig. 14 is a structural schematic view of a guide wheel assembly in the present utility model.

## DETAILED DESCRIPTION

**[0016]** The present utility model will be further illustrated with reference to accompanying drawings.

**[0017]** The figures show a fast-assembled sliding door assembly for an outdoor tent, which is used in an outdoor sliding-door tent. The outdoor sliding-door tent comprises a rack 1, a canopy structure 2 is mounted at the top of the rack 1 in a fit manner, and sliding door assemblies 3 are mounted on the front, left and right sides of the rack 1 in a fit manner. Each sliding door assembly 3 comprises a door frame structure and four sliding doors that are slidably embedded in the door frame structure. Each sliding door comprises a door panel 30 and a border structure surrounding the door panel 30, the border structure comprises an upper horizontal sliding door border tube 31, a lower horizontal sliding door border tube 31, a left vertical sliding door border tube 32 and a right vertical sliding door border tube 32, and the four border tubes are mounted in a fit manner by means of first fasteners. Specifically, non-metallic parts 33 are built in the upper and lower ends of the vertical sliding door border tubes, respectively, the non-metallic parts 33 have guide holes 330, and the guide holes 330 are counter bores and used to provide guidance for the connection of the first fasteners between the horizontal sliding door border tubes 31 and the vertical sliding door border tubes 32.

**[0018]** As an optimization: The horizontal sliding door border tubes 31 comprise horizontal sliding door border tube bodies 310 and horizontal sliding door border tube slots 311 used for mounting the door panel 30, and a

guide wheel assembly 34 is mounted in a fit manner inside the horizontal sliding door border tube body 310 of the lower horizontal sliding door border tube 31; a guide wheel frame 340 of the guide wheel assembly 34 is mounted to the vertical sliding door border tubes 32 by means of second fasteners, the non-metallic parts 33 have guide slots 331, and the guide slots 331 are used to provide guidance for the connection of the second fasteners between the guide wheel frame 340 and the vertical sliding door border tubes 32.

**[0019]** More specifically, the guide holes 330 on the non-metallic parts 33 are aligned with first mounting holes 312 on the horizontal sliding door border tubes 31 and second mounting holes 320 on the vertical sliding door border tubes 32, respectively, and the first fasteners are simultaneously connected to the second mounting holes 320, the guide holes 330 and the first mounting holes 312; the guide slots 331 on the non-metallic parts 33 are aligned with third mounting holes 3400 on the guide wheel frame 340 and mounting ports 321 on the vertical sliding door border tubes 32, respectively, and the second fasteners are simultaneously connected to the mounting ports 321, the guide slots 331 and the third mounting holes 313.

**[0020]** Still further, the first mounting holes 312 are first openings in an inner-hexagon shape, which are formed by first grooves 313 arranged on the horizontal sliding door border tube bodies 310.

**[0021]** As an optimization: The vertical sliding door border tubes 32 comprise vertical sliding door border tube bodies 323 used for mounting non-metallic parts 33, and vertical sliding door border tube slots 324 mounted in cooperation with the horizontal sliding door border tubes 31 and the door panel 30.

**[0022]** As an optimization: The non-metallic parts 33 are built in the ports of the vertical sliding door border tube bodies 323.

**[0023]** As an optimization: The non-metallic parts 33 adopt plastic structures.

**[0024]** As an optimization: The vertical sliding door border tubes 32 adopt vertically symmetric structures.

**[0025]** As an optimization: Chute tubes 322 on the vertical sliding door border tubes 32 are snap-fit with the vertical sliding door border tubes 32. More specifically, clamp slots 325 are arranged on both sides of the end of each vertical sliding door border tube 32 facing away from a door body 30, clamp bars 3220 used for buckling the clamp slots 325 are arranged on both sides of the chute tubes 322, and the clamp bars 3220 have wedge bulges that can be snapped into the clamp slots 325.

**[0026]** As an optimization: The door frame structure comprises an upper horizontal door frame tube 35, a lower horizontal door frame tube 35, a left vertical supporting and fixing frame tube 36 and a right vertical supporting and fixing frame tube 36, the four frame tubes are mounted in a fit manner, second grooves 350 are arranged on main bodies of the horizontal door frame tubes 35, the second grooves 350 form second openings 351 in an

inner-hexagon shape and the second openings 351 are fixed and mounted to the corresponding vertical supporting and fixing frame tubes 36 by means of third fasteners. Here, the main bodies of the horizontal door frame tubes 35 are rectangular tube structures. Guide rails 352 are arranged on the main bodies of the horizontal door frame tubes 35. The guide rails 352 adopt hook structures.

**[0027]** In the foregoing structures, groove portions 360 formed from outward depression are arranged on the vertical supporting and fixing frame tubes 36 and are fixed and mounted to a ring beam of a rack 1 by means of fourth fasteners, so that the fourth fasteners are concealed in the groove portions 360 and not exposed.

**[0028]** In the foregoing structures, only one double-rib structure 361 used for fitting a vertical sliding door border tube 32 is arranged on the inner side of each vertical supporting and fixing border tube 36.

**[0029]** As an optimization: Side panels 4 are further mounted in a fit manner on the two sides of the rack 1 and between the corresponding door frame structure and canopy structure. The side panels 4 adopt triangular structures, so that the canopy structure in the present utility model is in a tilted state. The canopy structure 2 comprises a plurality of roof panels arranged in a stepped manner and can be opened and closed by sliding the roof panels. Specifically, lower roof panels slide to the lower ends of higher roof panels to open the canopy. On the contrary, the canopy can be closed. The canopy structure 2 is prior art and can achieve the sliding of roof panels manually or electrically.

**[0030]** As an optimization: The guide wheel assembly 34 in the present utility model is a retractable structure with an adjustable height to facilitate the adjustment to the balance of the sliding door. The guide wheel assembly 34 can be achieved using prior art.

**[0031]** The foregoing door panel 30 is a glass pane, and the foregoing side panels 4 are polycarbonate hollow sheets. The foregoing fasteners are all tapping screws.

**[0032]** The present utility model has the following features:

1) The vertical sliding door border tubes 32 adopt vertically symmetric structures and the holes and slots matched with the vertical sliding door border tubes are all designed to be symmetric to simplify the process and avoid confusion during assembly;

2) The horizontal sliding door border tubes 31 are designed to have first openings and fasteners are used to simplify the assembly between the horizontal sliding door border tubes and the vertical sliding door border tubes;

3) Non-metallic parts 33 are built in the two ports of each vertical sliding door border tube 32, and the horizontal sliding door border tubes 31 are fixed with tapping screws through the guide holes 330 of the non-metallic parts 33, resulting in effects of guid-

ance, reinforcement, and reducing noise during sliding of the sliding door;

4) Only one double-rib structure 361 is provided for each vertical supporting and fixing frame tube 36 to fit the vertical sliding door border tubes 32. There are no redundant exposed double-ribs and the appearance is better;

5) The vertical supporting and fixing frame tubes 36 are designed to have groove portions 360, and the screw heads are arranged inside the groove portions and not exposed, so the appearance is better;

6) The vertical sliding door border tubes 32 and the chute tubes 322 are designed to be split buckle structures, to minimize the border tubes of the sliding door and simplify the manufacturing process of the vertical sliding door border tubes 32. The left vertical sliding door border tube 32 and the right vertical sliding door border tube 32 are interchangeable and it is not necessary to produce two types of vertical sliding door border tubes;

7) Second openings 351 are arranged on the horizontal door frame tubes 35 and tapping screws are used to simplify the assembly between the horizontal door frame tubes 35 and the vertical supporting and fixing frame tubes 36.

**[0033]** Lastly it should be noted that the foregoing embodiments are intended to describe and not to limit the technical solutions of the present utility model. Although the present utility model has been illustrated by referring to the foregoing embodiments, those of ordinary skills in the art should understand that they still can modify the technical solutions of the foregoing embodiments, or equivalently replace some or all of the technical features therein; and such modifications or replacements will not result in essential departure of the corresponding technical solutions from the scope of the technical solutions of the embodiments of the present utility model.

## Claims

1. A fast-assembled sliding door assembly for an outdoor tent, comprising a door frame structure and sliding doors that are slidably embedded in the door frame structure, each sliding door comprising a door panel (30) and a border structure surrounding the door panel (30), the border structure comprising an upper horizontal sliding door border tube (31), a lower horizontal sliding door border tube (31), a left vertical sliding door border tube (32) and a right vertical sliding door border tube (32), which are mounted in a fit manner by means of first fasteners, wherein non-metallic parts (33) are built in the upper and lower

ends of the vertical sliding door border tubes (32), respectively, the non-metallic parts (33) have guide holes (330), and the guide holes (330) are used to provide guidance for the connection of the first fasteners between the horizontal sliding door border tubes (31) and the vertical sliding door border tubes (32).

2. The fast-assembled sliding door assembly for an outdoor tent according to claim 1, wherein the horizontal sliding door border tubes (31) comprise horizontal sliding door border tube bodies (310) and horizontal sliding door border tube slots (311) used for mounting the door panel (30), and a guide wheel assembly (34) is mounted in a fit manner inside the horizontal sliding door border tube body (310) of at least one of the upper horizontal sliding door border tube (31) and the lower horizontal sliding door border tube (31); a guide wheel frame (340) of the guide wheel assembly (34) is mounted to the vertical sliding door border tubes (32) by means of second fasteners, the non-metallic parts (33) have guide slots (331), and the guide slots (331) are used to provide guidance for the connection of the second fasteners between the guide wheel frame (340) and the vertical sliding door border tubes (32). 10
3. The fast-assembled sliding door assembly for an outdoor tent according to claim 2, wherein the guide holes (330) on the non-metallic parts (33) are aligned with first mounting holes (312) on the horizontal sliding door border tubes (31) and second mounting holes (320) on the vertical sliding door border tubes (32), respectively, and the first fasteners are simultaneously connected to the second mounting holes (320), the guide holes (330) and the first mounting holes (312); the guide slots (331) on the non-metallic parts (33) are aligned with third mounting holes (3400) on the guide wheel frame (340) and mounting ports (321) on the vertical sliding door border tubes (32), respectively, and the second fasteners are simultaneously connected to the mounting ports (321), the guide slots (331) and the third mounting holes (313). 15
4. The fast-assembled sliding door assembly for an outdoor tent according to claim 3, wherein the first mounting holes (312) are first openings, which are formed by first grooves (313) arranged on the horizontal sliding door border tube bodies (310). 20
5. The fast-assembled sliding door assembly for an outdoor tent according to claim 1, wherein the vertical sliding door border tubes (32) adopt vertically symmetric structures. 25
6. The fast-assembled sliding door assembly for an outdoor tent according to claim 1, wherein the non-me-

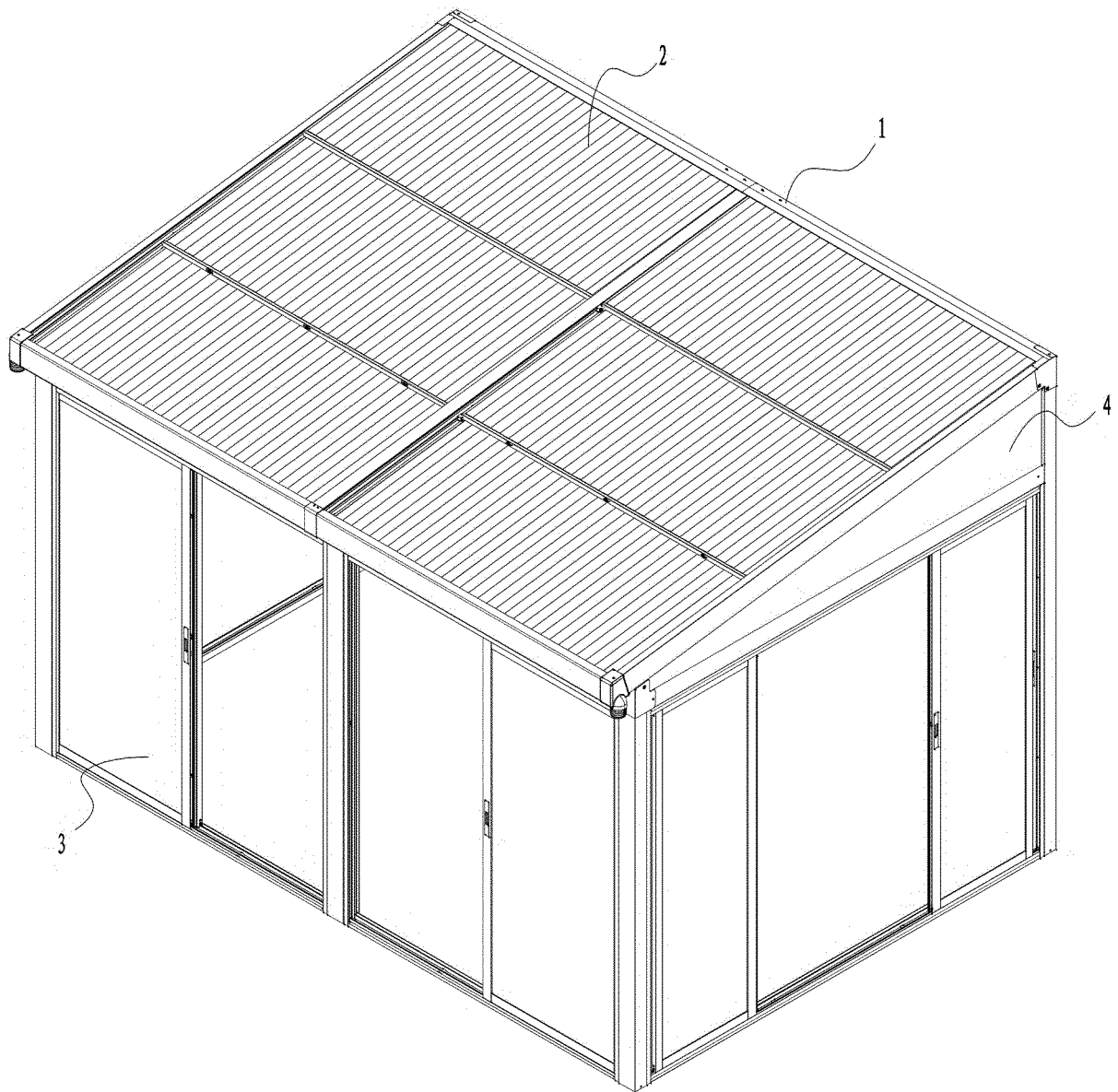
tallic parts (33) adopt plastic structures.

7. The fast-assembled sliding door assembly for an outdoor tent according to any of claims 1 to 6, wherein the door frame structure comprises an upper horizontal door frame tube (35), a lower horizontal door frame tube (35), a left vertical supporting and fixing frame tube (36) and a right vertical supporting and fixing frame tube (36), the four frame tubes are mounted in a fit manner, second grooves (350) are arranged on main bodies of the horizontal door frame tubes (35), the second grooves (350) form second openings (351) and the second openings (351) are fixed and mounted to the corresponding vertical supporting and fixing frame tubes (36) by means of third fasteners. 5
8. The fast-assembled sliding door assembly for an outdoor tent according to claim 7, wherein groove portions (360) formed from outward depression are arranged on the vertical supporting and fixing frame tubes (36) and fixed and mounted to a ring beam of a rack (1) by means of fourth fasteners, so that the fourth fasteners are concealed in the groove portions (360) and not exposed. 10
9. The fast-assembled sliding door assembly for an outdoor tent according to claim 7, wherein only one double-rib structure (361) used for fitting a vertical sliding door border tube (32) is arranged on the inner side of each vertical supporting and fixing frame tube (36); and guide rails (352) are arranged on the main body of at least one of the two horizontal door frame tubes (35). 15
10. The fast-assembled sliding door assembly for an outdoor tent according to any of claims 1 to 6, wherein chute tubes (322) on the vertical sliding door border tubes (32) are snap-fit with the vertical sliding door border tubes (32). 20

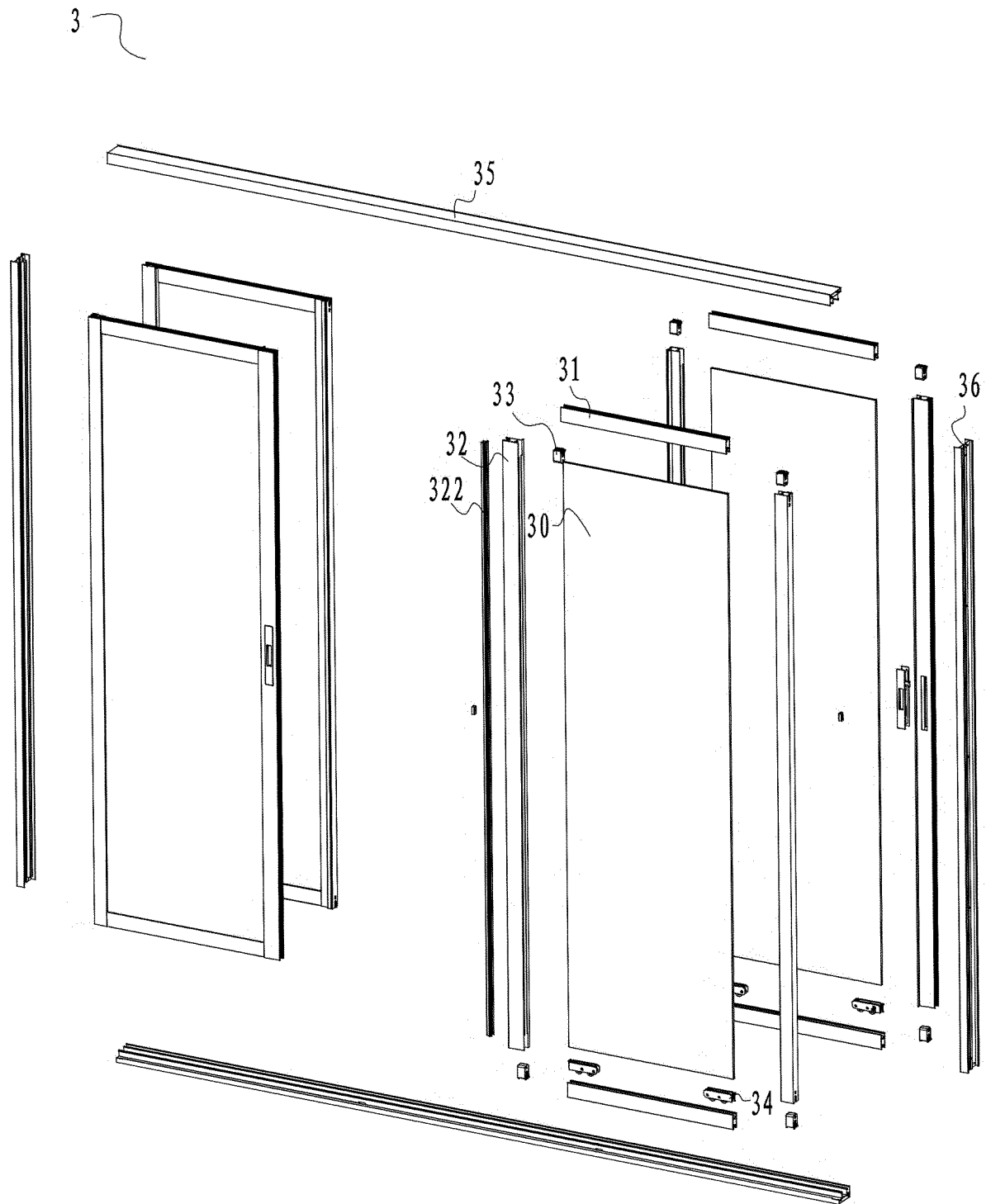
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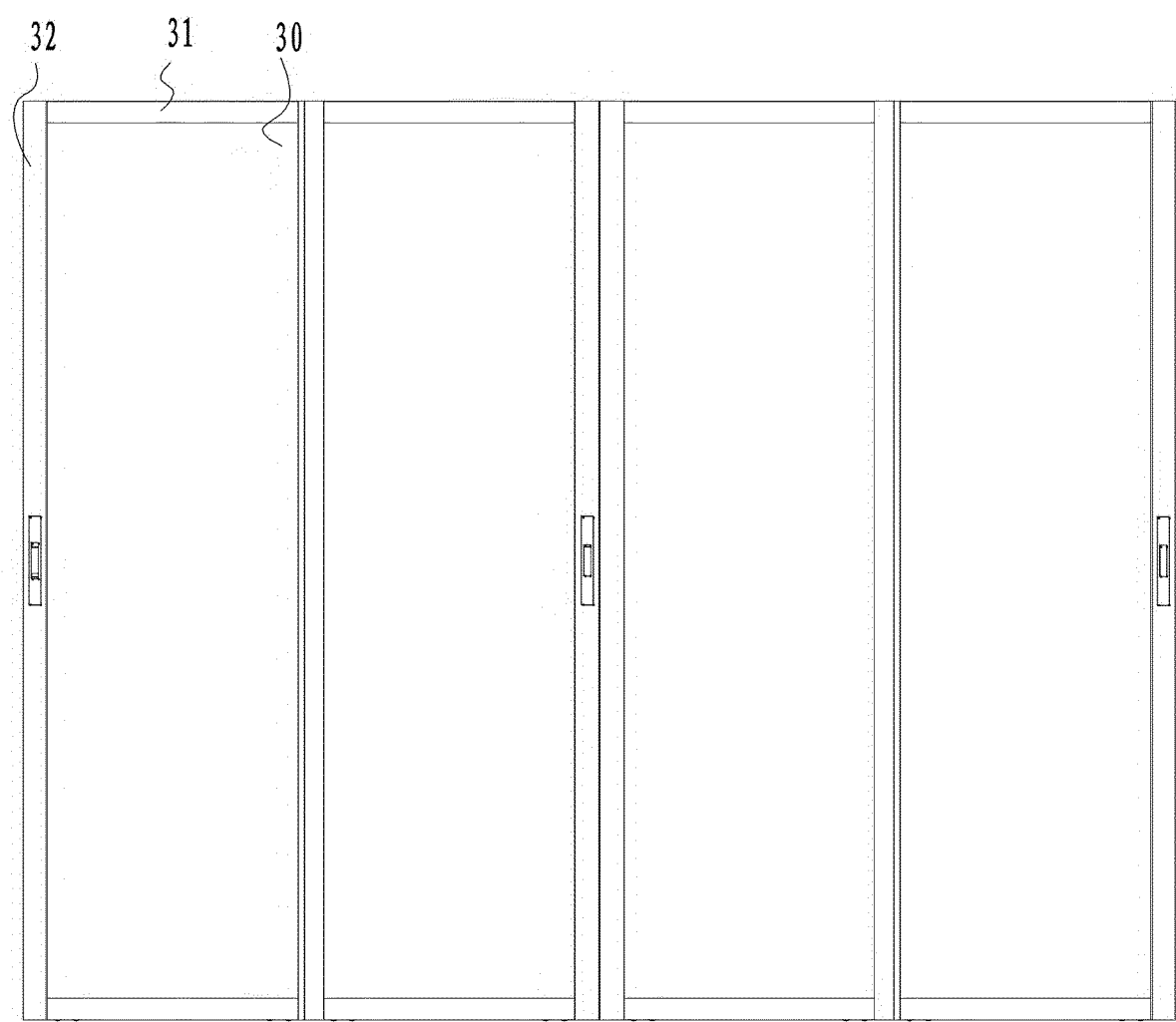


[Figure No.] Fig. 1

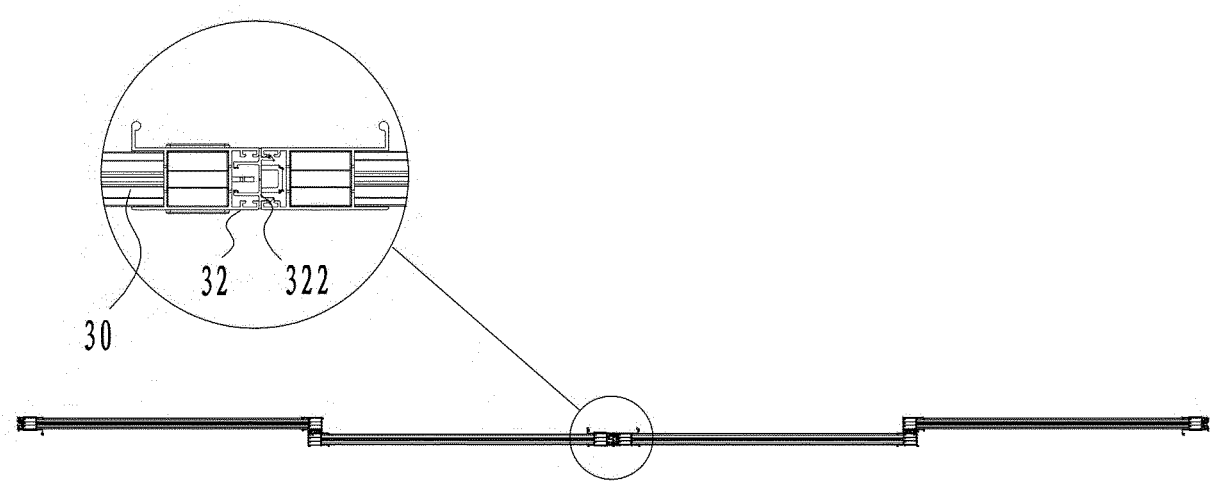


[Figure No.] Fig. 2

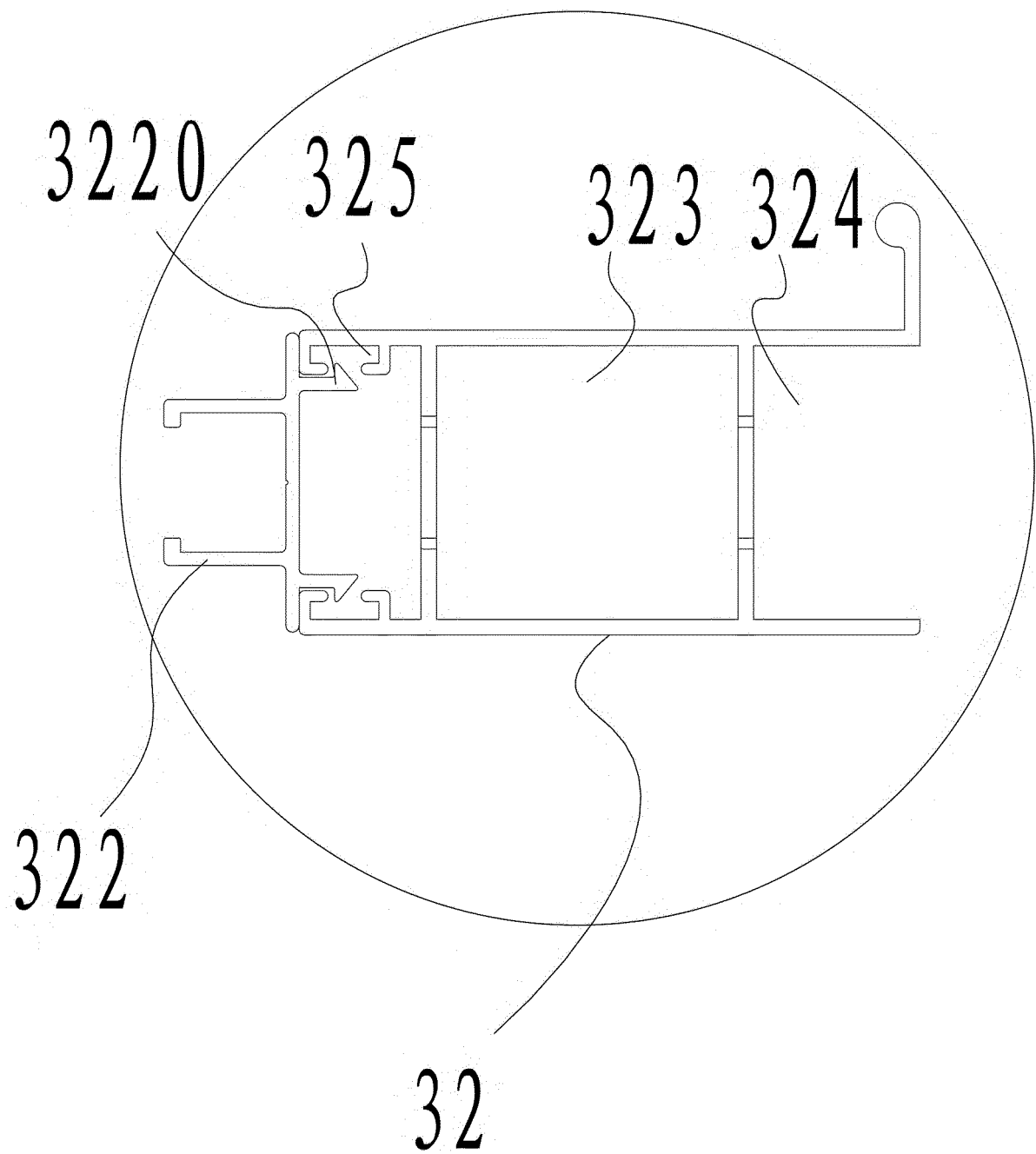




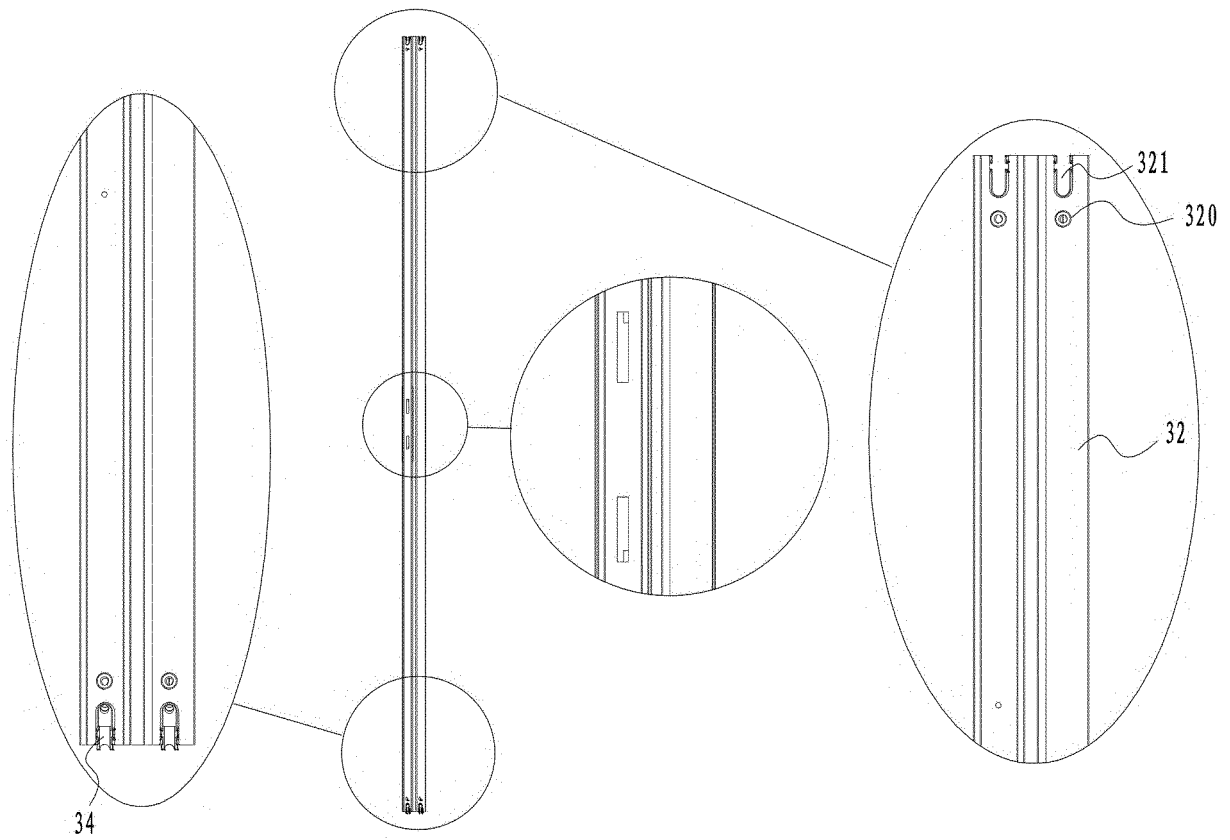
[Figure No.] Fig. 3



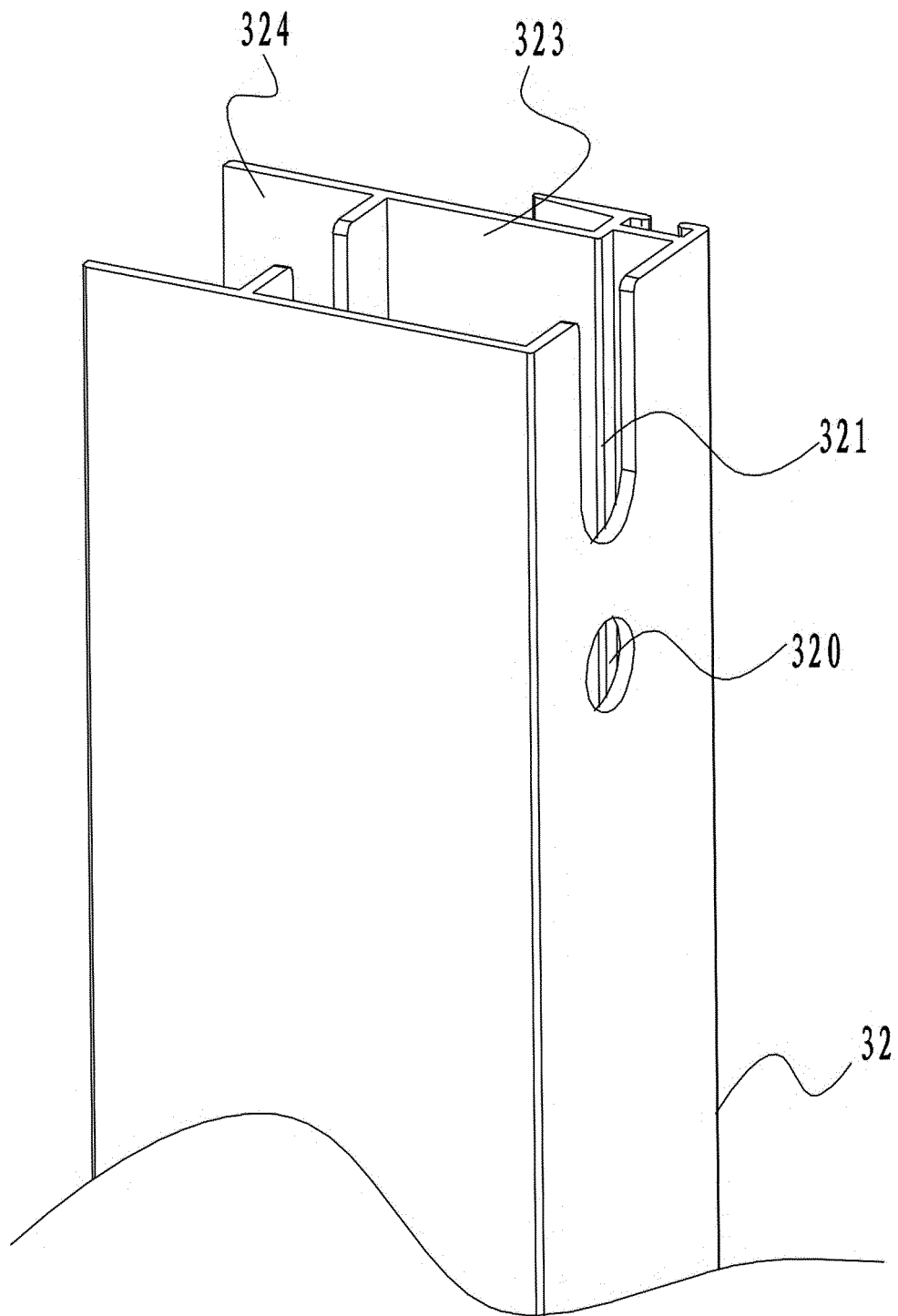
[Figure No.] Fig. 4



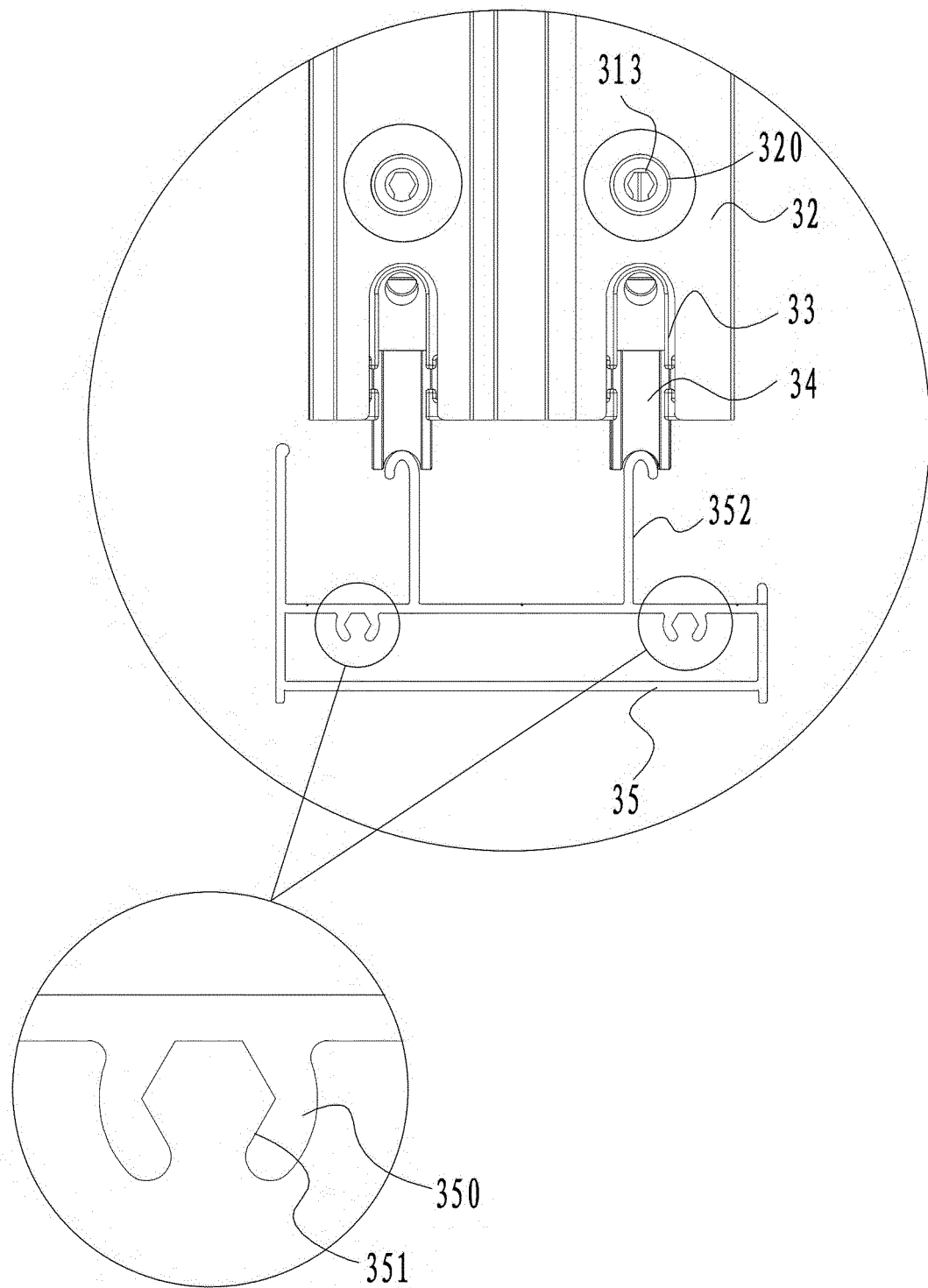
[Figure No.] Fig. 5



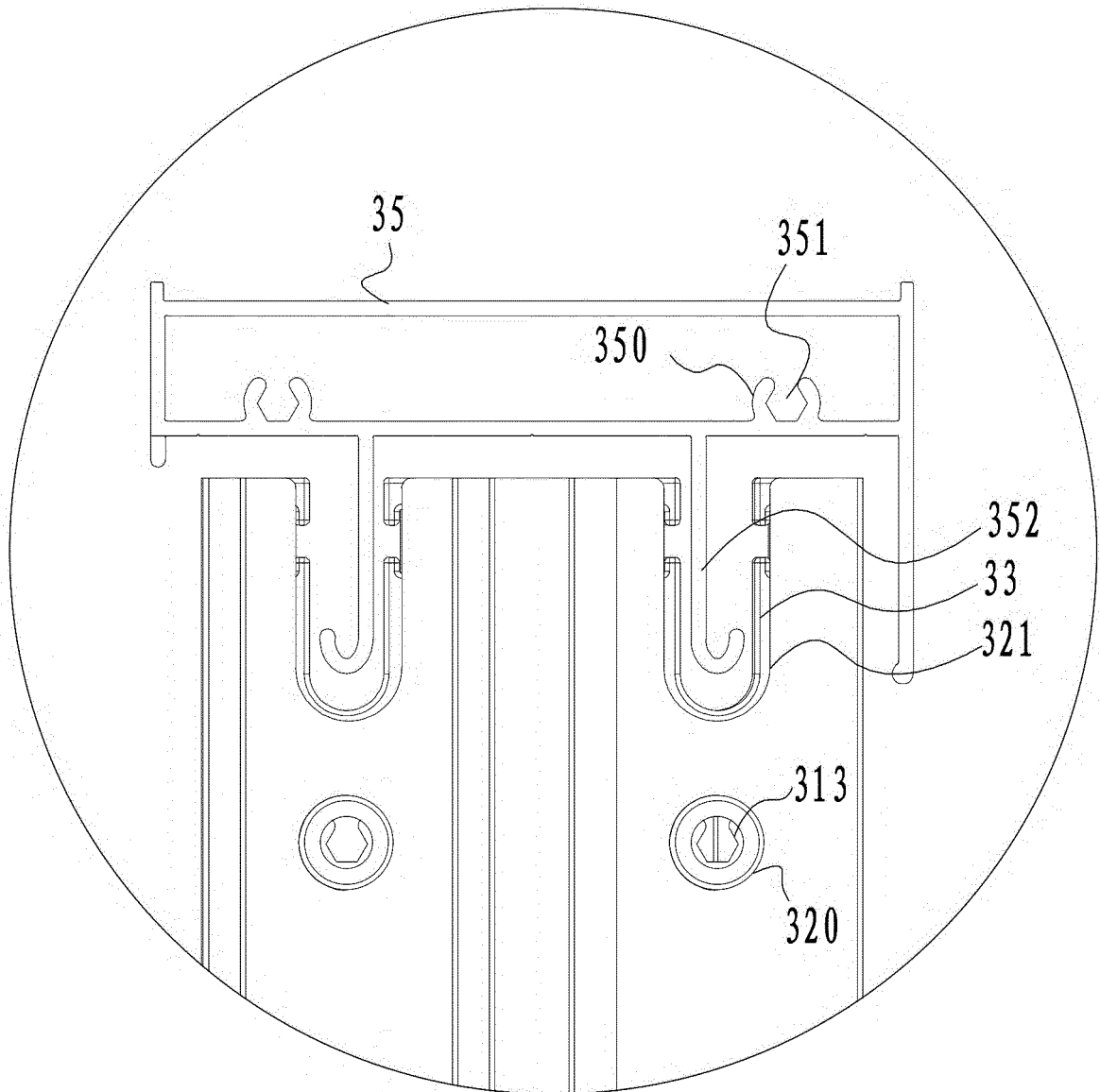
[Figure No.] Fig. 6



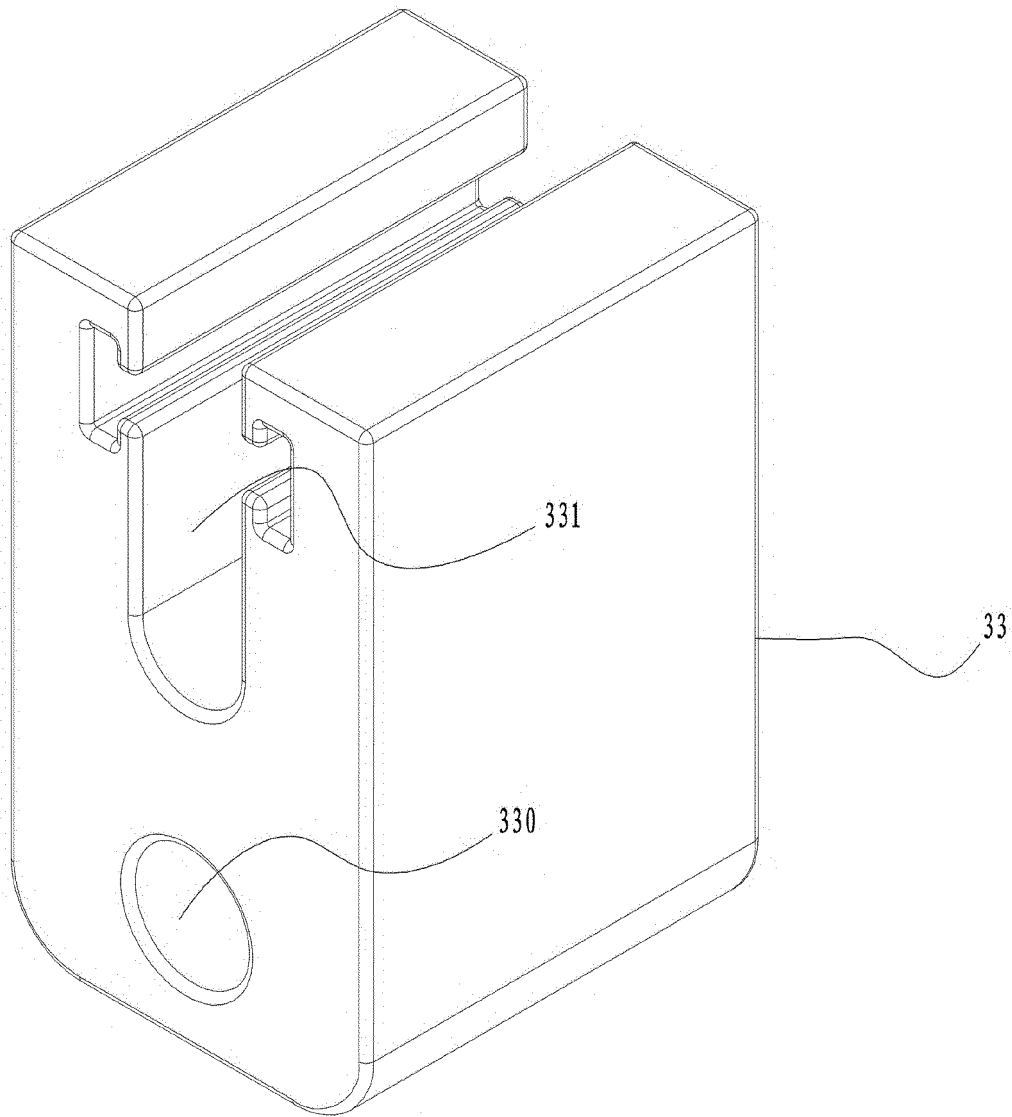
[Figure No.] Fig. 7



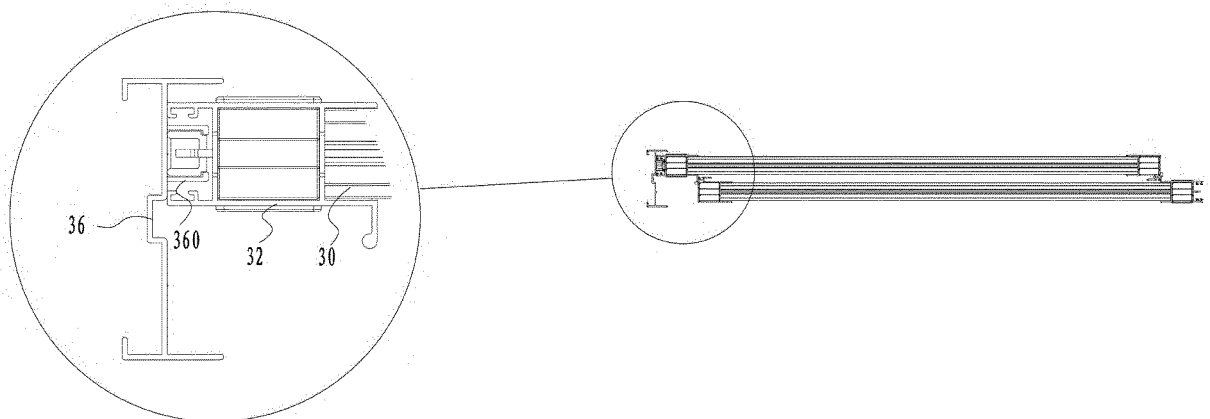
[Figure No.] Fig. 8



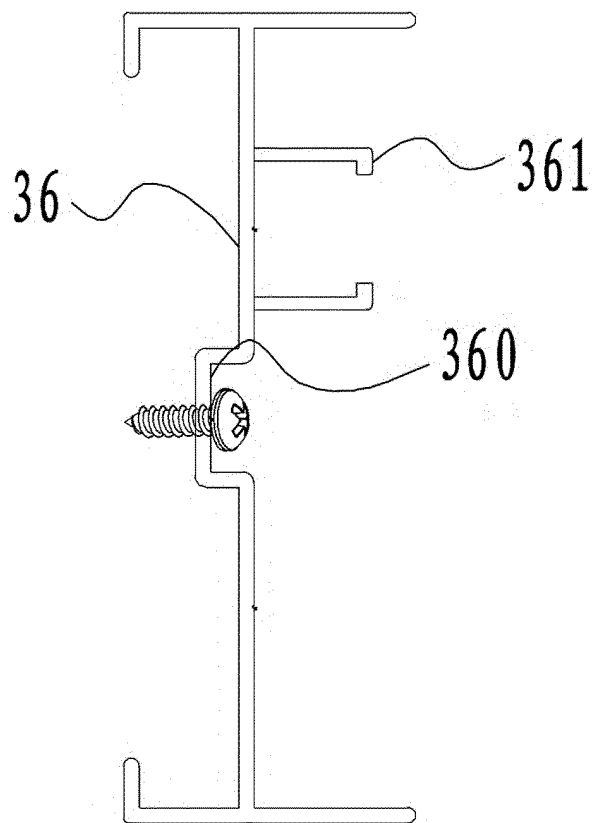
[Figure No.] Fig. 9



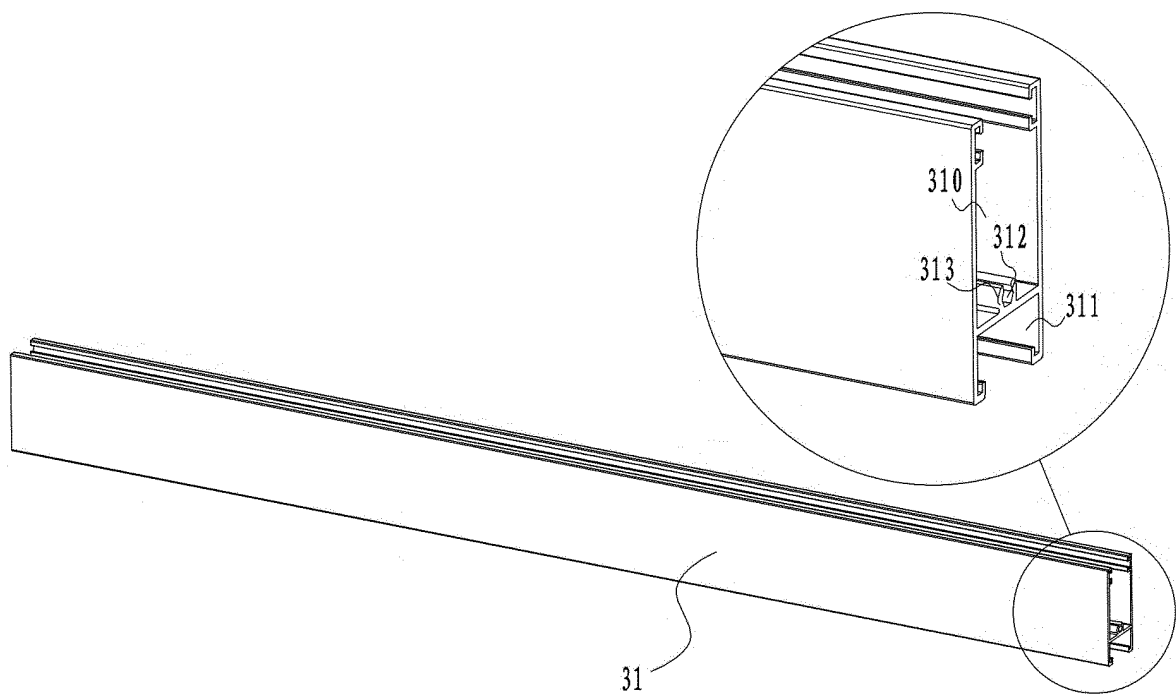
[Figure No.] Fig. 10



[Figure No.] Fig. 11

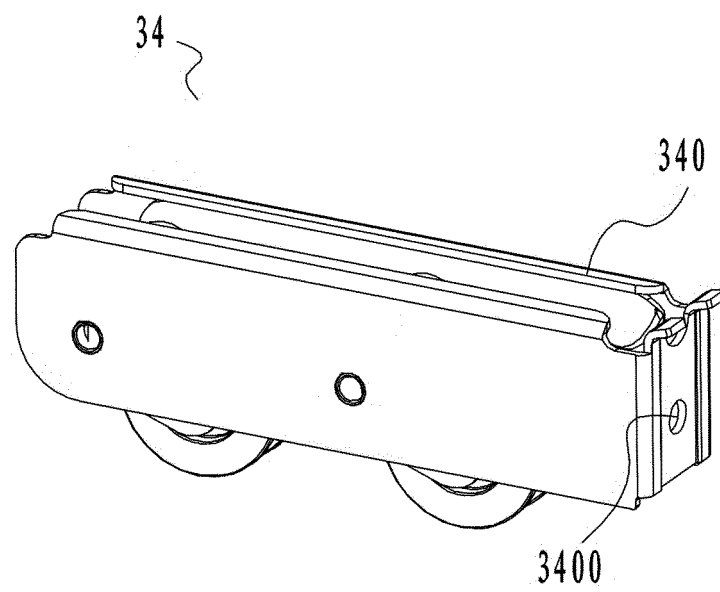


[Figure No.] Fig. 12



[Figure No.] Fig. 13





[Figure No.] Fig. 14



## EUROPEAN SEARCH REPORT

Application Number

EP 21 19 5955

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EPO FORM 1503 03.82 (P04C01)

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2 The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>16 January 2022</b>	Examiner <b>Demeester, Jan</b>
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