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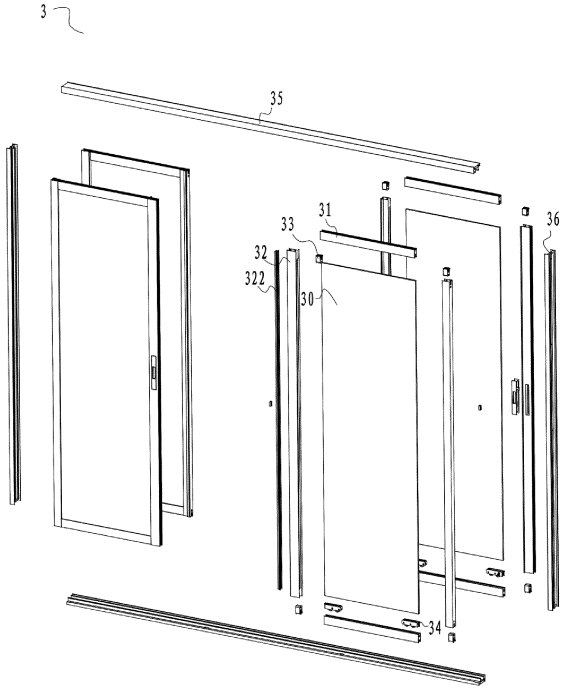
(54) OUTDOOR SLIDING DOOR AWNING

(57) The present invention belongs to the field of outdoor articles, and particularly relates to an outdoor sliding door awning. The outdoor sliding door awning comprises a rack, wherein an awning top structure is installed at the top of the rack in a matched mode, a sliding door assembly is installed on at least one side of the rack in a matched mode, the sliding door assembly comprises a door frame structure and a sliding door embedded in the door frame structure in a sliding mode, the sliding door comprises a door plank and a side frame structure arranged on the periphery of the door plank in a surrounding mode, the side frame structure comprises an upper transverse sliding door side frame pipe, a lower transverse sliding door side frame pipe, a left vertical sliding door side frame pipe and a right vertical sliding door side frame pipe, the four side frame pipes are installed in a matched mode through first fasteners, non-metal pieces are installed in the upper ends and the lower ends of the vertical sliding door side frame pipes respectively, the non-metal pieces are provided with guiding holes, and the guiding holes are used for providing guidance for connection of the first fasteners between the transverse sliding door side frame pipes and the vertical sliding door side frame pipes. The beneficial effects of the present invention are as follows: the non-metal pieces are arranged in the two end openings of the vertical sliding door side frame pipes, the transverse sliding door side frame pipes are fixed through the guiding holes of the non-metal pieces by using self-tapping screws, and the effects of guiding, reinforcing, and reducing the sliding noises of the sliding door and the like can be achieved.



【Figure No.】 Fig. 2

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Description

TECHNICAL FIELD

[0001] The present invention belongs to the field of outdoor articles, and particularly relates to an outdoor sliding door awning.

BACKGROUND ART

[0002] Outdoor sliding door awning is a kind of outdoor awning product. It generally comprises a rack to form the main body of the outdoor sliding door awning. An awning top structure that can be opened and closed is provided on the top of the rack, and a sliding door assembly is provided on the periphery of the rack. The sliding door assembly comprises a door frame structure fixed on the rack and a sliding door that can be opened and closed on the door frame structure. The sliding door comprises a side frame structure and a door body embedded in the side frame structure, wherein the traditional side frame structure is generally composed of two transverse sliding door side frame pipes and two vertical sliding door side frame pipes, and the traditional door frame structure comprises two transverse door frame pipes and two vertical supporting and fixing frame pipes. The problems of the prior art are as follows: 1. It is troublesome to assemble the four side frame pipes. In particular, it is difficult to align the hole positions if they are fixed by screws. Because the side frame structure is a rectangular structure, the entire side frame cannot be assembled correctly when there is an error in the assembly of a certain corner. 2. The sliding door assembly is too noisy when it is opened and closed. 3. The structure of the vertical sliding door side frames is asymmetrical, resulting in complicated processing technology. 4. The mounting structure between the transverse door frame pipes and the vertical supporting and fixing frame pipes is complicated, resulting in laborious installation. 5. When mounting the vertical supporting and fixing frame pipes and the ring beam of the rack, the screws must be screwed from the inner side of the side frames of the vertical door frames so that the screws are exposed, which affects the appearance. 6. The inner side of the traditional vertical supporting and fixing frame pipes is provided with two double-reinforced structures for mating with the vertical sliding door side frame pipes, but only one double-reinforced structure is used in actual use, and the other extra double-reinforced structure affects the appearance. 7. The chute pipe is a kind of groove pipe structure integrally formed with the vertical shifting door side frame pipes of the sliding door, and the chute pipe is used to contact the door frame or another sliding door when the sliding door is closed, playing a sealing role. Because only some of the vertical sliding door side frame pipes need to be equipped with chute pipes, it is often necessary to process both vertical sliding door side frame pipes with chute pipes and vertical sliding door side frame pipes without chute pipes during processing, making the processing very troublesome, and the vertical sliding door side frame pipes without chute pipes and the vertical sliding door side frame pipes without chute pipes are not interchangeable, making assembly inconvenient.

SUMMARY OF THE INVENTION

[0003] In order to make up for the shortcomings of the prior art, the present invention provides a technical solution for an outdoor sliding door awning.

[0004] The outdoor sliding door awning comprises a rack, wherein an awning top structure is installed at the top of the rack in a matched mode, a sliding door assembly is installed on at least one side of the rack in a matched mode, the sliding door assembly comprises a door frame structure and a sliding door embedded in the door frame structure in a sliding mode, the sliding door comprises a door plank and a side frame structure arranged on the periphery of the door plank in a surrounding mode, the side frame structure comprises an upper transverse sliding door side frame pipe, a lower transverse sliding door side frame pipe, a left vertical sliding door side frame pipe and a right vertical sliding door side frame pipe, the four side frame pipes are installed in a matched mode through first fasteners, non-metal pieces are installed in the upper ends and the lower ends of the vertical sliding door side frame pipes respectively, the non-metal pieces are provided with guiding holes, and the guiding holes are used for providing guidance for connection of the first fasteners between the transverse sliding door side frame pipes and the vertical sliding door side frame pipes.

[0005] The outdoor sliding door awning, wherein the transverse sliding door side frame pipe comprises a transverse sliding door side frame pipe body and a transverse sliding door side frame pipe groove for installing the door plank, a guide wheel assembly is installed in a matched mode in the transverse sliding door side frame pipe body of at least one transverse sliding door side frame pipe of the upper and lower transverse sliding door side frame pipes, a guide wheel frame of the guide wheel assembly and the vertical sliding door side frame pipes are installed by second fasteners, and the non-metal pieces are provided with guide grooves, and the guide groove are used for providing guidance for connection of the second fasteners between the guide wheel frame and the vertical sliding door side frame pipes.

[0006] The outdoor sliding door awning, wherein the guiding holes on the non-metal pieces are respectively aligned with first mounting holes on the transverse sliding door side frame pipes and second mounting holes on the vertical sliding door side frame pipes, the first fasteners are connected simultaneously with the second mounting holes, the guiding holes and the first mounting holes, the guide grooves on the non-metal pieces are respectively aligned with third mounting holes on the transverse sliding door side frame pipes and mounting openings on the vertical sliding door side frame pipes, and the second

fasteners are simultaneously connected to the mounting openings, the guide grooves and the mounting holes.

[0007] The outdoor sliding door awning, wherein the first mounting holes are first opening holes, which are formed by first groove strips on the transverse sliding door side frame pipe body.

[0008] The outdoor sliding door awning, wherein the vertical sliding door side frame pipes are horizontally symmetric in structure.

[0009] The outdoor sliding door awning, wherein the door frame structure comprises an upper and a lower transverse door frame pipes and a left and a right vertical supporting and fixing frame pipes, the four frame pipes are installed in a matched mode, the main bodies of the transverse door frame pipes are provided with second groove strips, the second groove strips form second opening holes, and the second opening holes and the corresponding vertical supporting and fixing frame pipes are fixedly installed by third fasteners.

[0010] The outdoor sliding door awning, wherein the vertical supporting and fixing frame pipes are provided with groove portions recessed toward the outside, and the groove portions are fixedly installed with ring beams of the frame by fourth fasteners, so that the fourth fasteners are hidden in the groove portions without being exposed.

[0011] The outdoor sliding door awning, wherein only one double-reinforced structure is provided inside the vertical supporting and fixing frame pipes for mating with the vertical sliding door side frame pipes; and a guide rail for mating with the guide wheel is provided on the body of at least one transverse door frame pipe of the two transverse door frame pipes.

[0012] The outdoor sliding door awning, wherein chute pipes on the vertical sliding door side frame pipes are snap-fitted with it.

[0013] The outdoor sliding door awning, wherein the awning top structure comprises a plurality of top plates arranged in steps, and the awning top structure can be opened and closed through the sliding of the top plates.

[0014] The beneficial effects of the present invention are as follows:

1) The vertical sliding door side frame pipes are of a symmetrical structure from top to bottom, and their matching holes and slots are all symmetrically designed, thereby simplifying the process and making it difficult to be confused during assembly;

2) The transverse sliding door side frame pipes are designed with first opening holes, which are easy to assemble with fasteners, so that the assembly of the transverse sliding door side frame pipes and the vertical sliding door side frame pipes is simplified;

3) The non-metal pieces are arranged in the two end openings of the vertical sliding door side frame pipes, the transverse sliding door side frame pipes are fixed through the guiding holes of the non-metal pieces by fasteners, and the effects of guiding, reinforcing, and reducing the sliding noises of the sliding door and the like can be achieved;

4) The vertical supporting and fixing frame pipes are only equipped with a single-sided double-reinforced structure to cooperate with the vertical sliding door side frame pipes, and there is no redundant exposed double reinforcement, making them more aesthetically pleasing;

5) The vertical supporting and fixing frame pipes are designed with groove portions, and the fasteners are placed in the groove portions, making them more aesthetically pleasing;

6) The vertical sliding door side frame pipes and the chute pipes are designed as a separate clamping structure, which minimizes the sliding door side frame pipes and simplifies the manufacturing process of the vertical sliding door side frame pipes. The left and right vertical sliding door side frame pipes can be replaced, and there is no need to produce two vertical types of sliding door side frame pipes;

7) The transverse door frame pipes are provided with second opening holes, which are easy to assemble with fasteners, thereby simplifying the assembly between the transverse door frame pipes and the vertical supporting and fixing frame pipes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

Fig. 1 is a schematic diagram of a structure of the present invention;

Fig. 2 is a schematic diagram of a decomposition structure of a sliding door assembly of the present invention;

Fig. 3 is a schematic front view of a sliding door of the present invention, showing 4 sliding doors;

Fig. 4 is a schematic overhead view of a structure of a sliding door of the present invention, showing 4 sliding doors;

Fig. 5 is a schematic diagram of an end face of a vertical sliding door side frame pipe and a chute pipe when connected in the present invention;

Fig. 6 is a schematic diagram of the right side structure of a vertical sliding door side frame pipe of the present invention, and two vertical sliding door side frame pipes are shown in the figure;

Fig. 7 is a schematic structural diagram of a partial enlarged view of a vertical sliding door side frame pipe of the present invention;

Fig. 8 is a schematic diagram of a connection structure between a vertical sliding door side frame pipe and a transverse door frame pipe located at the lower end in the present invention;

Fig. 9 is a schematic diagram of a connection structure between a vertical sliding door side frame pipe and a transverse door frame pipe located at the upper end in the present invention;

Fig. 10 is a schematic diagram of a structure of a non-metal piece of the present invention;

Fig. 11 is a schematic diagram of a connection structure of a vertical supporting and fixing frame pipe and a vertical sliding door side frame pipe in the present invention;

Fig. 12 is a schematic diagram of an end surface structure of a vertical supporting and fixing frame pipe of the present invention;

Fig. 13 is a schematic diagram of a structure of a transverse sliding door side frame pipe of the present invention;

Fig. 14 is a schematic diagram of a structure of a guide wheel assembly of the present invention.

DETAILED DESCRIPTION

[0016] The present invention is further described as below in combination with the drawings.

[0017] As shown in the figure, an outdoor sliding door awning comprises a rack 1, wherein an awning top structure 2 is installed at the top of the rack 1 in a matched mode, a sliding door assembly 3 is installed on the front side, left side and right side of the rack in a matched mode, the sliding door assembly 3 comprises a door frame structure and four sliding doors embedded in the door frame structure in a sliding mode, the sliding door comprises a door plank 30 and a side frame structure arranged on the periphery of the door plank 30 in a surrounding mode, the side frame structure comprises an upper and a lower transverse sliding door side frame pipe 31 and a left and a right vertical sliding door side frame pipe 32, and the four side frame pipes are installed in a matched mode through first fasteners. Specifically, the upper and lower ends of the vertical sliding door side frame pipes 32 are respectively provided with non-metal pieces 33, the non-metal pieces 33 are provided with guiding holes 330, the guiding holes 330 are counterbores, and the guiding holes 330 are used for providing guidance for connection of the first fasteners between the transverse sliding door side frame pipes 31 and the vertical sliding door side frame pipes 32.

[0018] As an optimization, the transverse sliding door side frame pipe 31 comprises a transverse sliding door side frame pipe body 310 and a transverse sliding door side frame pipe groove 311 for installing the door plank 30, a guide wheel assembly 34 is installed in a matched mode in the transverse sliding door side frame pipe body 310 of the lower transverse sliding door side frame pipe 31, a guide wheel frame 340 of the guide wheel assembly 34 and the vertical sliding door side frame pipes 32 are installed by second fasteners, the non-metal pieces 33 are provided with guide grooves 331, and the guide grooves 331 are used for providing guidance for connection of the second fasteners between the guide wheel frame 340 and the vertical sliding door side frame pipes 32.

[0019] More specifically, the guiding holes 330 on the non-metal pieces 33 are respectively aligned with first mounting holes 312 on the transverse sliding door side frame pipes 31 and second mounting holes 320 on the vertical sliding door side frame pipes 32, the first fasteners are connected simultaneously with the second mounting holes 320, the guiding holes 330 and the first mounting holes 312, the guide grooves 331 on the non-metal pieces 33 are respectively aligned with third mounting holes 3400 on the guide wheel frame 340 and mounting openings 321 on the vertical sliding door side frame pipes 32, and the second fasteners are simultaneously connected to the mounting openings 321, the guide grooves 331 and the mounting holes 313.

[0020] Furthermore, the first mounting holes 312 are first opening holes in the shape of an inner hexagon, which are formed by first groove strips 313 on the transverse sliding door side frame pipe body 310.

[0021] As an optimization, the vertical sliding door side frame pipes 32 comprise vertical sliding door side frame pipe bodies 323 for installing non-metal pieces 33 and vertical sliding door side frame pipe slot bodies 324 for installing the transverse sliding door side frame pipes 31 and the door plank 30.

[0022] As an optimization, the non-metal pieces 33 are embedded at the port of the vertical sliding door side frame pipe bodies 323.

[0023] As an optimization, the non-metal pieces 33 are of a plastic structure.

[0024] As an optimization, the vertical sliding door side frame pipes 32 are horizontally symmetric in structure.

[0025] As an optimization, the chute pipes 322 on the vertical sliding door frame pipes 32 are snap-fitted with it. More specifically, clamping grooves 325 are provided on two sides of the vertical sliding door side frame pipes 32 facing away from the end of the door body 30, clamping strips 3220 are provided on two sides of the chute pipes 322 for clamping with the clamping grooves 325, and the clamping strips 3220 are provided with wedge-shaped protrusions that can be clamped into the clamping grooves 325.

[0026] As an optimization, the door frame structure comprises an upper and a lower transverse door frame pipe 35 and a left and a right vertical supporting and fixing frame pipe 36; the four frame pipes are installed in a matched mode, the main bodies of the transverse door frame pipes 35 are provided with second groove strips 350, the second groove strips 350 form second opening holes 351 in the shape of an inner hexagon, and the second opening holes 351 and the corresponding vertical supporting and fixing frame pipes 36 are fixedly installed by third fasteners, wherein the main bodies of the transverse door frame pipes 35 are of a rectangular pipe structure. Guide rails 352 are provided on the main bodies of the transverse door frame pipes 35, and the guide rails 352 are of a hook-shaped structure.

[0027] In the above structure, the vertical supporting and fixing frame pipes 36 are provided with groove portions 360 recessed toward the outside, and the groove

portions 360 are fixedly installed with ring beams of the frame 1 by fourth fasteners, so that the fourth fasteners are hidden in the groove portions 360 without being exposed.

[0028] In the foregoing structure, only one double-reinforced structure 361 is provided on the inner side of the vertical supporting and fixing frame pipes 36 for cooperating with the vertical sliding door side frame pipes 32.

[0029] As an optimization, side panels 4 are installed in a matched mode between the corresponding door frame structure and the awning top structure on the two sides of the rack 1. The side panels 4 are of a triangular structure, so that the awning top structure of the present invention is inclined. The awning top structure 2 comprises a plurality of top plates arranged in steps, and the awning top structure 2 can be opened and closed through the sliding of the top plates. Specifically, the lower top panels slide to the lower end of the higher top panels so as to realize the opening of the awning, and vice versa, namely realizing the closing of the awning. The awning top structure 2 is a well-known technology, which can realize the sliding of the top panels by manual or electric means.

[0030] As an optimization, the guide wheel assembly 34 in the present invention is a retractable structure, and the upper and lower heights are adjustable, making it convenient to adjust the balance of the sliding door. The guide wheel assembly 34 can be realized by well-known technology.

[0031] The aforementioned door plank 30 is a glass plank, and the side panels 4 are sunlight panels. The above-mentioned fasteners are all self-tapping screws.

[0032] The features of the present invention are as follows:

1) The vertical sliding door side frame pipes 32 are of a symmetrical structure from top to bottom, and their matching holes and slots are all symmetrically designed, thereby simplifying the process and making it difficult to be confused during assembly;

2) The transverse sliding door side frame pipes 31 are designed with first opening holes, which are easy to assemble using self-tapping screws, so that the assembly of the transverse sliding door side frame pipes and the vertical sliding door side frame pipes is simplified;

3) The non-metal pieces 33 are arranged in the two end openings of the vertical sliding door side frame pipes 32, the transverse sliding door side frame pipes 31 are fixed through the guiding holes 330 of the non-metal pieces 33 by self-tapping screws, and the effects of guiding, reinforcing, and reducing the sliding noises of the sliding door and the like can be achieved;

4) The vertical supporting and fixing frame pipes 36 are only equipped with a single-sided double-reinforced structure 361 to cooperate with the vertical sliding door side frame pipes 32, and there is no redundant exposed double reinforcement, making them more aesthetically pleasing;

5) The vertical supporting and fixing frame pipes 36 are designed with groove portions 360, and the screw heads are placed in the groove portions, making them more aesthetically pleasing;

6) The vertical sliding door side frame pipes 32 and the chute pipes 322 are designed as a separate clamping structure, which minimizes the sliding door side frame pipes and simplifies the manufacturing process of the vertical sliding door side frame pipes 32. The left and right vertical sliding door side frame pipes 32 can be replaced, and there is no need to produce two vertical types of sliding door side frame pipes;

7) The transverse door frame pipes 35 are provided with second opening holes 351, which are easy to assemble using self-tapping screws, thereby simplifying the assembly between the transverse door frame pipes 35 and the vertical supporting and fixing frame pipes 36.

Finally, it should be noted that the above embodiments are only used to illustrate the technical solutions of the present invention, not to limit them. Although the present invention has been described in detail with reference to the foregoing embodiments, an ordinary person skilled in the art should understand that the technical solutions recorded in the foregoing embodiments can still be modified, or part or all of the technical features can be equivalently replaced, and such modifications or replacements do not make the essence of the corresponding technical solutions deviate from the scope of the technical solutions of the embodiments of the present invention.

Claims

1. An outdoor sliding door awning, comprising a rack (1), wherein an awning top structure (2) is installed at the top of the rack (1) in a matched mode, a sliding door assembly (3) is installed on at least one side of the rack (1) in a matched mode, the sliding door assembly (3) comprises a door frame structure and a sliding door embedded in the door frame structure in a sliding mode, the sliding door comprises a door plank (30) and a side frame structure arranged on the periphery of the door plank (30) in a surrounding mode, the side frame structure comprises an upper and a lower transverse sliding door side frame pipe (31) and a left and a right vertical sliding door side frame pipe (32), the four side frame pipes are installed in a matched mode through first fasteners, non-metal pieces (33) are installed in the upper ends and the lower ends of the vertical sliding door side frame pipes (32) respectively, the non-metal pieces (33) are provided with guiding holes (330), and the guiding holes (330) are used for providing guidance

for connection of the first fasteners between the transverse sliding door side frame pipes (31) and the vertical sliding door side frame pipes (32).

2. The outdoor sliding door awning according to claim 1, wherein the transverse sliding door side frame pipe (31) comprises a transverse sliding door side frame pipe body (310) and a transverse sliding door side frame pipe groove (311) for installing the door plank (30), a guide wheel assembly (34) is installed in a matched mode in the transverse sliding door side frame pipe body (310) of at least one transverse sliding door side frame pipe (31) of the upper and lower transverse sliding door side frame pipes (31), a guide wheel frame (340) of the guide wheel assembly (34) and the vertical sliding door side frame pipes (32) are installed by second fasteners, and the non-metal pieces (33) are provided with guide grooves (331), and the guide groove (331) are used for providing guidance for connection of the second fasteners between the guide wheel frame (340) and the vertical sliding door side frame pipes (32).

3. The outdoor sliding door awning according to claim 2, wherein the guiding holes (330) on the non-metal pieces (33) are respectively aligned with first mounting holes (312) on the transverse sliding door side frame pipes (31) and second mounting holes (320) on the vertical sliding door side frame pipes (32), the first fasteners are connected simultaneously with the second mounting holes (320), the guiding holes (330) and the first mounting holes (312), the guide grooves (331) on the non-metal pieces (33) are respectively aligned with third mounting holes (3400) on the guide wheel frame (340) and mounting openings (321) on the vertical sliding door side frame pipes (32), and the second fasteners are simultaneously connected to the mounting openings (321), the guide grooves (331) and the third mounting holes (313).

4. The outdoor sliding door awning according to claim 3, wherein the first mounting holes (312) are first opening holes, which are formed by first groove strips (313) on the transverse sliding door side frame pipe body (310).

5. The outdoor sliding door awning according to claim 1, wherein the vertical sliding door side frame pipes (32) are of a horizontally symmetric structure .

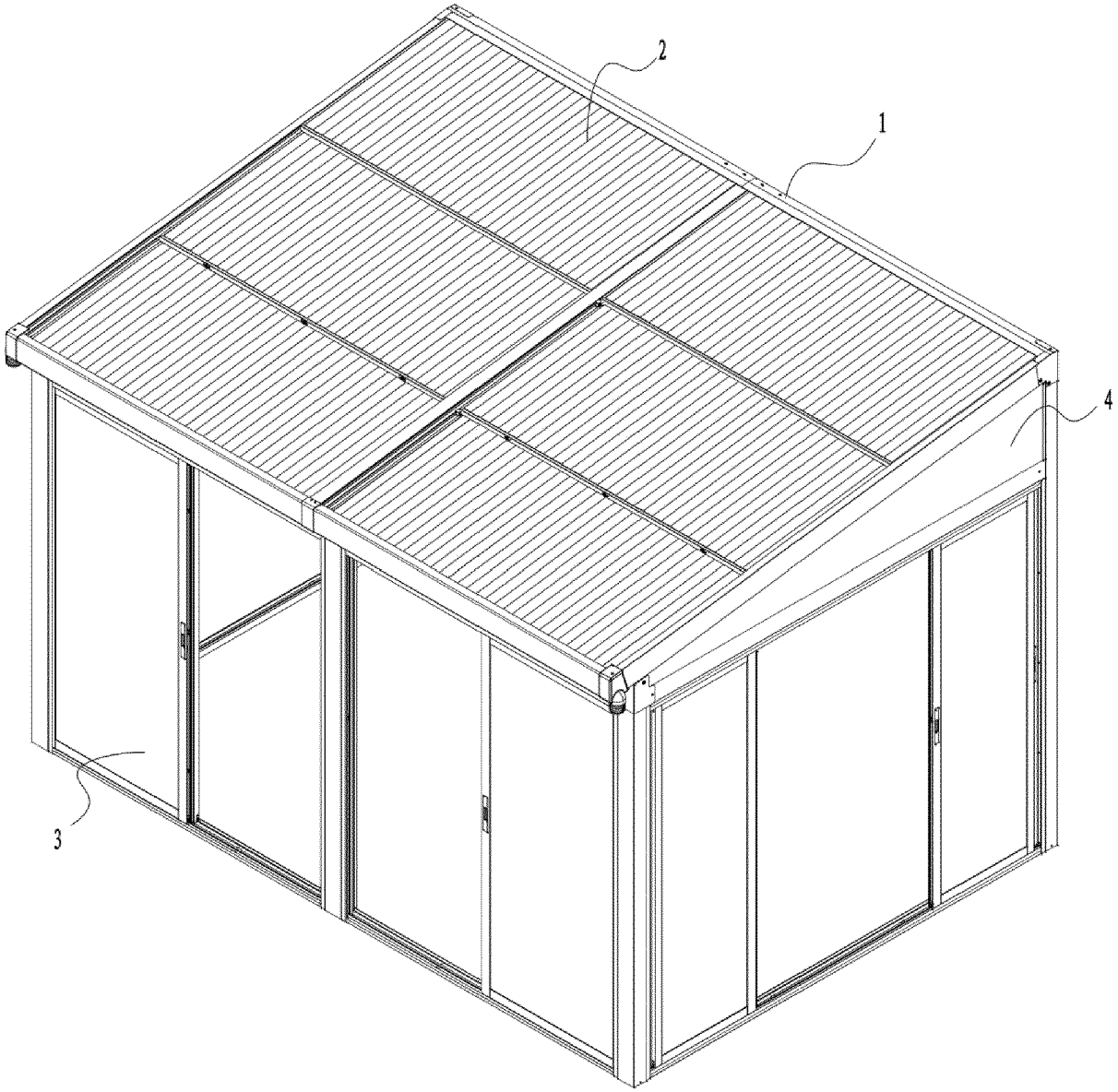
6. The outdoor sliding door awning according to any one of claims 1 to 5, wherein the door frame structure comprises an upper and a lower transverse door frame pipe (35) and a left and a right vertical supporting and fixing frame pipe (36); the four frame pipes are installed in a matched mode, the main bodies of the transverse door frame pipes (35) are provided with second groove strips (350), the second groove strips (350) form second opening holes (351), and the second opening holes (351) and the corresponding vertical supporting and fixing frame pipes (36) are fixedly installed by third fasteners.

7. The outdoor sliding door awning according to claim 6, wherein the vertical supporting and fixing frame pipes (36) are provided with groove portions (360) recessed toward the outside, and the groove portions (360) are fixedly installed with ring beams of the frame (1) by fourth fasteners, so that the fourth fasteners are hidden in the groove portions (360) without being exposed.

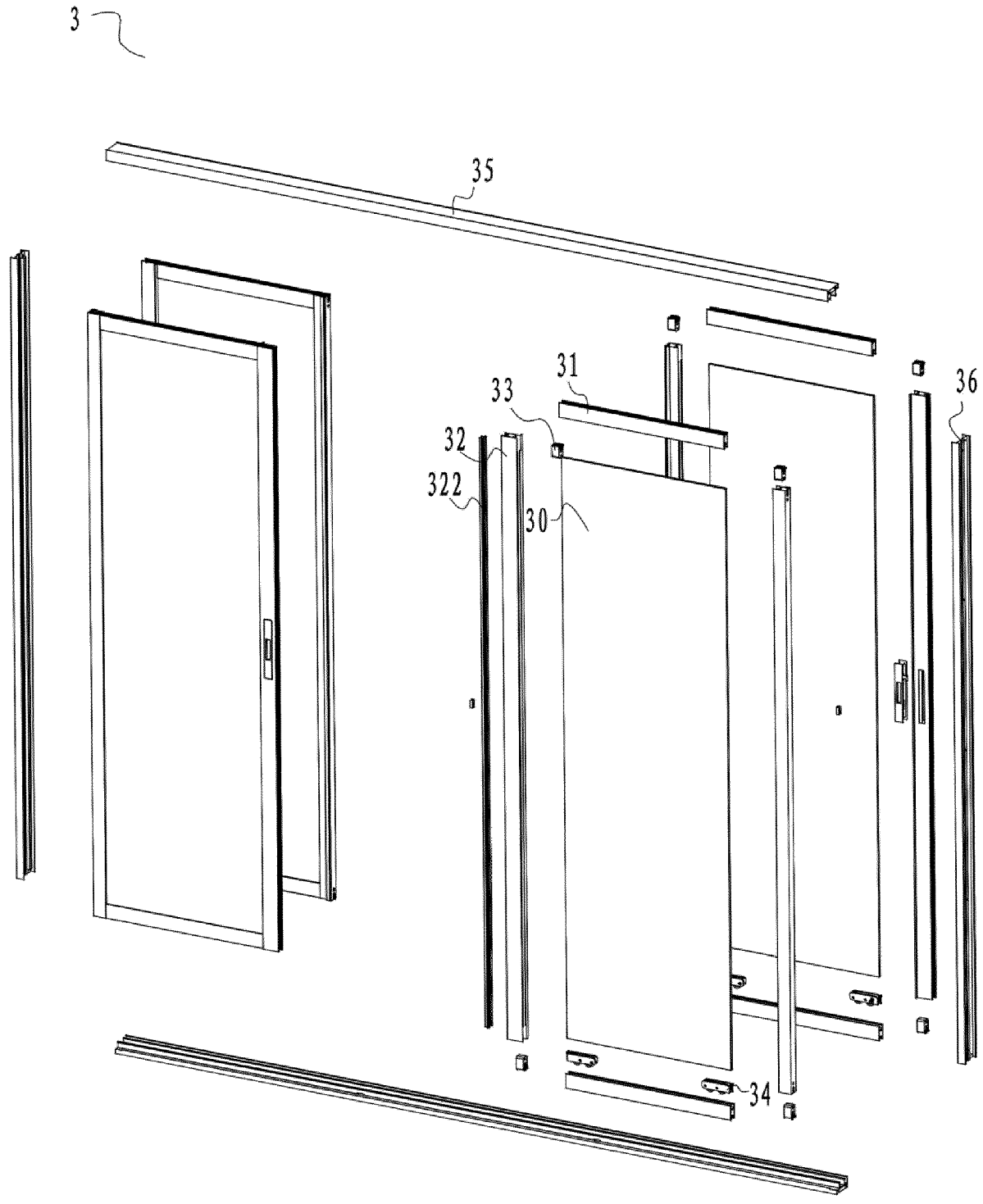
8. The outdoor sliding door awning according to claim 7, wherein only one double reinforcement structure (361) is provided inside the vertical supporting and fixing frame pipes (36) for matching with the vertical sliding door side frame pipes (32); and a guide rail (352) is provided on the body of at least one transverse door frame pipe (35) of the two transverse door frame pipes (35).

9. The outdoor sliding door awning according to any of claims 1 to 5, wherein chute pipes (322) on the vertical sliding door side frame pipes (32) are snap-fitted with it.

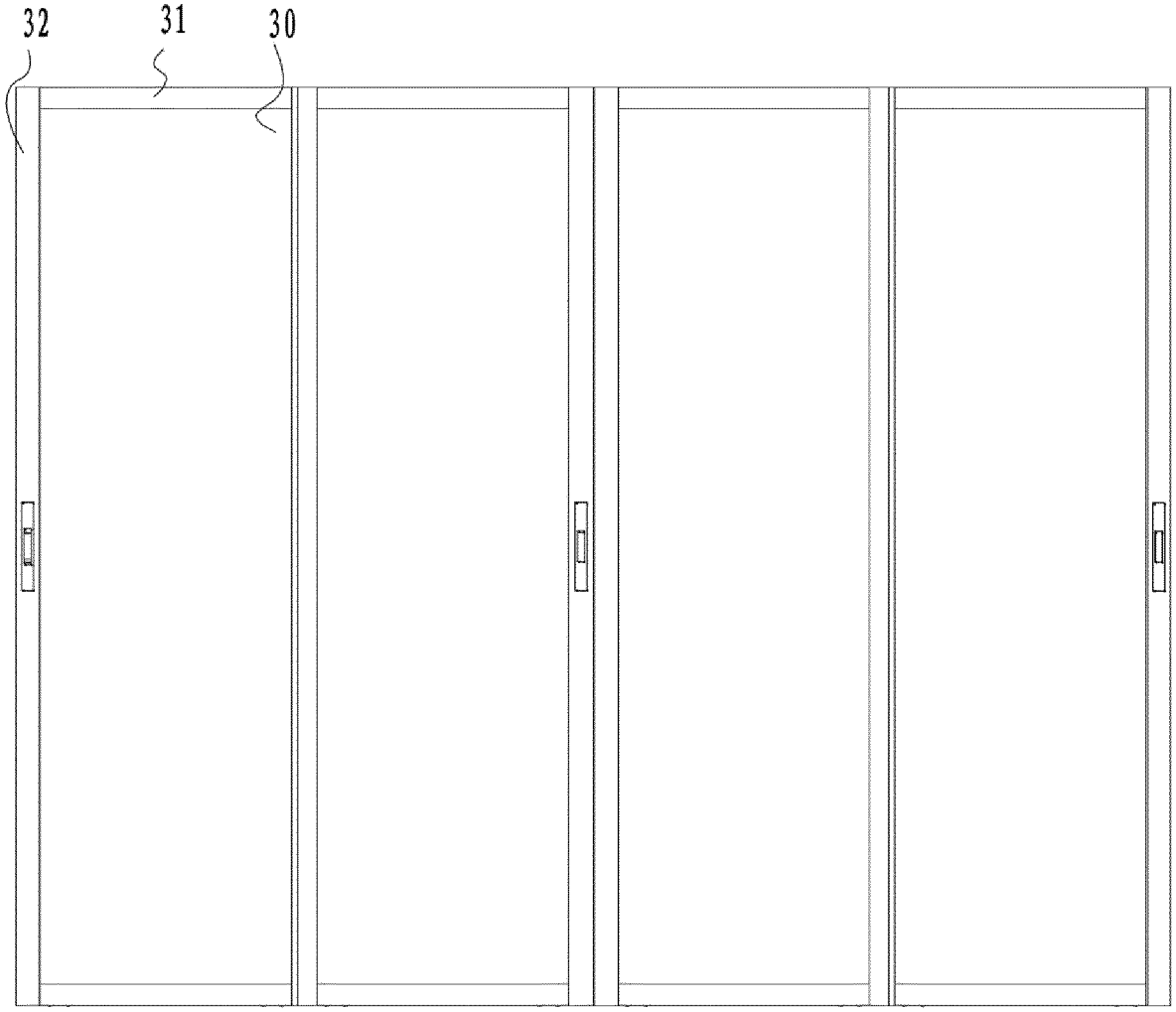
10. The outdoor sliding door awning according to any of claims 1 to 5, wherein the awning top structure (2) comprises a plurality of top plates arranged in steps, and the awning top structure (2) can be opened and closed through the sliding of the top plates.



【Figure No.】Fig. 1



【Figure No.】Fig. 2



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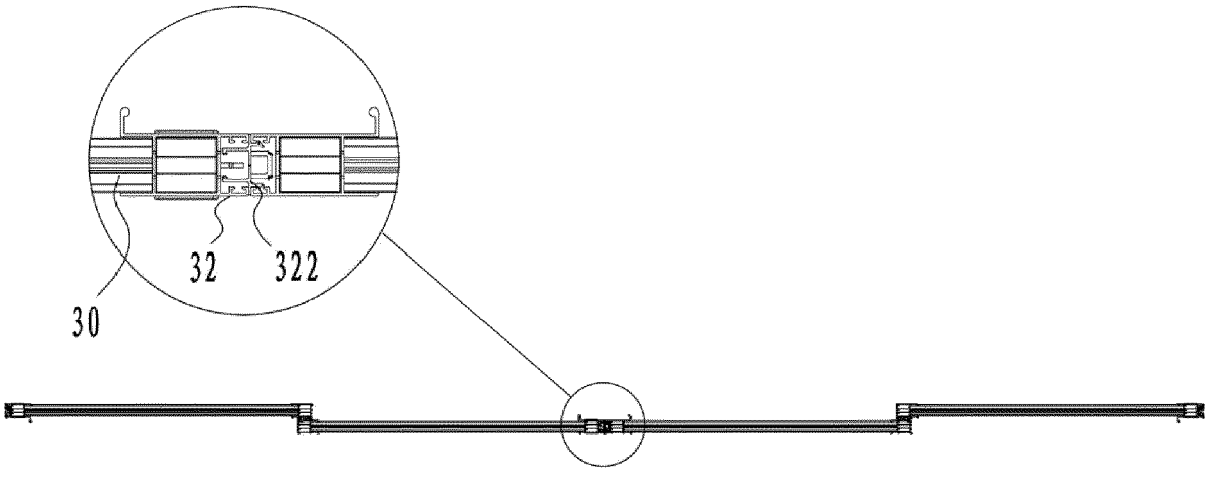

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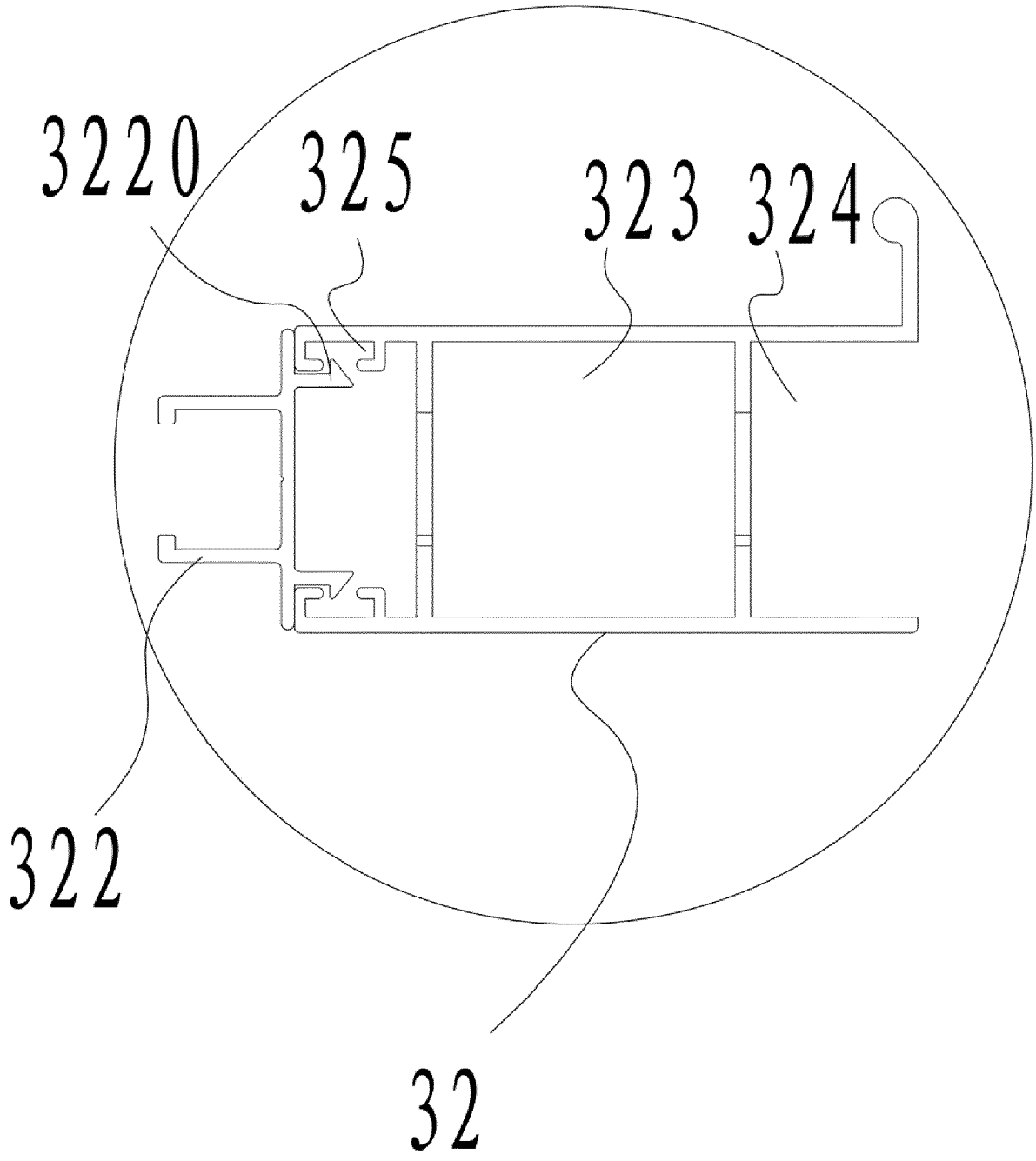

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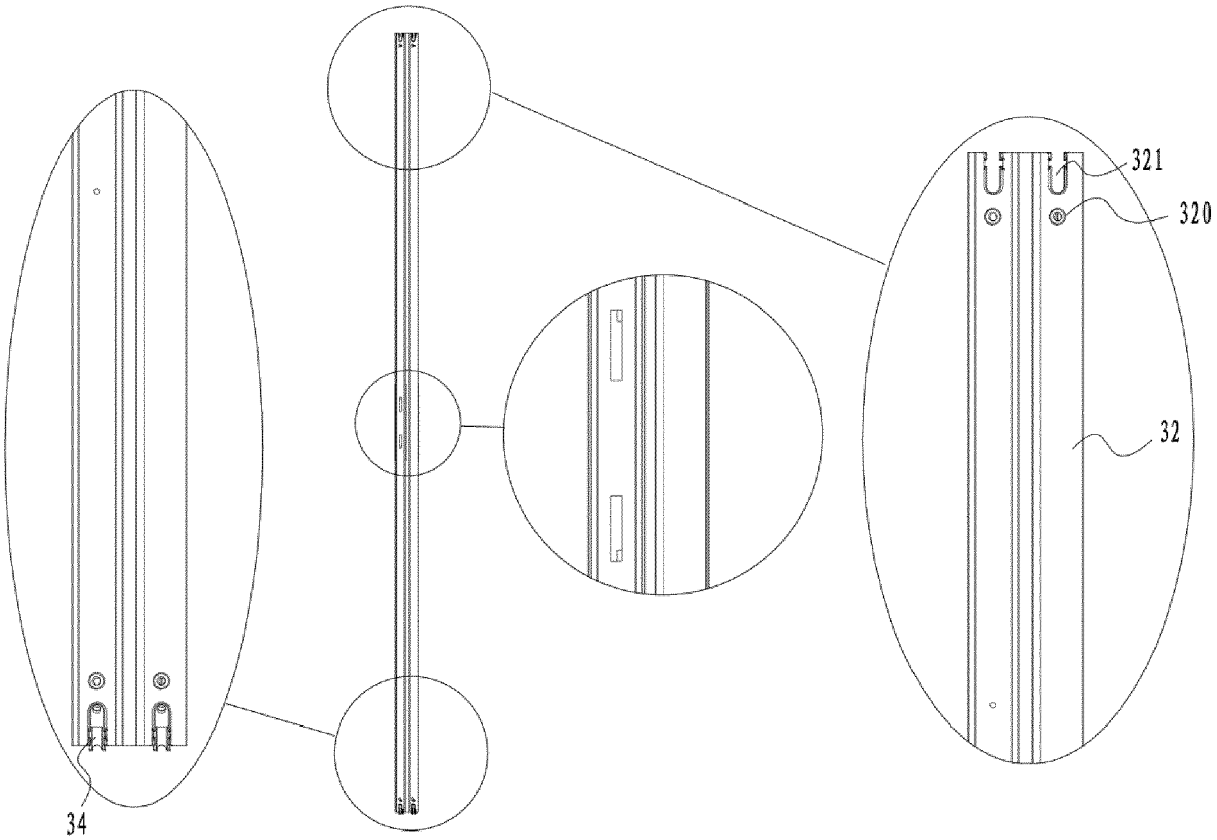

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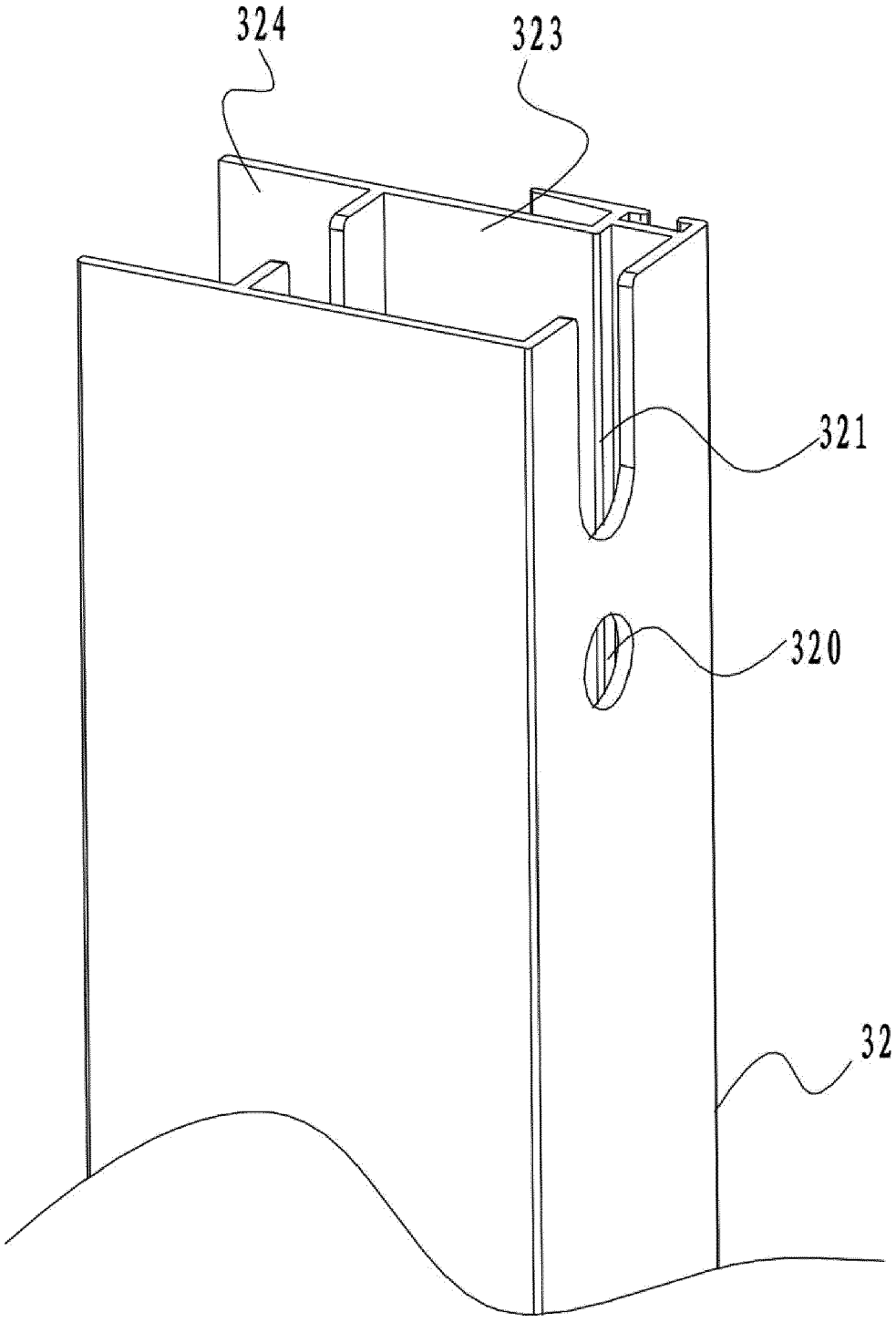

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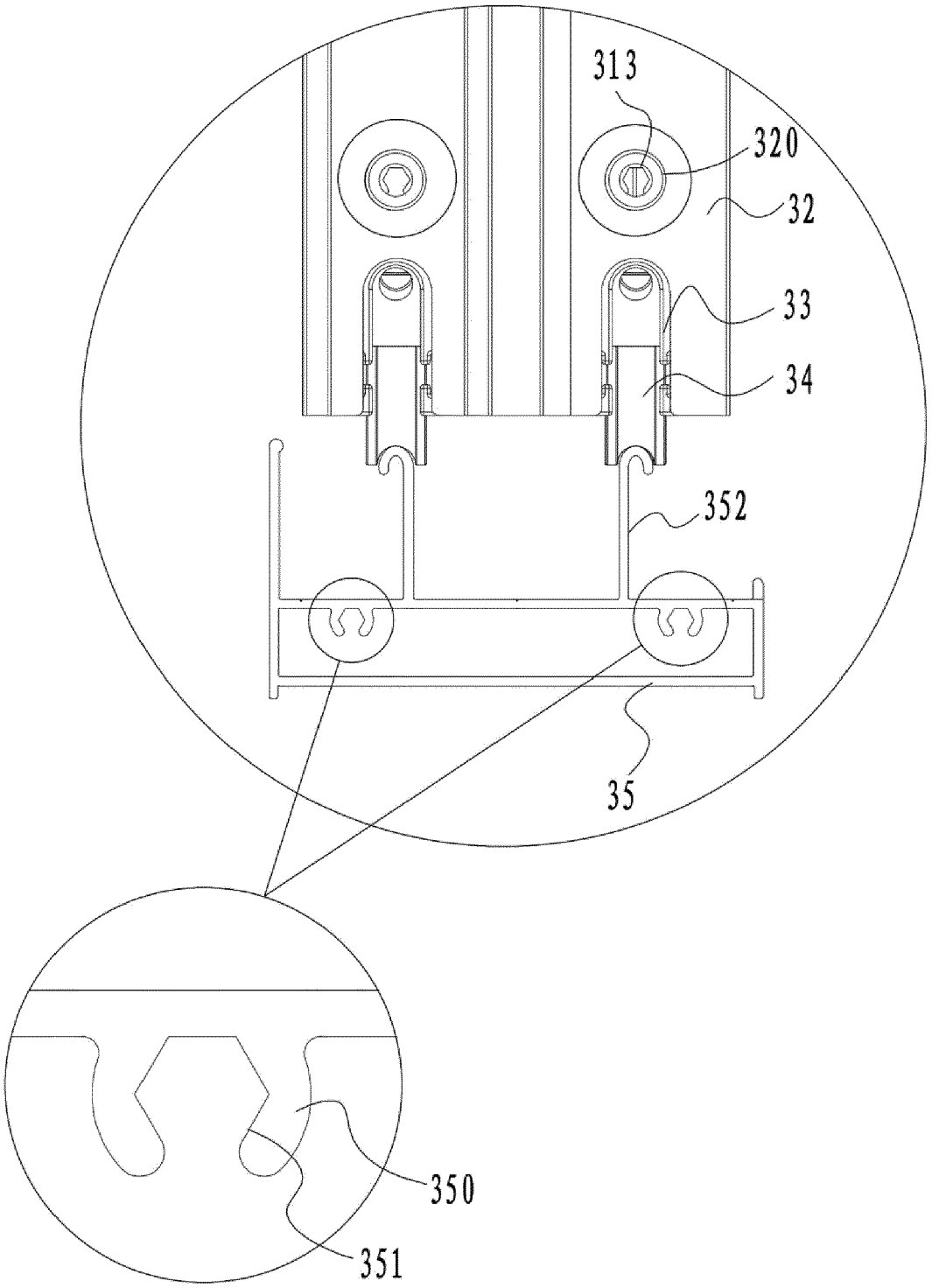

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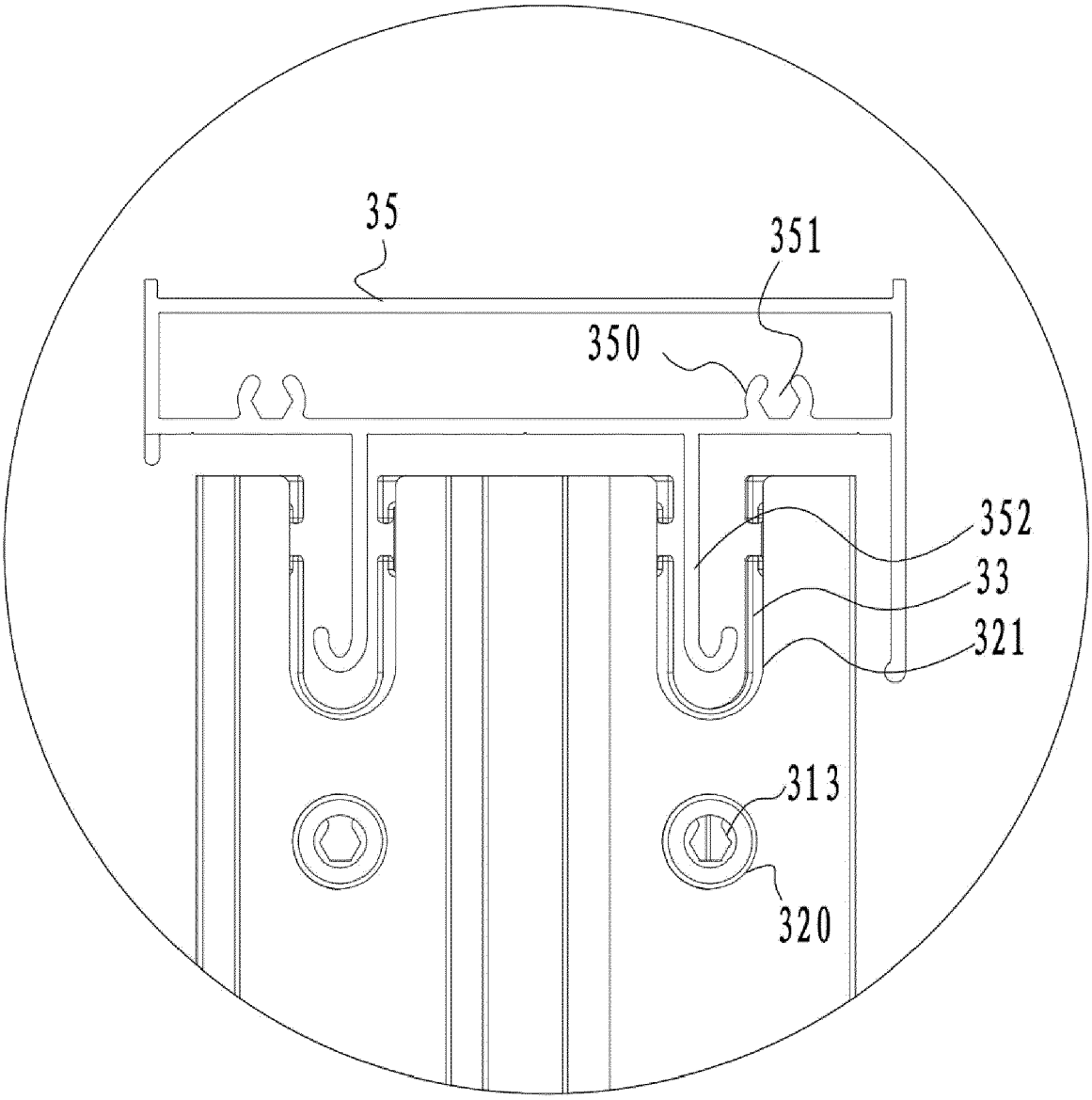

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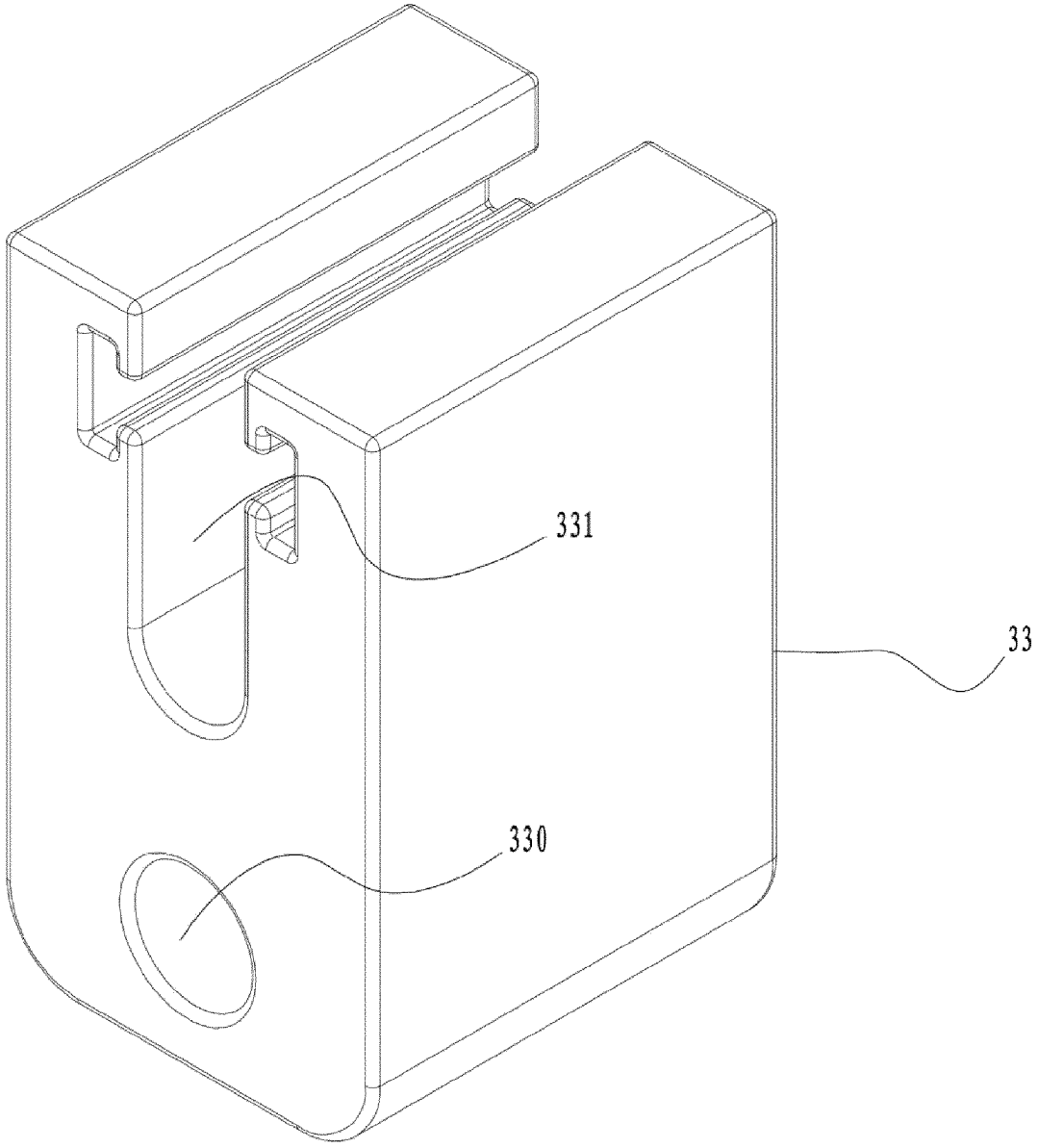

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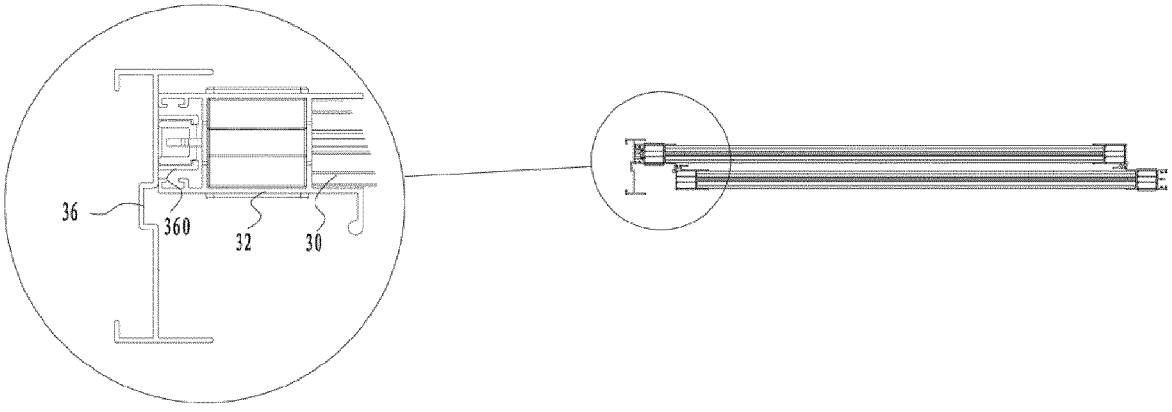
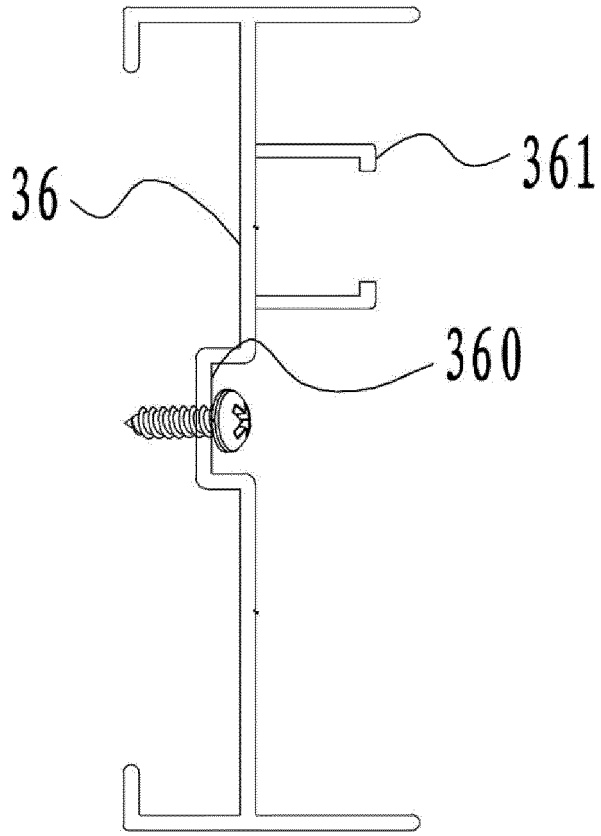
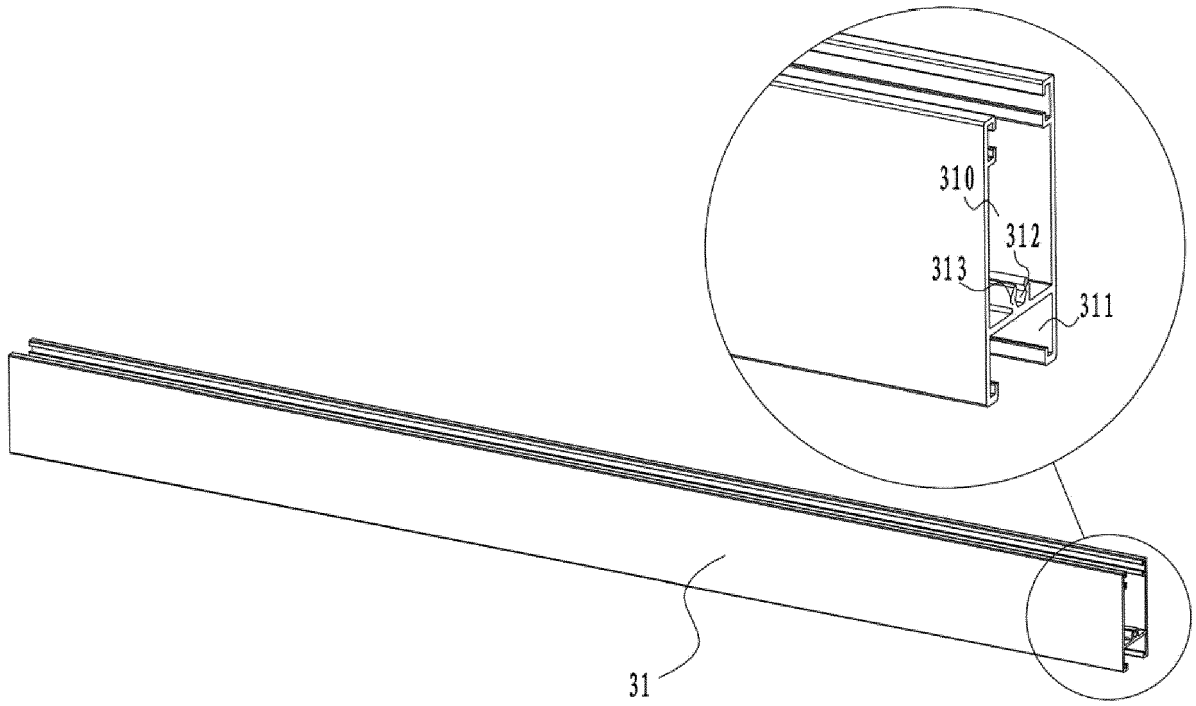


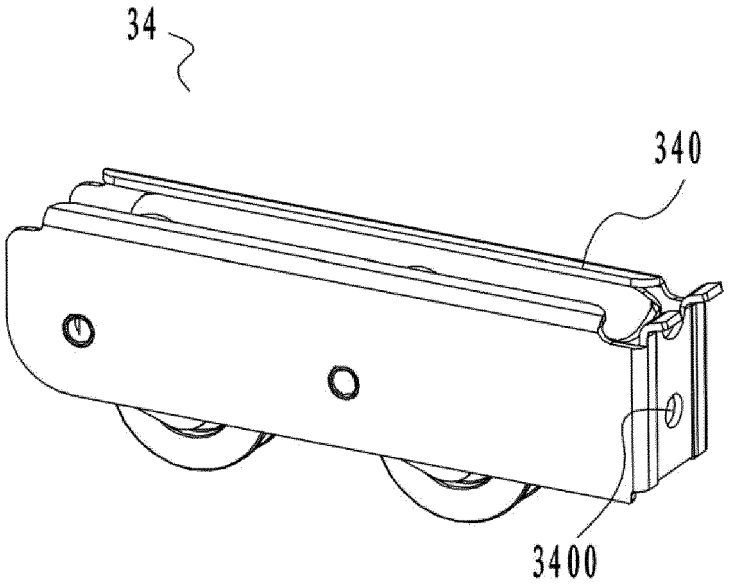
【Figure No.】Fig. 11



【Figure No.】Fig. 12



【Figure No.】Fig. 13



【Figure No.】Fig. 14

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EUROPEAN SEARCH REPORT

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Place of search	Date of completion of the search	Examiner
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