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(54) **TRANSLATION STRUCTURE, PULLEY AND DOOR-WINDOW ASSEMBLY**

(57) Disclosed are a translating structure, a sliding wheel, and a fenestration assembly, the translating structure includes a supporting frame, a guiding piece (20), a guiding block (30), a fixing frame, a sliding piece (80) and a sliding rod. The guiding piece (20) is disposed on the supporting frame, and is movable and restricted by the supporting frame; the guiding block (30) is mounted on and movable along with the guiding piece (20), and is provided with a guiding groove (301); the fixing frame is equipped with rollers (70); the sliding piece (80) is mounted in the fixing frame and partially inserted into the guiding groove (301); the sliding rod passes through the sliding piece (80), with two ends of the sliding rod passing through the fixing frame and fixedly connected to the supporting frame, wherein the sliding piece (80) is forced to move along an axial direction of the sliding rod by the guiding groove (301) of the guiding block (30) when the guiding piece (20) moves, and the fixing frame is forced to move along the axial direction of the sliding rod in a translational motion by movement of the sliding piece (80). The sliding wheel and the fenestration assembly both include the above-mentioned translating structure. The translating structure is easy to install, and has a simple structure, large bearing capacity, and an accurate transmission movement.

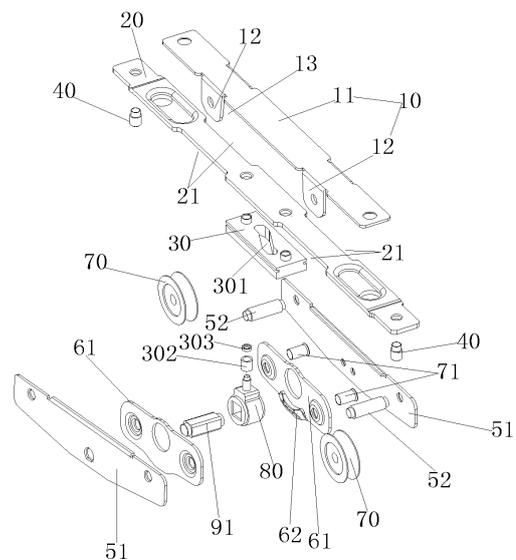


Fig. 2

Description

[0001] The present application is based on a Chinese patent application No. 201910683063.4 filed on July 26, 2019, and claims its priority. The entire disclosure of the application is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of doors and windows, in particular to a translating structure, a sliding wheel and a fenestration assembly.

BACKGROUND

[0003] Sliding doors and windows are flexible, safe and durable. They move in one plane and occupy less space. Existing sliding doors and windows are usually provided with a sealing strip to maintain the indoor temperature in cold area. However, the movable panel will rub against the sealing strip when it is pushed and pulled, which will affect user experience. Furthermore, the sealing strip will be worn out after a long time of use hence the sealing effect is reduced and the room temperature cannot be maintained.

SUMMARY OF THE APPLICATION

[0004] In light of the problems of the prior art, the present disclosure provides a translating structure, a sliding wheel, and a fenestration assembly.

[0005] A translating structure provided by the present disclosure includes:

- a supporting frame;
- a guiding piece disposed on the supporting frame, the guiding piece being movable and restricted by the supporting frame;
- a guiding block mounted on and movable along with the guiding piece, the guiding block being provided with a guiding groove;
- a fixing frame equipped with rollers;
- a sliding piece mounted in the fixing frame and partially inserted into the guiding groove; and
- a sliding rod passing through the sliding piece, two ends of the sliding rod passing through the fixing frame and being fixedly connected to the supporting frame, wherein the sliding piece is forced to move along an axial direction of the sliding rod by the guiding groove of the guiding block when the guiding piece moves, and the fixing frame is forced to move along the axial direction of the sliding rod in a translational motion by movement of the sliding piece.

[0006] Further, the supporting frame includes an inner supporting frame, which includes a bottom plate and limiting plates disposed opposite to each other on two sides

of the bottom plate. The bottom plate and the limiting plates define a sliding space, in which a part of the guiding piece is located, and the guiding piece is movable under restriction of the sliding space.

5 [0007] Further, two sides of the guiding piece are recessed inward to form an avoidance space for avoiding the limiting plates, and the limiting plates pass through the avoidance space so that a moving distance of the guiding piece is limited by cooperation between the avoidance space and the limiting plates.

10 [0008] Further, the supporting frame further includes an outer supporting frame, which includes two side plates. One of the side plates is fixed on one limiting plate on one side of the bottom plate, and the other one of the side plates is fixed on the other limiting plate on the other side of the bottom plate. One end of the sliding rod is fixedly connected to the one of the side plates, and the other end thereof is fixedly connected to the other one of the side plates.

15 [0009] Further, the fixing frame includes two side walls disposed opposite to each other, between which the rollers and the sliding piece are mounted. The sliding rod passing through the sliding piece has one end passing through one of the side walls and fixedly connected to the one of the side plates, and the other end passing through the other one of the side walls and fixedly connected to the other one of the side plates.

20 [0010] Further, the sliding rod includes a first shaft body. A through-hole is opened on the sliding piece, and the first shaft body passes through the through-hole with two ends thereof passing through the fixing frame and fixedly connected to the supporting frame. The first shaft body has a polygonal shape.

25 [0011] Further, the sliding rod includes two second shaft bodies, the sliding piece is provided with two through-grooves with symmetrical shapes, and the two second shaft bodies are disposed in parallel and pass through the two through-grooves and the fixing frame.

30 [0012] Each of the two second shaft bodies has a load bearing shaft passing through, and two ends of the load bearing shaft are extended out of each of the second shaft bodies and fixedly connected to the supporting frame.

35 [0013] Further, the sliding piece includes a sliding part and a limiting part provided on the sliding part. The guiding groove is arranged along a moving direction of the guiding block, and an angle between the guiding groove and the moving direction of the guiding block is an acute angle. The sliding rod passes through the sliding part, and the limiting part is inserted into the guiding groove, wherein a roller sleeve for cooperating with the guiding groove is sleeved on the limiting part.

40 [0014] The present disclosure further provides a sliding wheel, which includes any one of the above-mentioned translating structures.

45 [0015] The present disclosure further provides a fenestration assembly. The fenestration assembly includes a panel piece, a frame piece, and the above-mentioned

sliding wheel. A supporting frame of the sliding wheel is fixedly mounted on the panel piece, and rollers of the sliding wheel are abutted on a guiding rail of the frame piece in order to roll on the guiding rail.

[0016] The panel piece is equipped with a driving mechanism, which is connected with the guiding piece of the sliding wheel through a transmission rod in order to force the guiding piece to move, thereby forcing the fixing frame to move in a translational motion. When the fixing frame moves in the translational motion, a sealing strip on the panel piece is pressed against the frame piece, and a sealing strip on the frame piece is pressed against the panel piece, or the sealing strip on the panel piece is separated from the frame piece, and the sealing strip on the frame piece is separated from the panel piece.

[0017] The advantageous effect of the present disclosure is that the panel piece of the fenestration assembly is slidably disposed on the frame piece through the sliding wheel which has the translating structure. In accordance with the translational motion of the fixing frame of the translating structure, the panel piece fixedly connected with the supporting frame moves in a translational motion in an opposite direction relative to the fixing frame, so that the sealing strip on the panel piece is pressed against the frame piece, and the sealing strip on the frame piece is pressed against the panel piece, or the sealing strip on the panel piece is separated from the frame piece, and the sealing strip on the frame piece is separated from the panel piece.

[0018] When the panel piece is to be pushed, the fixing frame moves in the translational motion to one side such that the sealing strip on the panel piece is separated from the frame piece, and the sealing strip on the frame piece is separated from the panel piece to prevent the sealing strips from rubbing against each other when pushing and pulling the panel piece. This requires less effort to push and pull the panel piece, hence the user experience is improved and the service life of the sealing strip is increased due to less abrasion.

[0019] When the panel piece is to be connected and sealed with the frame piece, the fixing frame moves to the other side, so that the sealing strip on the panel piece is pressed against the frame piece, and the sealing strip on the frame piece is pressed against the panel piece, hence the panel piece and the frame piece are connected and sealed.

[0020] In addition, the translating structure is easy to install, and has a simple structure and low manufacturing cost, it is convenient to operate, with high transmission efficiency and reliability, large bearing capacity, and an accurate transmission movement.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]

Fig. 1 is a structural view of a fenestration assembly provided by an embodiment of the present disclosure;

sure;

Fig. 2 is an exploded view of a sliding wheel provided by an embodiment of the present disclosure;

Fig. 3 is a schematic diagram of the fenestration assembly provided by an embodiment of the present disclosure in a working state where the sealing strip of the panel piece is separated from the frame piece, and the sealing strip of the frame piece is separated from the panel piece;

Fig. 4 is a schematic diagram of the sliding wheel in the working state shown in Fig. 3;

Fig. 5 is a schematic diagram of the fenestration assembly provided by an embodiment of the present disclosure in another working state where the sealing strip of the panel piece is pressed against the frame piece, and the sealing strip of the frame piece is pressed against the panel piece;

Fig. 6 is a schematic diagram of the sliding wheel in the working state shown in Fig. 5;

Fig. 7 is a structural view of the sliding piece shown in Fig. 2;

Fig. 8 is an exploded view of another sliding wheel provided by an embodiment of the present disclosure; and

Fig. 9 is a structural view of the sliding piece shown in Fig. 8.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0022] The technical solutions in the embodiments of the present invention will be clearly and completely described below in conjunction with the accompanying drawings in the embodiments of the present invention. Obviously, the described embodiments are only a part of the embodiments of the present invention, rather than all the embodiments. Based on the embodiments of the present invention, all other embodiments obtained by those of ordinary skill in the art without creative work shall fall within the protection scope of the present invention.

[0023] It should be noted that all the directional indications (such as up, down, left, right, front, rear, horizontal, vertical, etc.) in the embodiments of the present invention are only used to explain the relative positional relationship and movement conditions etc. between each component in a specific posture (as shown in the accompanying drawings), and if the specific posture changes, the directional indications will also change accordingly. The term "connection" may be a direct connection or an indirect connection. The terms "provide", "provided on" and "provided at" may be provided directly or indirectly.

[0024] In addition, in the present invention, descriptions related to "first", "second", etc. are only for descriptive purposes, and cannot be understood as indicating or implying their relative importance or implicitly indicating the number of indicated technical features. Accordingly, the features defined with "first" and "second" may explicitly or implicitly include at least one of the features. In addition, the technical solutions in the various embod-

iments may be combined with each other, but they must be based on what can be achieved by those of ordinary skill in the art. When the combination of technical solutions is contradictory or cannot be achieved, it should be considered that such a combination of technical solutions does not exist, nor does it fall within the protection scope of the present invention.

[0025] Referring to Figs. 1-7, Fig. 1 is a structural view of a fenestration assembly provided by an embodiment of the present disclosure; Fig. 2 is an exploded view of a sliding wheel 140 provided by an embodiment of the present disclosure; Fig. 3 is a schematic diagram of the fenestration assembly provided by an embodiment of the present disclosure in a working state where the sealing strip 120 of the panel piece 100 is separated from the frame piece 110, and the sealing strip 120 of the frame piece 110 is separated from the panel piece 100; Fig. 4 is a schematic diagram of the sliding wheel 140 in the working state shown in Fig. 3; Fig. 5 is a schematic diagram of the fenestration assembly provided by an embodiment of the present disclosure in another working state where the sealing strip 120 of the panel piece 100 is pressed against the frame piece 110, and the sealing strip 120 of the frame piece 110 is pressed against the panel piece 100; Fig. 6 is a schematic diagram of the sliding wheel 140 in the working state shown in Fig. 5; Fig. 7 is a structural view of the sliding piece 80 shown in Fig. 2.

[0026] In the present embodiment, the fenestration assembly includes a panel piece 100, a frame piece 110, and a sliding wheel 140. The sliding wheel 140 includes a translating structure, and the translating structure includes a supporting frame, a guiding piece 20, a guiding block 30, a fixing frame, a sliding piece 80 and a sliding rod. The guiding piece 20 is disposed on the supporting frame and is movable and restricted by the supporting frame. The guiding block 30 is mounted on and movable along with the guiding piece 20, and a guiding groove 301 is provided on the guiding block 30. The fixing frame is equipped with rollers 70. The sliding piece 80 is mounted on the supporting frame and is partially inserted into the guiding groove 301. The sliding rod penetrates the sliding piece, two ends of the sliding rod pass through the fixing frame and are fixedly connected to the supporting frame, wherein the sliding piece 80 is forced to move along an axial direction of the sliding rod by the guiding groove 301 of the guiding block 30 when the guiding piece 20 moves, and the fixing frame is forced to move along the axial direction of the sliding rod in a translational motion by movement of the sliding piece 80.

[0027] In an alternative embodiment, such as the present embodiment, the supporting frame includes an inner supporting frame 10, which includes a bottom plate 11 and limiting plates 12 disposed opposite to each other on two sides of the bottom plate 11. The bottom plate 11 and the limiting plates 12 define a sliding space 13, in which a part of the guiding piece 20 is located, and the guiding piece 20 is movable under restriction of the sliding

space 13. Specifically, the bottom plate 11 has an elongated shape, and the limiting plates 12 are located on both sides of the bottom plate 11 so that the sliding space 13 is arranged along a lengthwise direction of the bottom plate 11, and the guiding piece 20 moves in a reciprocating motion in the lengthwise direction of the bottom plate 11.

[0028] In an alternative embodiment, such as the present embodiment, two sides of the guiding piece 20 are recessed inward to form an avoidance space 21 for avoiding the limiting plates 12, and the limiting plates 12 pass through the avoidance space 21, so that a moving distance of the guiding piece 20 is limited by cooperation between the avoidance space 21 and the limiting plates 12.

[0029] In an alternative embodiment, such as the present embodiment, the supporting frame further includes an outer supporting frame, which includes two side plates 51. One of the side plates 51 is fixed on one of the limiting plates 12 on one side of the bottom plate 11, and the other one of the side plates 51 is fixed on the other one of the limiting plates 12 on the other side of the bottom plate 11. One end of the sliding rod is fixedly connected to the one of the side plates 51, and the other end of the sliding rod is fixedly connected to the other one of the side plates 51. Furthermore, the side plates 51 are fixed on the limiting plates 12 through first fixing shafts 52.

[0030] In an alternative embodiment, such as the present embodiment, the fixing frame includes two side walls 61 disposed opposite to each other, between which the rollers 70 and the sliding piece 80 are mounted. The sliding rod passing through the sliding piece 80 has one end passing through one of the side walls 61 and fixedly connected to the one of the side plates 51, and the other end passing through the other one of the side walls 61 and fixedly connected to the other one of the side plates 51. Furthermore, the number of the rollers 70 is two, each is rotatably mounted on the two side walls 61 through a second fixing shaft 71. In the present embodiment, the sliding piece 80 pushes the one of the side walls 61 of the fixing frame to move the fixing frame towards one side in a translational motion or pushes the other one of the side walls 61 of the fixing frame to move the fixing frame to the other side in a translational motion when the sliding piece 80 is pushed along the axial direction of the sliding rod by the guiding piece 20. The moving directions of the supporting frame and the fixing frame are opposite to each other as the fixing frame moves in the translational motion.

[0031] Further, an inner side of each of the two side walls 61 is provided with a protruded stopper 62. The stopper 62 is located below the sliding piece 80 and has an approximate arc shape in order to match a shape of the sliding piece 80.

[0032] In an alternative embodiment, such as the present embodiment, the sliding rod includes a first shaft body 91. A through-hole 81 is opened on the sliding piece 80, and the first shaft body 91 passes through the

through-hole 81 with two ends thereof passing through the fixing frame and fixedly connected with the supporting frame. Specifically, one end of the first shaft body 91 passes through one side wall 61 and is fixedly connected to one side plate 51, and the other end passes through the other side wall 61 and is fixedly connected to the other side plate 51. Further, the first shaft body 91 is a polygonal shaft, for example, a square shaft, to prevent the sliding piece 80 from rotating. In the present embodiment, the sliding rod with one first shaft body 91 may not only realize the translational motion of the fixing frame, but also reduce the cost.

[0033] In an alternative embodiment as shown in Figs. 8 and 9, Fig. 8 is an exploded view of another sliding wheel provided by an embodiment of the present disclosure; and Fig. 9 is a structural view of the sliding piece 80 shown in Fig. 8. In this embodiment, the sliding rod includes two second shaft bodies 92, the sliding piece 80 is provided with two through-grooves 82 with symmetrical shapes, and the two second shaft bodies 92 are disposed in parallel and pass through the two through-grooves 82 and the fixing frame. Each of the two second shaft bodies 92 has a load bearing shaft 93 passing through, and two ends of the load bearing shaft 93 are extended out of each of the second shaft bodies 92 and fixedly connected to the supporting frame. Specifically, one of the second shaft bodies 92 passes through one of the through-grooves 82, and one end of the second shaft body 92 passes through one of the side walls 61, and the other end passes through the other one of the side walls 61. The bearing shaft 93 passes through the second shaft body 92 with one end fixedly connected to one of the side plates 51, and the other end fixedly connected to the other one of the side plates 51. Further, the second shaft body 92 is a cylindrical shaft. In this embodiment, the two second shaft bodies 92 of the sliding rod may reduce the swing of the sliding wheel 140 and also prevent the sliding piece 80 from rotating, so that a smoother sliding of the sliding piece 80 is achieved.

[0034] In an alternative embodiment, such as the present embodiment, the sliding piece 80 includes a sliding part 84 and a limiting part 85 provided on the sliding part 84. The guiding groove 301 is arranged along a moving direction of the guiding block 30, and an angle between the guiding groove 301 and the moving direction of the guiding block 30 is an acute angle. The sliding rod passes through the sliding part 84, and the limiting part 85 is inserted into the guiding groove 301, wherein a roller sleeve 302 for cooperating with the guiding groove 301 is sleeved on the limiting part 85. Furthermore, the limiting part is sleeved with a pad 303 to limit the roller sleeve 302 on the limiting part 85.

[0035] In the present embodiment, the supporting frame of the sliding wheel 140 is fixedly mounted on the panel piece 100, and the rollers 70 of the sliding wheel 140 are abutted on a guiding rail of the frame piece 110 in order to roll on the guiding rail, wherein the panel piece 100 is equipped with a driving mechanism, which is con-

nected with the guiding piece 20 of the sliding wheel 140 through a transmission rod 130 in order to force the guiding piece 20 to move, thereby forcing the fixing frame to move in a translational motion. When the fixing frame moves in the translational motion, a sealing strip 120 on the panel piece 100 is pressed against the frame piece 110, and a sealing strip 120 on the frame piece 110 is pressed against the panel piece 100, or the sealing strip 120 on the panel piece 100 is separated from the frame piece 110, and the sealing strip 120 on the frame piece 110 is separated from the panel piece 100. Further, the driving mechanism includes a rotating handle, which is connected to the guiding piece 20 through the transmission rod 130, and the guiding piece 20 is fixed to the transmission rod 130 through connecting columns 40, wherein the guiding piece 20 is forced to move by the transmission rod 130 when the rotating handle rotates, in order to force the fixing frame to move in the translational motion through the guiding piece 20. Specifically, in accordance with the rotation of the rotating handle, the guiding piece 20 may move in a reciprocating motion in the lengthwise direction of the bottom plate 11, thereby forcing the fixing frame to move in a reciprocating and translational motion.

[0036] In the present embodiment, the panel piece 100 of the fenestration assembly is slidably disposed on the frame piece 110 through the sliding wheel 140 which has the translating structure. In accordance with the translational motion of the fixing frame of the translating structure, the panel piece 100 fixedly connected with the supporting frame moves in a translational motion in an opposite direction relative to the fixing frame, so that the sealing strip 120 on the panel piece 100 is pressed against the frame piece 110, and the sealing strip 120 on the frame piece 110 is pressed against the panel piece 100, or the sealing strip 120 on the panel piece 100 is separated from the frame piece 110, and the sealing strip 120 on the frame piece 110 is separated from the panel piece 100.

[0037] When the panel piece 100 is to be pushed, the fixing frame is forced to move in the translational motion to one side such that the sealing strip 120 on the panel piece 100 is separated from the frame piece 110, and the sealing strip 120 on the frame piece 110 is separated from the panel piece 100 to prevent the sealing strips 120 from rubbing against each other when pushing and pulling the panel piece 100. This requires less effort to push and pull the panel piece 100, hence the user experience is improved and the service life of the sealing strips 120 is increased due to less abrasion. Specifically, when the panel piece 100 is to be pushed, the rotating handle is rotated such that the guiding piece 20 forces the fixing frame to move inwards. As the fixing frame moves inwards, the supporting frame and the panel piece 100 fixed to the supporting frame move outwards simultaneously, so that the sealing strip 120 on the panel piece 100 is separated from the frame piece 110, and the sealing strip 120 on the frame piece 110 is separated from

the panel piece 100, that is, the working state as shown in Figs. 3 and 4.

[0038] When the panel piece 100 is to be connected and sealed with the frame piece 110, the fixing frame is forced to move in the translational motion to the other side, so that the sealing strip 120 on the panel piece 100 is pressed against the frame piece 110, and the sealing strip 120 on the frame piece 110 is pressed against the panel piece 100, hence the panel piece 100 and the frame piece 110 are connected and sealed. Specifically, the rotating handle is rotated such that the guiding piece 20 forces the fixing frame to move outwards. As the fixing frame moves outwards, the supporting frame and the panel piece 100 fixed to the supporting frame move inwards simultaneously, so that the sealing strip 120 on the panel piece 100 is pressed against the frame piece 110, and the sealing strip 120 on the frame piece 110 is pressed against the panel piece 100, that is, the working state as shown in Figs. 5 and 6.

[0039] In the present embodiment, the translating structure of the sliding wheel 140 is easy to install, and has a simple structure and low manufacturing cost, it is convenient to operate, with high transmission efficiency and reliability, large bearing capacity, and an accurate transmission movement.

[0040] The above are only the preferred embodiments of the present invention, not intended to limit the scope of the present invention. Any equivalent structure or equivalent process transformation made by using the contents of the description and drawings of the present invention, or directly or indirectly applied to other related technical field, shall fall within the scope of protection of the present invention.

Claims

1. A translating structure, **characterized in that**, the translating structure comprises:

a supporting frame;
 a guiding piece disposed on the supporting frame, the guiding piece being movable and restricted by the supporting frame;
 a guiding block mounted on and movable along with the guiding piece, the guiding block being provided with a guiding groove;
 a fixing frame equipped with rollers;
 a sliding piece mounted in the fixing frame and partially inserted into the guiding groove; and
 a sliding rod passing through the sliding piece, two ends of the sliding rod passing through the fixing frame and being fixedly connected to the supporting frame, wherein the sliding piece is forced to move along an axial direction of the sliding rod by the guiding groove of the guiding block when the guiding piece moves, and the fixing frame is forced to move along the axial

direction of the sliding rod in a translational motion by movement of the sliding piece.

2. The translating structure according to claim 1, **characterized in that**, the supporting frame comprises an inner supporting frame including a bottom plate and limiting plates disposed opposite to each other on two sides of the bottom plate, the bottom plate and the limiting plates define a sliding space, in which a part of the guiding piece is located, and the guiding piece is movable under restriction of the sliding space.
3. The translating structure according to claim 2, **characterized in that**, two sides of the guiding piece are recessed inward to form avoidance space for avoiding the limiting plates, and the limiting plates pass through the avoidance space so that a moving distance of the guiding piece is limited by cooperation between the avoidance space and the limiting plates.
4. The translating structure according to claim 2, **characterized in that**, the supporting frame further comprises an outer supporting frame including two side plates, one of the side plates is fixed on one limiting plate on one side of the bottom plate, and the other one of the side plates is fixed on the other limiting plate on the other side of the bottom plate, one end of the sliding rod is fixedly connected to the one of the side plates, and the other end thereof is fixedly connected to the other one of the side plates.
5. The translating structure according to claim 4, **characterized in that**, the fixing frame comprises two side walls disposed opposite to each other, between which the rollers and the sliding piece are mounted, the sliding rod passing through the sliding piece has one end passing through one of the side walls and fixedly connected to the one of the side plates, and the other end passing through the other one of the side walls and fixedly connected to the other one of the side plates.
6. The translating structure according to claim 1, **characterized in that**, the sliding rod comprises a first shaft body, a through-hole is opened on the sliding piece, and the first shaft body passes through the through-hole with two ends thereof passing through the fixing frame and fixedly connected to the supporting frame, wherein the first shaft body has a polygonal shape.
7. The translating structure according to claim 1, **characterized in that**, the sliding rod comprises two second shaft bodies, the sliding piece is provided with two through-grooves with symmetrical shapes, and the two second shaft bodies are disposed in parallel and pass through the two through-grooves and the

fixing frame,
 wherein each of the two second shaft bodies has a load bearing shaft passing through, and two ends of the load bearing shaft are extended out of each of the second shaft bodies and fixedly connected to the supporting frame. 5

8. The translating structure according to claim 1, **characterized in that**, the sliding piece comprises a sliding part and a limiting part provided on the sliding part, the guiding groove is arranged along a moving direction of the guiding block, and an angle between the guiding groove and the moving direction of the guiding block is an acute angle, the sliding rod passes through the sliding part, and the limiting part is inserted into the guiding groove, wherein a roller sleeve for cooperating with the guiding groove is sleeved on the limiting part. 10 15

9. A sliding wheel, **characterized in that** the sliding wheel comprises the translating structure according to any one of claims 1 to 8. 20

10. A fenestration assembly, **characterized in that** the fenestration assembly comprises a panel piece, a frame piece, and the sliding wheel according to claim 9, a supporting frame of the sliding wheel is fixedly mounted on the panel piece, rollers of the sliding wheel are abutted on a guiding rail of the frame piece in order to roll on the guiding rail; 25 30
 wherein the panel piece is equipped with a driving mechanism, which is connected with a guiding piece of the sliding wheel through a transmission rod in order to force the guiding piece to move, thereby forcing the fixing frame to move in a translational motion, when the fixing frame moves in the translational motion, a sealing strip on the panel piece is pressed against the frame piece, and a sealing strip on the frame piece is pressed against the panel piece, or the sealing strip on the panel piece is separated from the frame piece, and the sealing strip on the frame piece is separated from the panel piece. 35 40 45 50 55

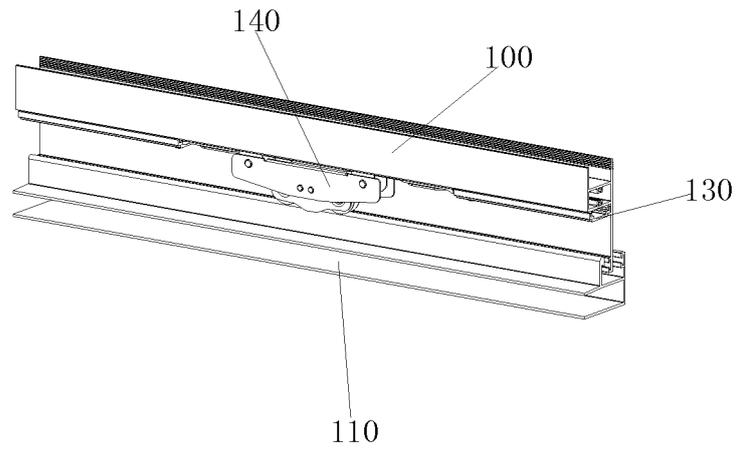


Fig. 1

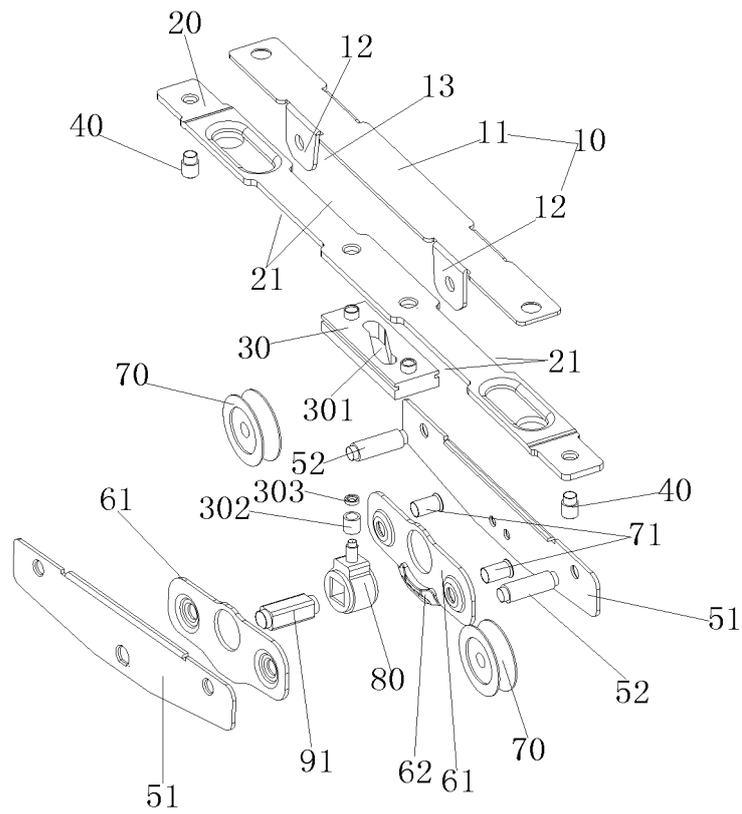


Fig. 2

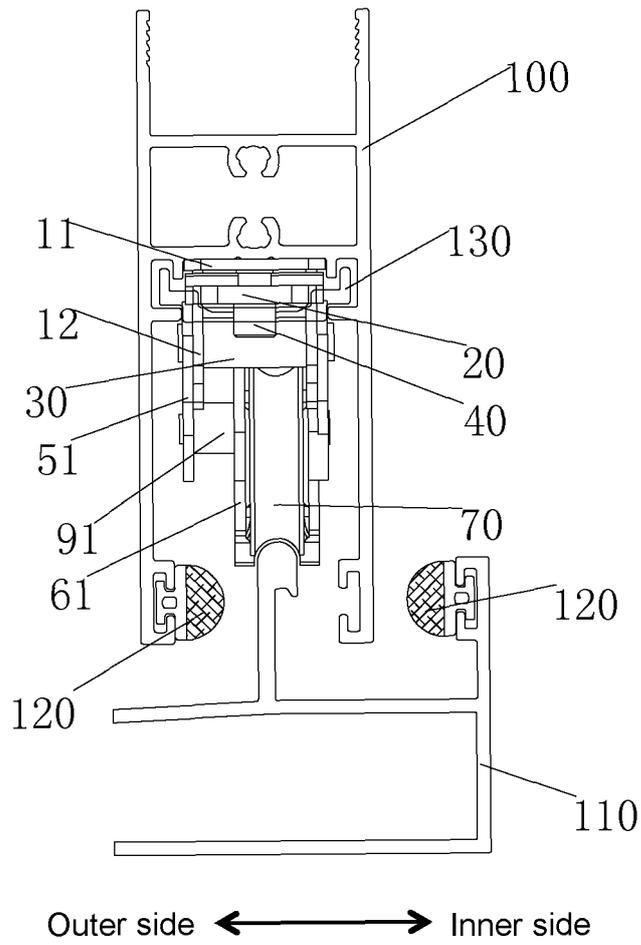


Fig. 3

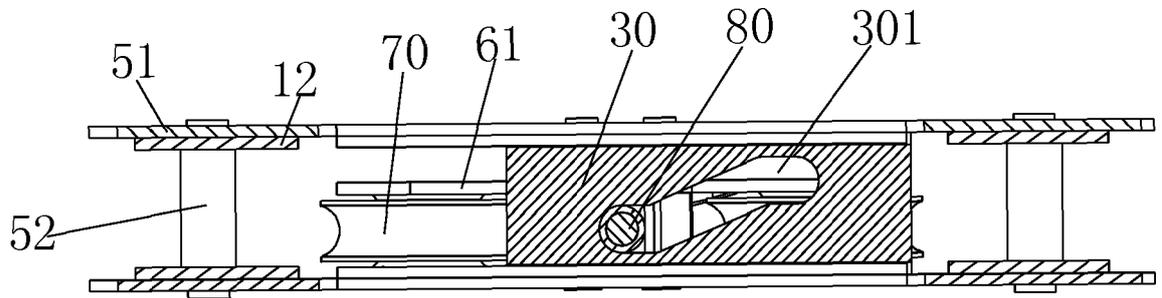


Fig. 4

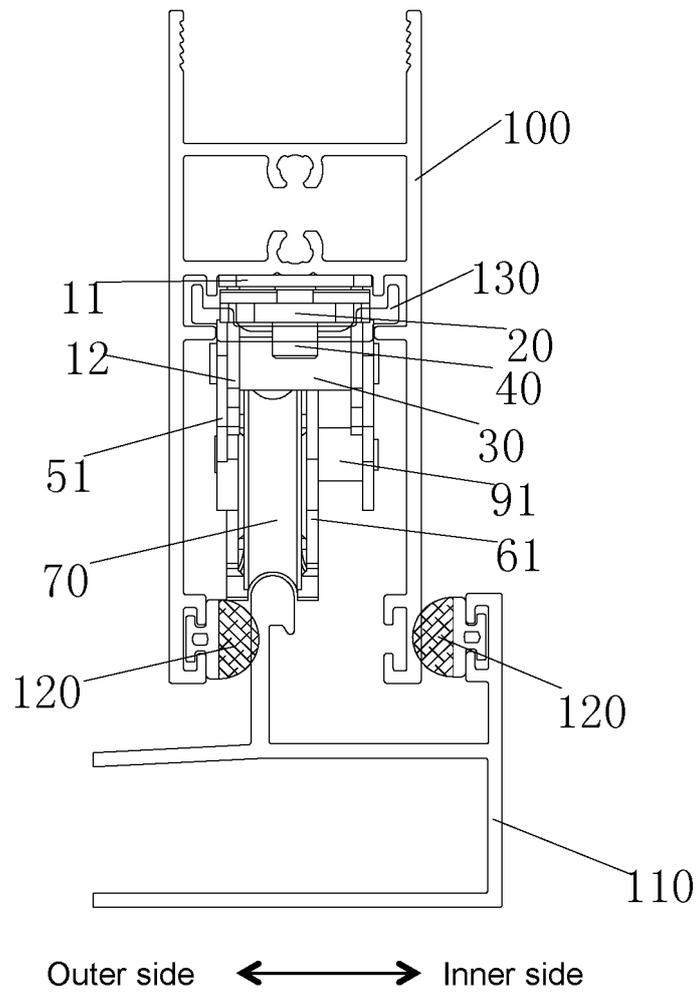


Fig. 5

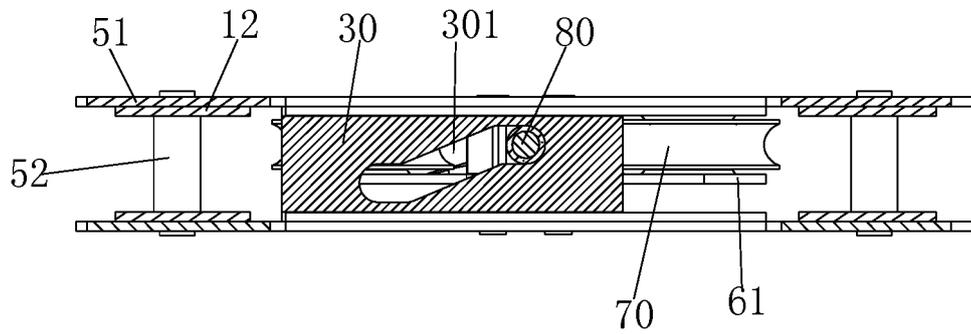


Fig. 6

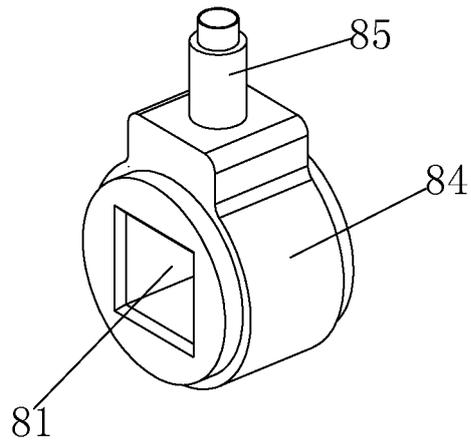


Fig. 7

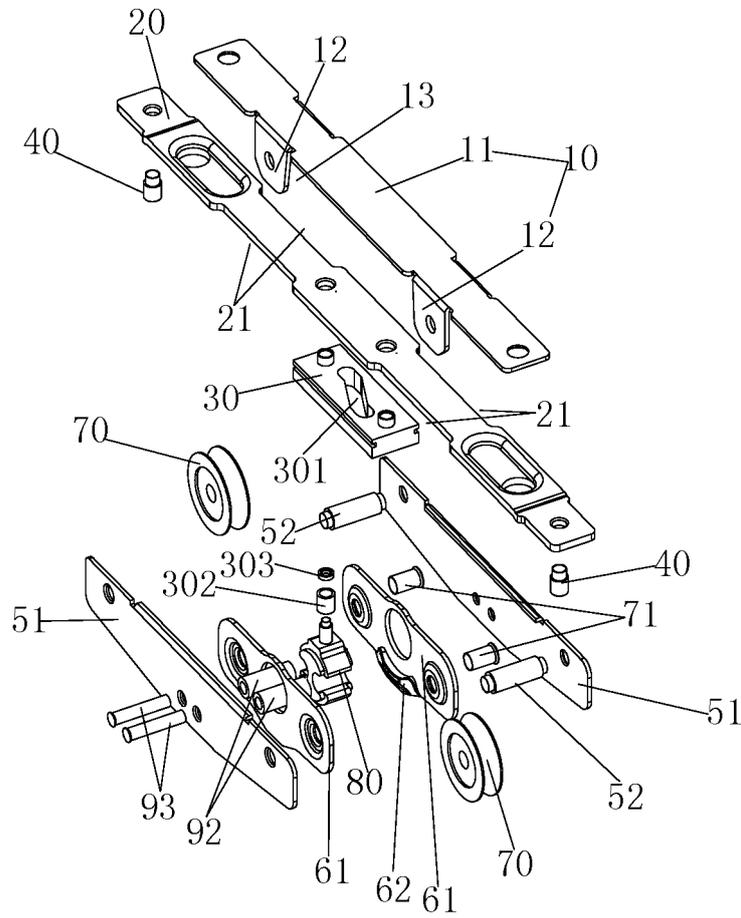


Fig. 8

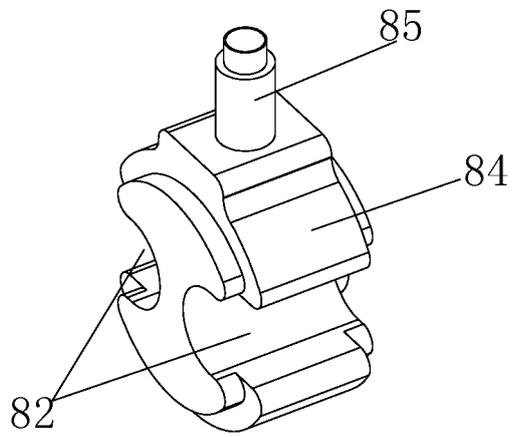


Fig. 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/112491

5	A. CLASSIFICATION OF SUBJECT MATTER E06B 3/46(2006.01)i; E05D 13/00(2006.01)j 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) E06B 3, E05D 13 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNKI, CNABS, CNTXT, VEN: 深圳好博窗控技术有限公司, 引导, 导向, 导槽, 槽, 滑动, 滑杆, 滚轮, lead+, guid+, groove, slot, slid+, rod, lever, wheel	
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
25	Category*	Citation of document, with indication, where appropriate, of the relevant passages
30	PX	CN 110242164 A (SHENZHEN HOPO WINDOW CONTROL TECH CO., LTD.) 17 September 2019 (2019-09-17) claims 1-10
35	A	CN 109695402 A (DU, Deshan) 30 April 2019 (2019-04-30) description, paragraphs [0025]-[0033], and figures 1-6
40	A	CN 206337986 U (SHENZHEN HOPO WINDOW CONTROL TECHNOLOGY CO., LTD.) 18 July 2017 (2017-07-18) entire document
45	A	CN 201598921 U (LIANG, Zhuoxiong) 06 October 2010 (2010-10-06) entire document
50	A	CN 107143259 A (ZHONGSHAN LIEWU SANITARY WARE CO., LTD.) 08 September 2017 (2017-09-08) entire document
55	A	CN 104358495 A (GUANGDONG MINGMEN LOCKS INDUSTRY CO., LTD.) 18 February 2015 (2015-02-18) entire document
	<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: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "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	"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 "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 "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 "&" document member of the same patent family
	Date of the actual completion of the international search 17 April 2020	Date of mailing of the international search report 30 April 2020
	Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China	Authorized officer
	Facsimile No. (86-10)62019451	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/112491

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 20110138807 A (C-THREE CO., LTD.) 28 December 2011 (2011-12-28) entire document	1-10

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 201910683063 [0001]