

(12) STANDARD PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. **AU 2015210472 B1**

(54) Title
HIGH-TIGHTNESS SLIDING DEVICE

(51) International Patent Classification(s)
E06B 3/46 (2006.01) **E06B 3/62** (2006.01)

(21) Application No: **2015210472** (22) Date of Filing: **2015.08.10**

(30) Priority Data

(31) Number	(32) Date	(33) Country
201410391597.7	2014.08.11	CN

(43) Publication Date: **2016.02.25**

(43) Publication Journal Date: **2016.02.25**

(44) Accepted Journal Date: **2016.02.25**

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(56) Related Art
KR 101288044
US 3583101

ABSTRACT (Figures 1, 2 & 3)

The present invention discloses a high-tightness sliding device which comprises a frame 1 and sliding sash 2. An opening and closing device 3, a transmission device 4 and sealing devices 5 are arranged on the sliding sash 2; chute members 11, 12 are respectively arranged at top and bottom positions of the frame 1, and rail members 21, 22 are respectively arranged at top and bottom positions of the sliding sash 2; the sealing devices 5 are arranged in the rail members 21, 22 of the sliding sash, and the opening and closing device 3 drives the sealing devices 5 through the transmission device 4 to move up and down between a sealed position and an unsealed position; bosses 13 are arranged on the chute members 11, 12 of the frame, grooves 23 into which the bosses 13 stretch are arranged on the rail members 21, 22 of the sliding sash 2, transverse projections are further arranged on the rail members of the sliding sash, and the sealing devices can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing devices 5 reach the sealed position. By sealing a gap 6 between the sliding sash 2 and the frame 1 through the movable sealing devices 5, the tightness of the sliding sash 2 is improved, and the application range of the sliding device is widened; furthermore, the production cost is low and the popularization is facilitated.

HIGH-TIGHTNESS SLIDING DEVICE

The present application claims the priority of Chinese Patent Application No. 210410391597.7 filed to Patent Office of the People's Republic of China on August 11, 2014 and entitled HIGH-TIGHTNESS SLIDING DOOR/WINDOW, and the entire content thereof is incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to a sliding device, in particular to a high-tightness sliding device.

BACKGROUND OF THE INVENTION

Sliding devices, especially sliding windows and sliding doors, are widely used due to advantages of transparency, brightness and small occupied space. However, sliding devices which are manufactured by domestic manufacturers at present are mainly double-sliding devices sealed with brush strips, the water tightness and air tightness of which are comparatively low. With the continuous improvement of living standards of people and the continuous progress of building techniques, transparent and bright sliding devices are gradually applied to places such as island resort hotels and high rise in coastal areas. For heavily-windy and rainy coastal areas, the sliding devices sealed with brush strips cannot satisfy with the requirements. Therefore, a high-water-tightness and high-air-tightness sliding device needs to be provided to satisfy the market demands.

In order to improve the tightness of the sliding device, a sliding device occurs at present, which realizes a sealing effect by enabling window sashes to be in close contact with seals on window frames through tiny lateral movement produced during closing of the window sashes. By this method, since friction occurs between the window sashes and the seals when the window sashes are closed and opened, the wear to the seals is great, high-quality seals are needed for supporting and the production cost is thus high.

Chinese Patent No. CN 102094571A provides another sliding sash of a sliding door/window with high sealing performance, by installing movable seals on the window sash and enabling the seals to move and further come into close contact with a window frame below when the window sash is closed, the sealing between the window sash and the window frame is improved. However, on one hand, since the seals are in contact with the window frame for sealing by virtue of brush strips or rubber strips arranged thereon only, gaps remain between the seals and the window sash, thus fully sealing cannot be realized and the overall sealing performance of the sliding door/window is influenced. On the other hand, in order to improve the tightness of a sealing device relative to the window sash, the seals must be installed in close contact with the inner wall of the window sash, thus the moving resistance of the sealing device is increased, and not only the wear to the seals is increased, but also the use experience of customers is reduced.

SUMMARY OF THE INVENTION

The technical problem to be solved by the present invention is to provide a high-tightness sliding device, for example, a sliding door or a sliding window, which has the advantages that the tightness of a sliding sash can be improved and the application range of the sliding device is widened; moreover, the production cost is low, the structure is reliable and the popularization is facilitated.

In order to solve the above-mentioned technical problem, the present invention provides a high-tightness sliding device, comprising a frame and a sliding sash. An opening and closing device, a transmission device and sealing devices are arranged on the sliding sash; chute members are respectively arranged at top and bottom positions of the frame, and rail members are respectively arranged at top and bottom positions of the sliding sash; the sealing devices are arranged in the rail members of the sliding sash, and the opening and closing device drives the sealing devices to move up and down between a sealed position and an unsealed position by means of the transmission device; bosses are arranged on the chute members of the frame, grooves into which the bosses stretch are arranged on the rail members of the sliding sash, transverse projections are further arranged on the rail members of the sliding sash, and the sealing devices can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing devices reach the sealed position.

The chute members are transverse members forming the frame, and are used not only for supporting vertical rod members located on two sides thereof, but also for supporting the sliding sash such that the sliding sash can slide therein. The chute members comprise a top sliding track and a bottom sliding track, and the sliding sash is arranged in the frame formed by the chute members and the vertical rod members.

The rail members are members forming the top and bottom portions of the sliding sash and comprise a top rail and a bottom rail, the bottom rail is adapted to the bottom sliding track of the frame, and the top rail is adapted to the top sliding track of the frame. The top rail and the bottom rail are combined with smooth rabbets on two sides to form the sliding sash, and plate members such as glass are generally installed in a space among the top rail, the bottom rail and the smooth rabbets on the two sides.

Each boss is a member which protrudes out of a working surface of the corresponding chute member. It can be an independent part which is fastened onto the corresponding chute member, or integrally molded with the corresponding chute member.

Each transverse projection is a member which is arranged on the corresponding rail member. It can be an independent part which is fastened onto the corresponding rail member, or integrally molded with the corresponding rail member. Since the main effect and function of the transverse projections are to be fit with the bosses and to be respectively and hermetically coupled with the sealing devices, through the transverse projections and the bosses, in fact, a ventilation gap between the sliding sash and the frame is limited between the transverse projections and the bosses.

The sealed position and the unsealed position are two positions which can be reached by the sealing devices when the sealing devices move up and down in the sliding sash; and wherein, at the sealed position, the sealing of the ventilation gap between the sliding sash and the frame can be realized, and at the unsealed position, the sealing devices can avoid the frame or the bosses arranged thereon, so as to avoid friction between the sealing devices and the frame when the sliding sash moves.

According to the above-mentioned technical solution, it can be found that the present invention has the following technical effects:

1. Since the grooves are arranged on the rail members of the sliding sash, the bosses can be received and allowed to stretch into the grooves to guide the ventilation gap between the sliding sash and the frame into the rail members.

2. Since the transverse projections are further arranged on the rail members of the sliding sash, through an extension length which can be formed by the transverse projections, a reasonable spacing exists between the sealing devices and a side wall body of the sliding sash, such that the sealing devices can freely move up and down in the sliding sash without being obstructed by the wall body of the sliding sash.

3. Since the grooves are arranged on the rail members of the sliding sash and the transverse projections are further arranged on the rail members of the sliding sash, through the paired arrangement structure of the transverse projections and the bosses, in fact, the ventilation gap between the sliding sash and the sliding frame is limited between the transverse projections and the bosses.

4. Since the sealing devices can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing devices reach the sealed position, the sealing devices not only can be hermetically coupled with the sliding sash, but also can be hermetically coupled with the sliding frame, such that the ventilation gap between the sliding sash and the sliding frame can be fully sealed and the sealing effect between the sliding sash and the sliding frame is greatly improved.

5. Since the sealing devices can move up and down between the sealed position and the unsealed position, there is no possibility that friction exists between the sealing devices and the sliding frame when the sliding sash moves.

As an improvement to the above-mentioned solution, each of the sealing devices comprises a sealing member and seals which are arranged on the sealing member, and the seals can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing device reaches the sealed position; and each sealing device further comprises moving bases, the moving bases are fixedly connected with the transmission device and can drive the sealing device to move up and down. Since the moving bases are connected with the transmission device, in fact, the moving bases are parts which can move along with the transmission device. The moving bases can be connected onto the transmission device directly and fixedly, or through an intermediate connecting device. Compared with the prior art, especially with Chinese Patent CN 102094571A, since the moving bases are in fixed connection instead of transmission connection with the transmission device, not only do the moving bases not need to be additionally positioned such that the positioning structure is simple, but also the running travel of the moving bases can be directly controlled such that the vertical travel of the sealing devices can be reliably determined.

As an improvement to the above-mentioned solution, inclined grooves which are inclined at a certain angle are formed on the moving bases, pins which are fit with the inclined grooves are fixedly arranged on the sealing member, and the pins are arranged in the inclined grooves and can slide within the inclined grooves. Thus, by virtue of the inclined grooves and the pins, the vertical position of the sealing member can be lifted up or lowered down. According to the solution, an equivalent solution can also be that inclined slopes are arranged at the top portions of the moving bases, the sealing devices are lifted up through the inclined slopes and the vertical movement of the sealing devices can also be realized; and in such a structure, it would be the best to arrange a return spring between the sealing devices and the sliding sash.

As an improvement to the above-mentioned solution, the chute members comprise a top sliding track and a bottom sliding track, and the rail members comprise a top rail and a bottom rail; and ends of upper portions of the inclined grooves of the moving bases arranged in the bottom rail are connected

with horizontal grooves which are horizontally arranged. Thus, the sealing devices can be positioned by virtue of the horizontal grooves and be prevented from falling down at the unsealed position.

As an improvement to the above-mentioned solution, the opening and closing device comprises a sealing handle which is arranged on the sliding sash; the transmission device comprises a longitudinal transmission member arranged in a smooth rabbet of the sliding sash, one end of the longitudinal transmission member is connected with the sealing handle, and the other end of the longitudinal transmission member is connected with corner clips at junctions of the smooth rabbet and the rail members; and the corner clips are then connected with transverse transmission members arranged in the rail members, and the transverse transmission members are then fixedly connected with the moving bases.

As an improvement to the above-mentioned solution, the sealing handle is further connected with a door/window lock for locking the sliding sash to the frame; when the sealing handle is located at an open position, the door/window lock is unlocked and the sealing devices are located at the unsealed position; and when the sealing handle is located at a locked position, the door/window lock is locked and the sealing devices are located at the sealed position.

As an improvement to the above-mentioned solution, a door/window handle is further arranged on the sliding sash, and the door/window handle is connected with the door/window lock for locking the sliding sash to the frame.

As an improvement to the above-mentioned solution, guide tracks are arranged on the bosses and pulleys fit with the guide tracks are arranged on the rail members.

As an improvement to the above-mentioned solution, sealing plugs are arranged at two ends of the sealing member.

As an improvement to the above-mentioned solution, brushes are arranged on one side, facing the bosses, of the transverse projections. The brushes are seals with a hairy surface. The brushes can have a certain windproof and dustproof effect, and more importantly, can prevent particles such as sand and dust from entering the sliding sash to influence the sealing effect of the sealing devices. Therefore, through the collaboration of the brushes, the sealing effect and the service life of the sealing devices are greatly improved.

By implementing the present invention, the beneficial effects are obtained as follows:

by sealing a gap between the sliding sash and the frame through the movable sealing devices in the present invention, the tightness of the sliding sash is improved and the application range of the sliding device is widened; furthermore, the production cost is low and the popularization is facilitated.

DESCRIPTION OF THE DRAWINGS

Fig. 1 is a global structural exploded view of a high-tightness sliding device of the present invention;

Fig. 2 is a sectional view of a window frame and a window sash of the high-tightness sliding device of the present invention;

Fig. 3 is a state view of a sealing device of the high-tightness sliding device of the present invention at an unsealed position;

Fig. 4 is a state view of the sealing device of the high-tightness sliding device of the present invention at an unsealed position;

Fig. 5 is a structural diagram of a moving base and a sealing member in a bottom rail of the high-tightness sliding device of the present invention;

Fig. 6 is a structural diagram of a moving base and a sealing member in a top rail of the high-tightness sliding device of the present invention; and

Fig. 7 is a structural diagram of an opening and closing device in a second embodiment of the high-tightness sliding device of the present invention.

DESCRIPTION OF THE EMBODIMENTS

In order to make the purposes, technical solutions and advantages of the present invention clearer, the present invention will be further described below in detail in combination with the drawings.

As shown in Figs. 1-4, an embodiment of the present invention provides a high-tightness sliding device, for example, a sliding door or a sliding window. In the present invention, the description is made in detail by taking the sliding window as an example. In the high-tightness sliding device provided by the present invention, the sliding window comprises a window frame 1 and a window sash 2, an opening and closing device 3, a transmission device 4 and sealing devices 5 are arranged on the window sash 2, and the opening and closing device 3 is connected with the sealing devices 5 through the transmission device 4. Chute members are respectively arranged at top and bottom positions of the window frame 1, rail members are respectively arranged at top and bottom positions of the window sash 2, the chute members comprise a top sliding track 11 and a bottom sliding track 12, and the rail members comprise a top rail 21 and a bottom rail 22.

Bosses 13 are arranged in the top sliding track 11 and the bottom sliding track 12 of the window frame 1, grooves 23 into which the bosses 13 stretch are arranged in the top rail 21 and the bottom rail 22 of the window sash 2, and gaps 6 are left between left and right sides of the bosses 13 and a side wall body of the window sash 2; and the sealing devices 5 are arranged in the top rail 21 and the bottom rail 22 of the window sash 2 and can move between a sealed position and an unsealed position under the control of the opening and closing device 3.

By sealing the gap 6 between the window sash 2 and the window frame 1 through the movable sealing devices 5, the tightness of the window sash 2 is improved and the application range of the sliding door/window is widened; furthermore, the production cost is low and the popularization is facilitated.

Preferably, each of the sealing devices 5 comprises a sealing member 52, the sealing member 52 can be of an I-shaped structure, seal 53 are arranged at the positions, facing the gaps 6 between the bosses 13 and the side wall body of the window sash 2, of the sealing member 52 (i.e., at two end portions of a top or bottom side of the I-shaped structure). The seals 53 can be sealing rubber strips or brush strips. Since the sealing performance of the sealing rubber strips while pressing positions to be sealed is superior to that of the brush strips, the seals 53 are preferably sealing rubber strips. The sealing member 52 moves between the sealed position and the unsealed position, such that the seals 53 seal or leave the gaps 6 between the bosses 13 and the side wall body of the window sash 2.

Preferably, transverse projections 24 which transversely stretch out toward the bosses 13 are arranged in the grooves 23, the transverse projections 24 extend by a certain length from one side wall body of the window sash 2, and thus the gaps between the bosses 13 and the transverse projections 24 in fact

are gaps between the window sash 2 and the window frame 1. When the sealing member 52 is located at the sealed position, the seals 53 press the top surfaces of the transverse projections 24 and the bosses 13 to form sealed coupling.

More preferably, the top surfaces of the transverse projections 24 can be arranged to be in flush with the bosses 13 and the bottom surfaces of the seals 53 can be arranged to be horizontal sealing rubber strips, such that the sealing member 52 can horizontally press the top surfaces of the transverse projections 24 and the bosses 13 to seal a passage between the external world and the internal portion of the sliding door/window and to improve the sealing performance. Similarly, the transverse projections 24 can be arranged to be in regular geometric shapes such as triangular shape, arc shape, and the outer profile of the sealing member 52 is fit with that of the transverse projections 24, such that the sealing member 52 is in closer contact with the transverse projections during sealing.

Preferably, the sealing devices 5 further comprise moving bases 51 which are fixedly connected onto the transmission device 4, inclined grooves 54 which are inclined at a certain angle are arranged on the moving bases 51, pins 57 which are fit with the inclined grooves 54 are fixedly arranged on the sealing member 52, and the pins 57 are arranged in the inclined grooves 54 and can slide within the inclined grooves 54. When the moving bases 51 transversely move under the drive of the transmission device 4, the inclined grooves 54 of the moving bases 51 transversely move thereupon. Since the leftward and rightward movement of the sealing member 52 is limited, the sealing member 52 is arranged to be capable of moving up and down only, the pins 57 move along the inclined grooves 54, and the sealing member 52 is driven to vertically ascend or descend, such that the sealing devices 5 are allowed to enter the sealed position or the unsealed position.

Specifically, by taking the movement principle of the sealing device 5 within the bottom rail 22 as an example, when the moving bases 51 move rightward under the drive of the transmission device 4, since the pins 57 are fixed on the sealing member 52, the sealing member 52 moves upward under the guide of the inclined grooves 54 until the sealing member 52 fully leaves the top surfaces of the transverse projections 24 and the bosses 13 and reaches the predetermined unsealed position. When the moving bases 51 move leftward under the drive of the transmission device 4, the sealing member 52 moves downward under the guide of the inclined grooves 54 until the seals 53 on the sealing member 52 press the top surfaces of the transverse projections 24 and the bosses 13, seal the gaps between the transverse projections 24 and the bosses 13 and reach the predetermined sealed position. For the movement of the sealing device 5 within the top rail 21, please refer to the above-mentioned principle.

Preferably, as shown in Fig. 5 and Fig. 6, ends of upper portions of the inclined grooves 54 of the moving bases 51 arranged in the bottom rail 22 are connected with horizontal grooves 55 which are horizontally arranged.

It is to be stated that, due to the installation feature of the sliding door/window, the distance of the window sash 2 relative to the top sliding track 11 is greater than the distance relative to the bottom sliding track 12. Therefore, in order to ensure that the sealing devices 5 at the top portion and the bottom portion of the window sash 2 have a same pressing force when being at the sealed position, the up-down movement of the sealing devices 5 arranged at the top portion and the bottom portion of the window sash 2 are asynchronous. Specifically, when the opening and closing device 3 drives the moving bases 51 at the top portion and the bottom portion to move leftward through the transmission device, since the ends of the upper portions of the inclined grooves 54 of the moving bases 51 arranged in the bottom rail 22 are connected with the horizontal grooves 55 which are horizontally

arranged and the pins 57 are initially arranged in the horizontal grooves 55, the sealing member 52 at the bottom portion will become stationary first and the sealing member 52 at the top portion moves upward; and when the pins 57 move to the inclined grooves 54 from the horizontal grooves 55 (by taking the moving bases 51 as a reference), the sealing member 52 at the bottom portion starts to move, the sealing member 52 at the top portion continuously moves upward, and thus at this moment, the sealing members 52 at the top portion and the bottom portion has an equal distance relative to the bosses 13. The sealing members 52 at the top portion and the bottom portion start to move synchronously until the predetermined sealed position is reached, such that the pressing force at the top portion and the bottom portion is guaranteed to be equal, and vice versa.

Preferably, the opening and closing device 3 comprises a sealing handle 31 which is arranged on the window sash 2; the transmission device 4 comprises a longitudinal transmission member 41 arranged on a smooth rabbet 26 of the window sash 2 and transverse transmission members 43 which are respectively arranged in the bottom rail 22 and the top rail 21, one end of the longitudinal transmission member 41 is connected with the sealing handle 31, and the other end of the longitudinal transmission member 41 is connected with corner clips 42 at junctions of the smooth rabbet 26 and the bottom rail 22 or the top rail 21; and the corner clips 42 are then connected with the transverse transmission members 43, and the transverse transmission members 43 are then fixedly connected with the moving bases 51.

It is to be stated that the sealing handle 31 can be connected with a gear (not shown), gear teeth are arranged at one end of the longitudinal transmission member 41 and engaged with the gear. When the sealing handle 31 rotates, the gear rotates synchronously to drive the longitudinal transmission member 41 to longitudinally move, and the movement of the longitudinal transmission member 41 is transformed into traverse movement through the corner clips 42. The corner clips 42 can be universal 90-degree corner clips in the aluminum material industry. The corner clips 42 drive the transverse transmission members 43 to transversely move and the transverse transmission members 43 drive the moving bases 51 to move. As another implementation of the sealing handle 31, the sealing handle 31 can be connected with an axis of an eccentric wheel, the eccentric wheel is driven to rotate when the sealing handle 31 rotates, and the eccentric wheel is connected with the longitudinal transmission member 41 to drive the longitudinal transmission member 41 to move upward or downward.

According to the first embodiment of the present invention, the sealing handle 31 is further connected with a door/window lock (not shown) for locking the window sash 2 to the window frame 1. When the sealing handle 31 is at an open position, the door/window lock is unlocked and the sealing devices 5 are located at the unsealed position; and when the sealing handle 31 is located at a locked position, the door/window lock is locked and the sealing devices 5 are located at the sealed position.

It is to be stated that the door/window lock can be a fastener or a snap lock, etc., commonly used in the aluminum material industry. In the embodiment, by connecting the door/window lock, for locking the window sash 2 to the window frame 1, with the sealing handle 31, the sealing handle 31 is enabled to further have a function of opening and closing a door/window and a seal. When the window sash 2 is locked, the sealing devices 5 seal the window sash 2; and when the window sash 2 is to be opened, the window sash 2 is unlocked, and the sealing devices 5 simultaneously release the sealing to the window sash 2. The operation is convenient and the design is user-friendly.

According to the second embodiment of the present invention, as shown in Fig. 7, the difference from the first embodiment is that a door/window handle 32 is further arranged on the window sash 2, and the door/window handle 32 is connected with the door/window lock for locking the window sash 2 to

the window frame 1. The door/window lock can be a fastener or a snap lock, etc., commonly used in the aluminum material industry.

It is to be stated that, by respectively arranging the door/window handle 32 and the sealing handle 31 in this embodiment to respectively realize the function of opening and closing the door/window and the seal, the door/window and the seal can be independently opened and closed and thus use requirements in different places are satisfied.

Preferably, in order to improve the sliding smoothness of the sliding window, guide tracks 14 are arranged on the bosses 13, and pulleys 27 fit with the guide tracks 14 are arranged on the bottom rail 22. The guide tracks 14 can be simultaneously arranged on the bosses 13 of both the top sliding tracks and the bottom sliding tracks 12, and the pulleys 27 can be correspondingly arranged in the top rail 21 and the bottom rail 22. According to the sliding demands of aluminum windows, the guide rail members 14 can also be arranged on the bosses 13 of the bottom sliding track 12 only, and the pulleys 27 are arranged in the bottom rail 22 and are fit with the guide tracks 14.

Preferably, sealing plugs 56 are arranged at two ends of the sealing member 52.

It is to be stated that the sealing plugs 56 and the seals 53 form an annular closed area, thus the overall sealing performance is improved, and rainwater and the like are prevented from entering from the ends of the seals 53.

Preferably, brushes 25 are arranged on one side, facing the bosses 13, of the transverse projections 24.

It is to be stated that the brushes 25 can have a certain windproof and dustproof effect, more importantly, can prevent particles such as sand and dust from entering the window sash 2 to influence the sealing effect of the sealing devices 5. Thus, the sealing effect and the service life of the sealing devices 5 are improved.

The embodiments disclosed above are just preferred embodiments of the present invention and shall not be considered as limitations to the scope of the present invention. Therefore, equivalent variations made according to the claims of the present invention shall fall into the scope of the present invention.

INDUSTRIAL APPLICABILITY

In the present invention, by sealing the gap between the sliding sash and the frame through the movable sealing devices, the tightness of the sliding sash is improved and the application range of the sliding door/window is widened; furthermore, the production cost is low and the popularization is facilitated.

CLAIMS

1. A high-tightness sliding device, comprising a frame and a sliding sash, an opening and closing device, a transmission device and sealing devices being arranged on the sliding sash, chute members being respectively arranged at top and bottom positions of the frame, rail members being respectively arranged at top and bottom positions of the sliding sash, the sealing devices being arranged in the rail members of the sliding sash, the opening and closing device driving the sealing devices to move up and down between a sealed position and an unsealed position by means of the transmission device, characterized in that bosses are arranged on the chute members of the frame, grooves into which the bosses stretch are arranged on the rail members of the sliding sash, transverse projections are further arranged on the rail members of the sliding sash, and the sealing devices can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing devices reach the sealed position.
2. The high-tightness sliding device according to claim 1, characterized in that each of the sealing devices comprises a sealing member and seals which are arranged on the sealing member, and the seals can be respectively and hermetically coupled with the transverse projections and the bosses when the sealing device reaches the sealed position; and each of the sealing devices further comprises a moving base, and the moving base is fixedly connected with the transmission device and can drive the sealing device to move up and down.
3. The high-tightness sliding device according to claim 2, characterized in that inclined grooves which are inclined at a certain angle are formed on the moving bases, pins which are fit with the inclined grooves are fixedly arranged on the sealing member, and the pins are arranged in the inclined grooves and can slide within the inclined grooves.
4. The high-tightness sliding device according to claim 3, characterized in that the chute members comprise a top sliding track and a bottom sliding track, and the rail members comprise a top rail and a bottom rail; and ends of upper portions of the inclined grooves of the moving bases arranged in the bottom rail are connected with horizontal grooves which are horizontally arranged.
5. The high-tightness sliding device according to any one of claims 2-4, characterized in that the opening and closing device comprises a sealing handle which is arranged on the sliding sash; the transmission device comprises a longitudinal transmission member arranged in a smooth rabbet of the sliding sash, one end of the longitudinal transmission member is connected with the sealing handle, and the other end of the longitudinal transmission member is connected with corner clips arranged at junctions of the smooth rabbet and the rail members; and the corner clips are then connected with transverse transmission members arranged in the rail members, and the transverse transmission members are then fixedly connected with the moving bases.
6. The high-tightness sliding device according to claim 5, characterized in that the sealing handle is further connected with a door/window lock for locking the sliding sash to the frame; when the sealing handle is located at an open position, the door/window lock is unlocked and the sealing device is located at the unsealed position; and when the sealing handle is located at a locked position, the door/window lock is locked and the sealing device is located at the sealed position.

7. The high-tightness sliding device according to claim 5, characterized in that a door/window handle is further arranged on the sliding sash, and the door/window handle is connected with the door/window lock for locking the sliding sash to the frame.

8. The high-tightness sliding device according to claim 4, characterized in that guide tracks are arranged on the bosses and pulleys fit with the guide tracks are arranged on the rail members.

9. The high-tightness sliding device according to claim 2, characterized in that sealing plugs are arranged at two ends of the sealing member.

10. The high-tightness sliding device according to any one of claims 1-4, characterized in that brushes are arranged on one side, facing the bosses, of the transverse projections.

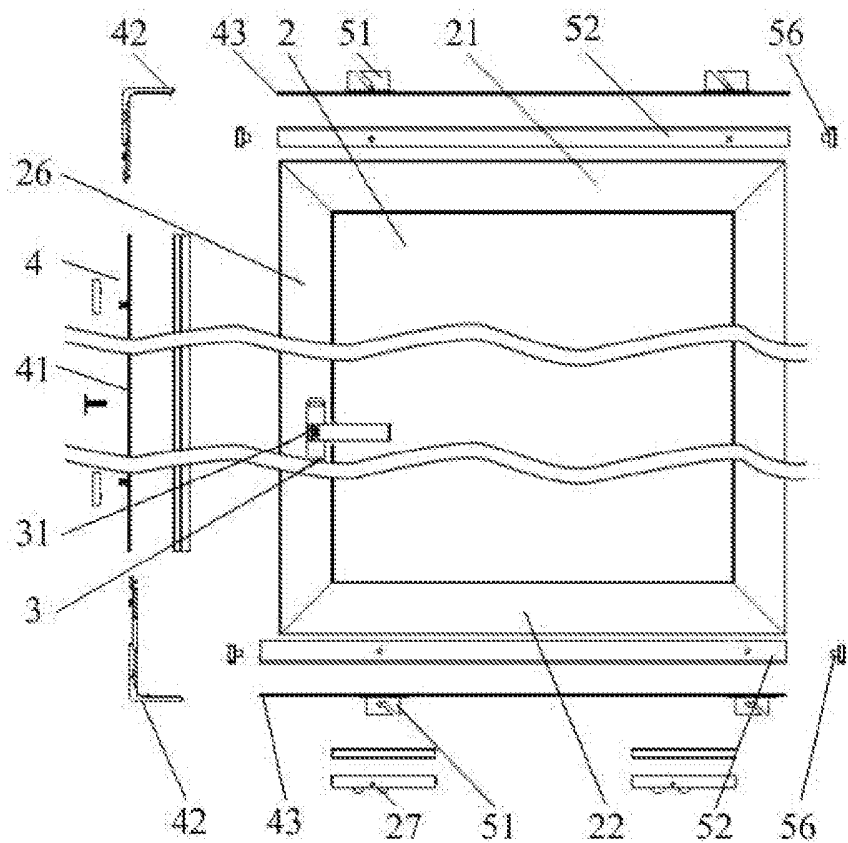


Fig. 1

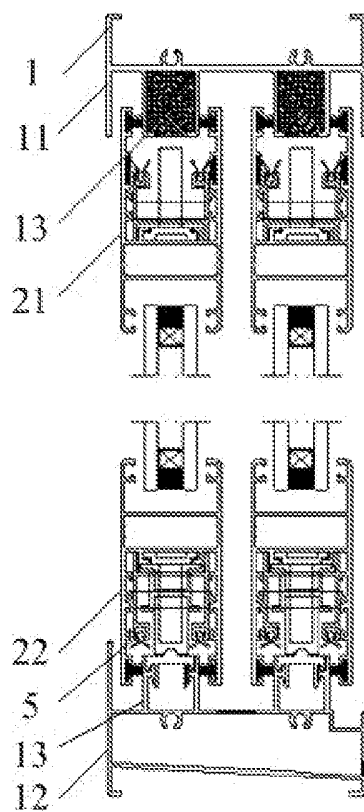


Fig. 2

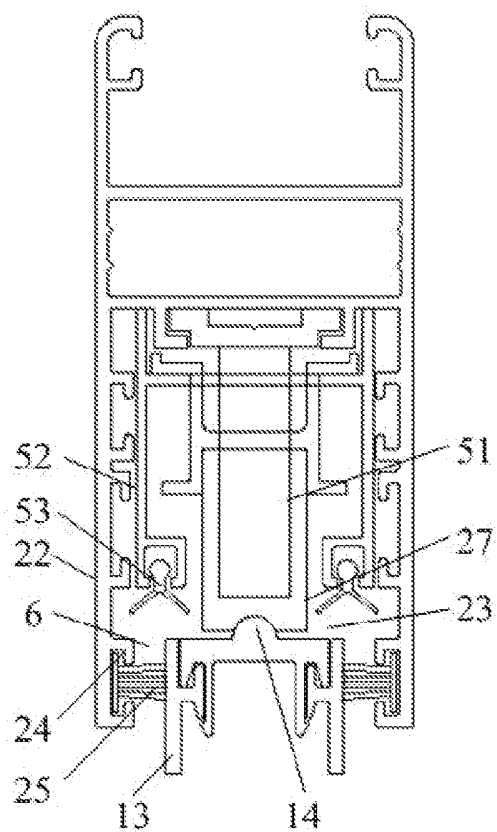


Fig. 3

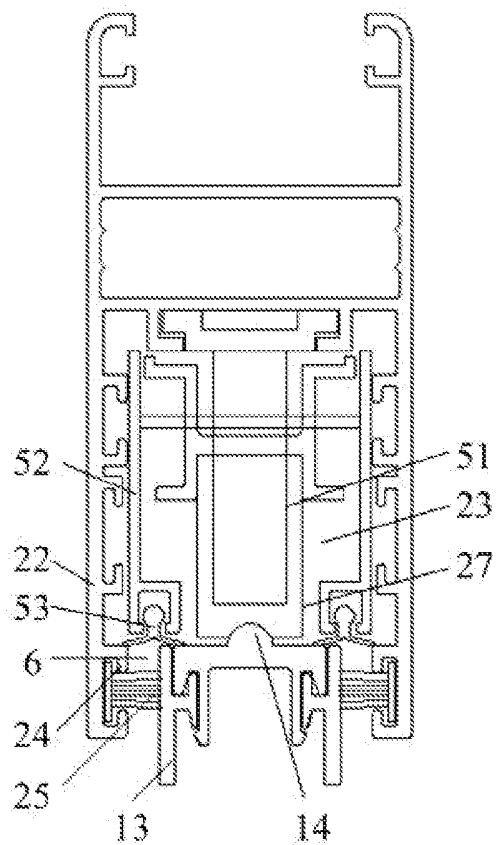


Fig. 4

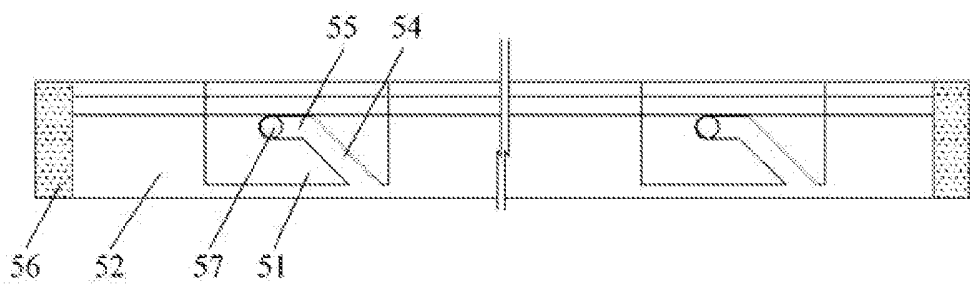


Fig. 5

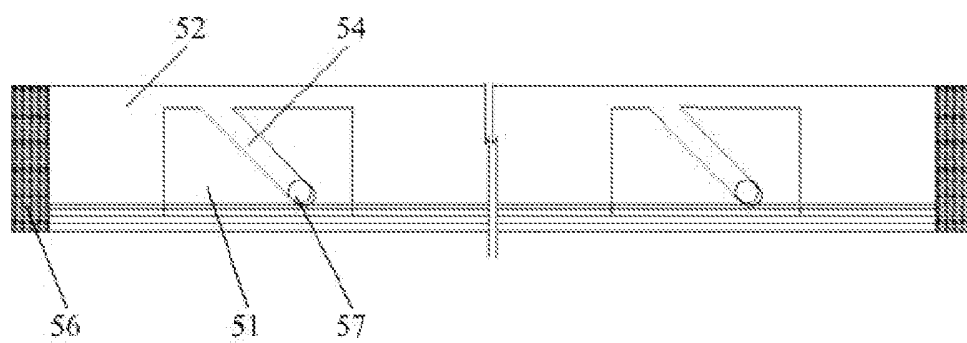


Fig. 6

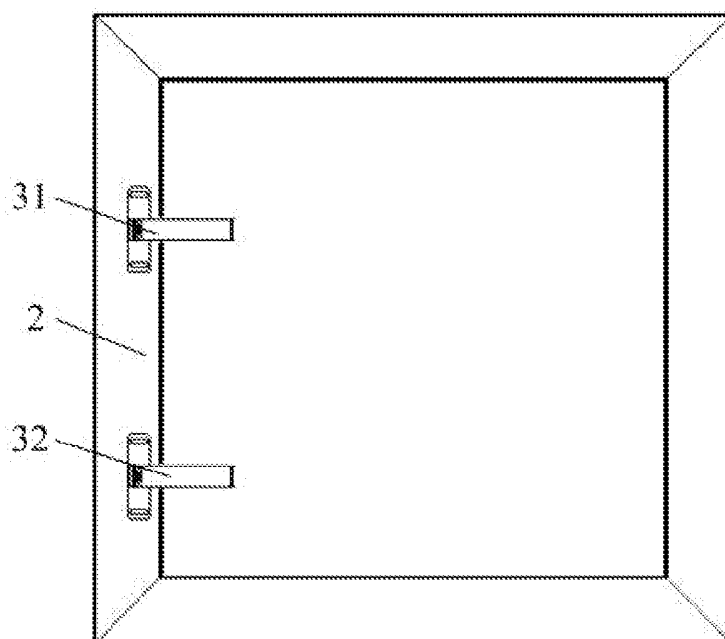


Fig. 7