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(54) FRAME BODY STRUCTURE OF PUSH OUT WINDOW

RAHMENSTRUKTUR FÜR KLAPPFENSTER

STRUCTURE DE CORPS DE CADRE DE FENÊTRE BASCULANTE

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(56) References cited:
EP-A2- 2 341 210 WO-A1-2008/132530
CN-A- 102 206 988 CN-A- 102 359 327
CN-U- 201 891 373 CN-U- 202 125 236
CN-U- 202 325 015 CN-U- 203 114 021
GB-A- 2 161 201 JP-A- S6 416 377
JP-A- H07 247 775

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present disclosure relates to a frame body structure, and particularly relates to a frame body structure of a push-out window, which is watertight and airtight.

2. The Prior Arts

[0002] The buildings such as residential, office or commercial buildings usually set up a number of openings, and then set up their windows. The windows can be opened and closed to achieve air convection and blocking outdoor dust or rain into the room. Although there are a wide variety of windows currently in use, sliding windows are still commonly used. Today's sliding window is designed and made of two windows. The aforementioned benefits can be achieved by sliding one of the windows. When a sliding window is opened, half of the opening of the sliding window is blocked by another of the windows; accordingly, air flow will be reduced. Therefore, in order not to affect the flow of air on the building opening, many consumers use a push-out window. Moreover, when the push-out window is opened, in order to prevent the outdoor dust or mosquitoes from getting in the room, a gauze structure such as a folding screen is provided on the push-out window. People's Republic of China Patent No. CN102359327 discloses a wooden and aluminum composite window with built-in folding screens. A groove is provided between the mullion frame and the inner wood-aluminum composite frame, and a folding screen is provided in the groove. When the folding screen is expanded, it can be achieved that the outdoor dust or mosquitoes are prevented from getting in the room. However, since the setting of the groove does not take into account the factors of watertightness and airtightness, such windows have the problems of bad watertightness and airtightness.

[0003] WO 2008/132530 A1 discloses a frame body structure of a push-out window, comprising an outer frame and an inner leaf, wherein the outer frame is at least provided with an opening, the inner leaf is pivotally connected to the outer frame and opens and closes the opening of the outer frame, at least one channel is provided on the outer frame in a closed area between the inner leaf and the outer frame when the inner leaf closes the opening of the outer frame, and a frame body is arranged in the at least one channel.

[0004] GB 2 161 201 A also discloses a frame body structure of a push-out window.

SUMMARY OF THE INVENTION

[0005] It is a primary object of the present invention to provide a frame structure which can completely hide a

folding screen window assembly and also is watertight and airtight excellently.

[0006] In order to achieve the above objective, the present disclosure provides a frame body structure of push-out window according to claim 1. When the inner leaf closes the opening of the outer frame, the at least one airtight bar at the outer frame and the inner leaf is able to fit against the frame body so as to enable the setting of the frame body not to affect the watertight and airtight effect.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

Fig. 1 is a three-dimensional representation of a push-out window according to the present disclosure.

Fig. 2 is another three-dimensional representation of a push-out window according to the present disclosure.

Fig. 3 shows a diagram of a push-out window according to an preferred embodiment of the present disclosure.

Fig. 4 shows a cross-sectional view taken along lines A-A of Fig. 3 according to a preferred embodiment of the present disclosure.

Fig. 5 shows a cross-sectional view taken along lines B-B of Fig. 3 according to a preferred embodiment of the present disclosure.

Fig. 6 shows another cross-sectional view taken along lines A-A of Fig. 3 according to a preferred embodiment of the present disclosure.

Fig. 7 shows the other cross-sectional view taken along lines A-A of Fig. 3 according to a preferred embodiment of the present disclosure.

Fig. 8 shows a cross-sectional view of a push-out window according to another preferred embodiment of the present disclosure.

Fig. 9 shows another cross-sectional view of a push-out window according to another preferred embodiment of the present disclosure.

Fig. 10 shows the other cross-sectional view of a push-out window according to another preferred embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0008] The detailed description of the present invention is provided in combination with the accompanying drawings.

[0009] Referring to Fig. 1 and Fig. 2, according to the preferred embodiment of the present disclosure, the frame body structure of push-out window includes an outer frame 1 and an inner leaf 2, wherein the outer frame 2 includes an upper horizontal border 11, a lower horizontal border 12 and two upright borders. The upper hor-

horizontal border 11 and the lower horizontal border 12 are respectively arranged at both ends of two upright borders 13 and are opposite to each other. An opening is formed by the upper horizontal border 11, the lower horizontal border 12 and two upright borders 13. The inner leaf 2 is pivotally connected to the outer frame 1 as well as opening and closing the outer frame 1 by means of pivoting on the outer frame 1. Also referring to Fig. 1 and Fig. 2, according to the preferred embodiment of the present disclosure, the inner leaf 2 is pivotally connected to the outer frame 1 by means of a plurality of hinges 3 or an upper connecting rod structure 4 and a lower connecting rod structure 5, but not limited to the present disclosure. Any other pivoting structures of the inner leaf 2 pivotally connected to the outer frame 1 all belong to the application areas of the present disclosure.

[0010] As shown in Figs. 3 to 7, when the inner leaf 2 closes the opening of the outer frame 1, a channel A is provided in a closed area between the outer frame 1 and the inner leaf 2; certainly the channel A may be provided on each of the upright borders of the outer frame 1, as shown in Fig. 5, but not limited to the present disclosure. Since the channel A is used in the preferred embodiments of the present disclosure, the description related to the channel A will not be repeated. Also referring to Fig. 4, Fig. 6 and Fig. 7, the channel A may be arranged on the outer frame 1 and a frame body B may be arranged in the channel A. A part of the frame body B protrudes out of the channel A. A first airtight bar C may be provided at the outer frame 1 and the inner leaf 2 and being attached to the protruding part of the frame body B. When the inner leaf 2 closes the opening of the outer frame 1, the first airtight bar C at the outer frame 1 and the inner leaf 2 is able to fit against the frame body B so as to enable the setting of the frame body B not to affect the watertight and airtight effect.

[0011] Figs. 8 to 10 show cross-sectional views of a push-out window according to another preferred embodiment of the present disclosure. Another preferred embodiment of the present disclosure is similar to the preferred embodiment of the present disclosure. The same parts as those of the preferred embodiment of the present disclosure are denoted by the same reference numerals in another preferred embodiment of the present disclosure. As such, the same parts will not be repeated thereafter.

[0012] Referring to Figs. 8 to 10, according to another preferred embodiment of the present disclosure, the channel A and the frame body B are arranged at the outer frame 1. A second airtight bar D is provided at the outer frame 1 and the inner leaf 2 and being attached to the protruding part of the frame body B. Therefore, with the arrangement of the second airtight bar D, it is possible to increase watertightness and airtightness between the outer frame 1 and the inner leaf 2. In addition, the protruding part of the frame body B relative to the second airtight bar may include a slot B1, and the second airtight bar may be embedded in the slot so as to improve wa-

tertightness and airtightness between the outer frame 1 and the inner leaf 2.

[0013] As shown in Figs. 4 to 10, according to the preferred embodiments of the present disclosure, the frame body B may be provided with a folding screen window component 7 including a folding gauze 71 and a moving part 72. The folding screen window component 7 may be completely hidden inside the frame body B without obstructing the sight of the opening 14 of the outer frame 1. Accordingly, when the inner leaf 2 opens the opening of the outer frame 1, the folding gauze 71 can prevent the outdoor dust or mosquitoes from getting in the room.

[0014] Although the present disclosure has been described with reference to the preferred exemplary preferred embodiments thereof, it is apparent to those skilled in the art that a variety of modifications and changes may be made without departing from the scope of the present disclosure which is defined by the appended claims.

Claims

1. A frame body structure of push-out windows, comprising:

an outer frame (1) and an inner leaf (2), wherein the outer frame (1) is at least provided with an opening (14), the inner leaf (2) is pivotally connected to the outer frame (1) and opens and closes the opening (14) of the outer frame (1), at least one channel (A) is provided in a closed area between the inner leaf (2) and the outer frame (1) when the inner leaf (2) closes the opening (14) of the outer frame (1), a frame body (B) for receiving a folding screen window component is arranged in the at least one channel (A), and a part of the frame body (B) protrudes out of the at least one channel (A), wherein the at least one channel (A) is provided on the outer frame (1), and wherein at least one airtight bar (C, D) is provided between the protruding part of the frame body (B) and the outer frame (1) and/or the inner leaf (2), so that when the inner leaf (2) closes the opening (14) of the outer frame (1), the at least one airtight bar (C, D) is able to fit against the frame body (B) so as to enable the setting of the frame body (B) not to affect the watertight and airtight effect.

2. The frame body structure of push-out windows of claim 1, wherein at least one airtight bar (C, D) is provided at the outer frame (1) and the inner leaf (2) and attached to the protruding part of the frame body (B).
3. The frame body structure of push-out windows of

claim 1, wherein at least one airtight bar (C, D) is provided at the outer frame (1) and attached to the protruding part of the frame body.

4. The frame body structure of push-out windows of claim 1, wherein at least one airtight bar (C, D) is provided at the inner leaf (2) and attached to the protruding part of the frame body (B). 5
5. The frame body structure of push-out windows of claim 1, wherein at least one airtight bar (C, D) is provided at the protruding part of the frame body (B) and attached to the outer frame (1). 10
6. The frame body structure of push-out windows of claim 1, wherein at least one airtight bar (C, D) is provided at the protruding part of the frame body (B) and attached to the inner leaf (2). 15
7. The frame body structure of push-out windows of claims 5 or 6, wherein the protruding part of the frame body (B) relative to the at least one airtight bar (D) includes a slot (B1), and the at least one airtight bar (D) is embedded in the slot (B1). 20
8. The frame body structure of push-out windows of claim 1, wherein the frame body (B) is provided with a folding screen window component (7). 25

Patentansprüche

1. Rahmenkörperstruktur von Ausstellfenstern, umfassend: 30
 - einen äußeren Rahmen (1) und einen inneren Flügel (2),
 - wobei der äußere Rahmen (1) mindestens mit einer Öffnung (14) versehen ist, der innere Flügel (2) schwenkbar mit dem äußeren Rahmen (1) verbunden ist und die Öffnung (14) des äußeren Rahmens (1) öffnet und schließt, mindestens ein Kanal (A) in einem geschlossenen Bereich zwischen dem Flügel (2) und dem äußeren Rahmen (1) vorgesehen ist, wenn der innere Flügel (2) die Öffnung (14) des äußeren Rahmens (1) schließt, ein Rahmenkörper (B) zum Aufnehmen einer Faltfensterkomponente in dem mindestens einen Kanal (A) angeordnet ist und ein Teil des Rahmenkörpers (B) aus dem mindestens einen Kanal (A) hervorsteht, wobei der mindestens eine Kanal (A) an dem äußeren Rahmen (1) vorgesehen ist, und wobei mindestens eine luftdichte Stange (C, D) zwischen dem hervorstehenden Teil des Rahmenkörpers (B) und dem äußeren Rahmen (1) und/oder dem inneren Flügel (2) vorgesehen ist, so dass, wenn der innere Flügel (2) die Öffnung 40

(14) des äußeren Rahmens (1) schließt, die mindestens eine luftdichte Stange (C, D) gegen den Rahmenkörper (B) passen kann, damit ermöglicht wird, dass die Einstellung des Rahmenkörpers (B) nicht die wasserdichte und luftdichte Funktion beeinflusst.

2. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei mindestens eine luftdichte Stange (C, D) an dem äußeren Rahmen (1) und dem inneren Flügel (2) vorgesehen ist und an dem hervorstehenden Teil des Rahmenkörpers (B) angebracht ist.
3. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei mindestens eine luftdichte Stange (C, D) an dem äußeren Rahmen (1) vorgesehen ist und an dem hervorstehenden Teil des Rahmenkörpers angebracht ist.
4. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei mindestens eine luftdichte Stange (C, D) an dem inneren Flügel (2) vorgesehen ist und an dem hervorstehenden Teil des Rahmenkörpers (B) angebracht ist.
5. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei mindestens eine luftdichte Stange (C, D) an dem hervorstehenden Teil des Rahmenkörpers (B) vorgesehen ist und an dem äußeren Rahmen (1) angebracht ist.
6. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei mindestens eine luftdichte Stange (C, D) an dem hervorstehenden Teil des Rahmenkörpers (B) vorgesehen ist und an dem inneren Flügel (2) angebracht ist.
7. Rahmenkörperstruktur von Ausstellfenstern nach dem Anspruch 5 oder 6, wobei der hervorstehenden Teil des Rahmenkörpers (B) bezüglich der mindestens einen luftdichten Stange (D) eine Aussparung (B1) enthält und die mindestens eine luftdichte Stange (D) in der Aussparung (B1) eingebettet ist.
8. Rahmenkörperstruktur von Ausstellfenstern nach Anspruch 1, wobei der Rahmenkörper (B) mit einer Faltfensterkomponente (7) versehen ist.

Revendications

1. Structure de corps de cadre de fenêtres basculantes, comprenant :
 - un cadre extérieur (1) et un vantail intérieur (2), dans lequel le cadre extérieur (1) est au moins muni d'une ouverture (14), le vantail intérieur (2)

- est relié à pivotement au cadre extérieur (1) et ouvre et ferme l'ouverture (14) du cadre extérieur (1), au moins une gorge (A) est prévue dans une zone fermée entre le vantail intérieur (2) et le cadre extérieur (1), lorsque le vantail intérieur (2) ferme l'ouverture (14) du cadre extérieur (1), un corps de cadre (B), destiné à loger un composant de fenêtre à paravent est agencé dans la au moins une gorge (A) et une partie du corps de cadre (B) fait saillie hors de la au moins une gorge (A),
 dans lequel la au moins une gorge (A) est prévue sur le cadre extérieur (1) et
 dans lequel au moins un barreau étanche à l'air (C, D) est prévu entre la partie saillante du corps de cadre (B) et le cadre extérieur (1) et / ou le vantail intérieur (2), de sorte que, lorsque le vantail intérieur (2) ferme l'ouverture (14) du cadre extérieur (1), le au moins un barreau étanche à l'air (C, D) est en mesure de s'adapter contre le corps de cadre (B), de façon à permettre que le réglage du corps de cadre (B) n'affecte pas les effets étanche à l'eau et étanche à l'air.
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8. Structure de corps de cadre de fenêtres basculantes selon la revendication 1, dans lequel le corps de cadre (B) est muni d'un composant de fenêtre à paravent (7).
- par rapport au au moins un barreau étanche à l'air (D) comporte une fente (B1) et le au moins un barreau étanche à l'air (D) est incorporé dans la fente (B1).

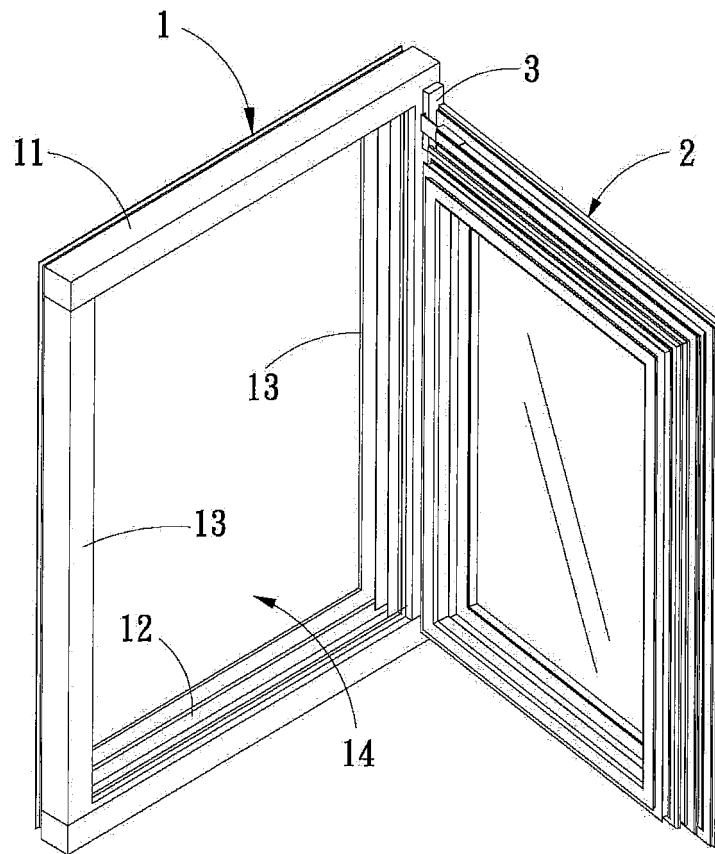


Fig. 1

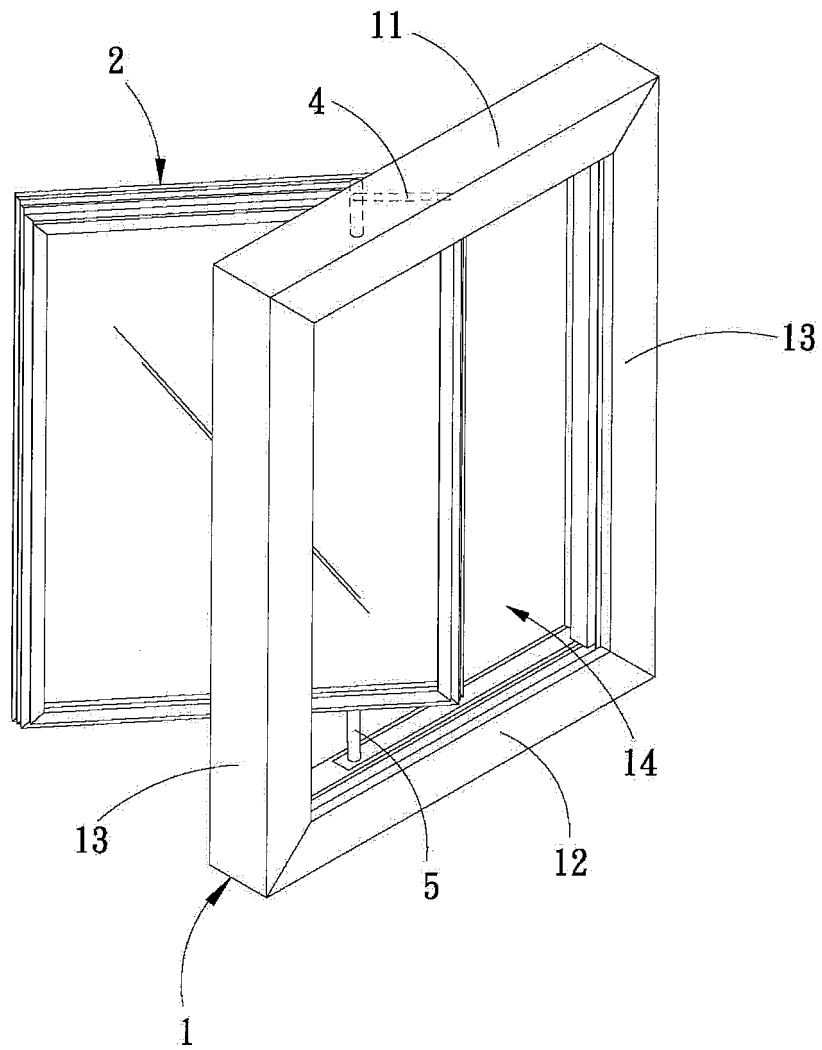


Fig. 2

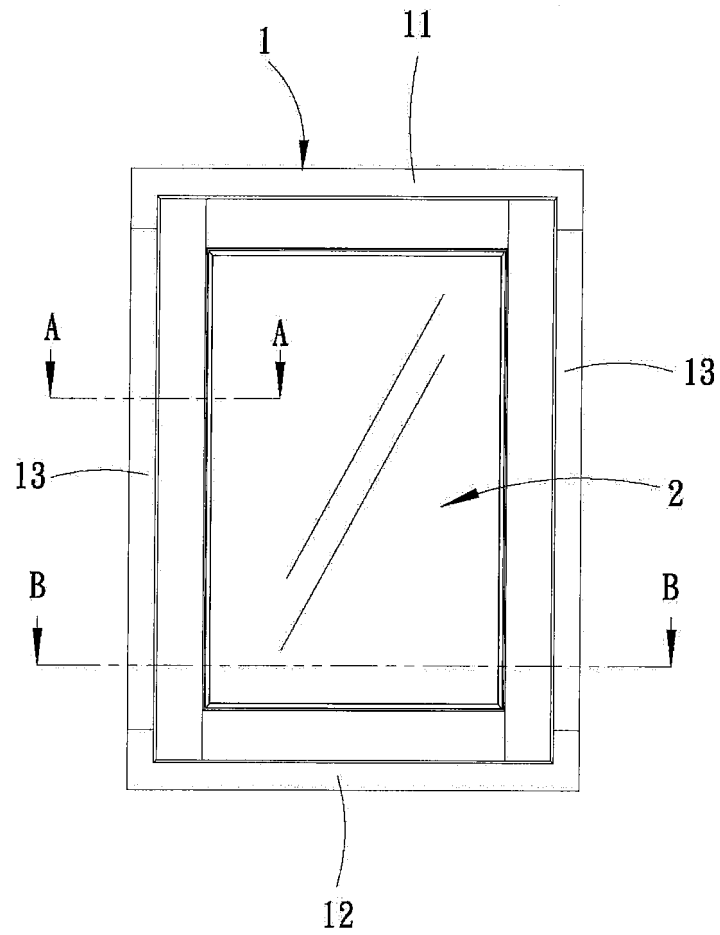


Fig. 3

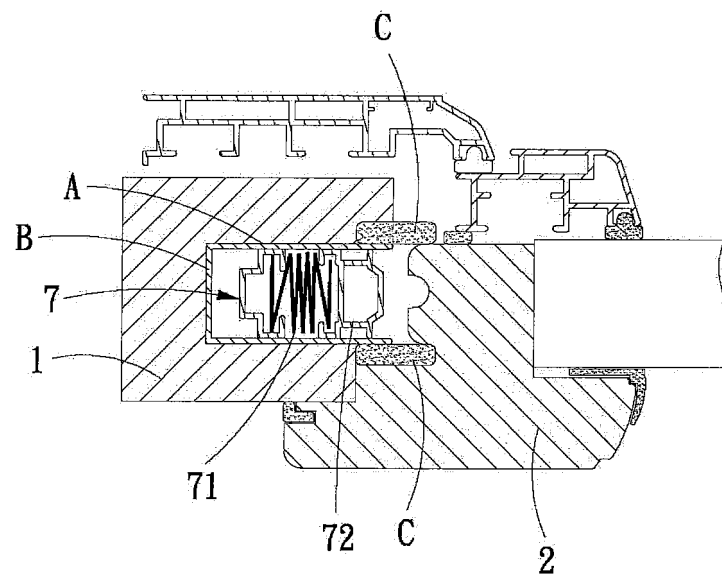


Fig. 4

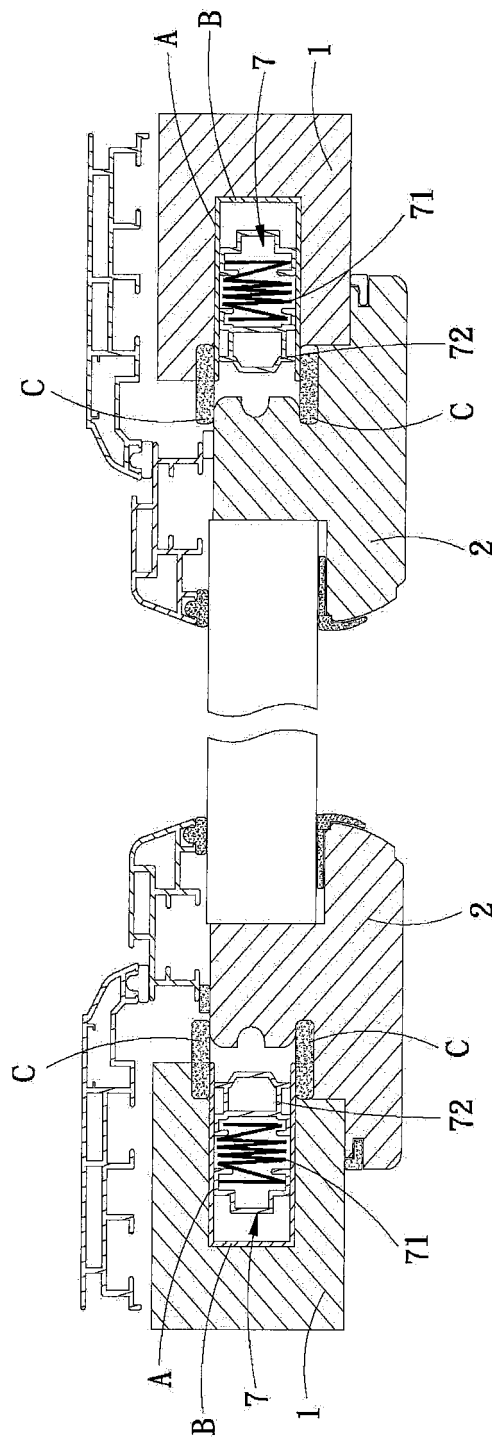


Fig. 5

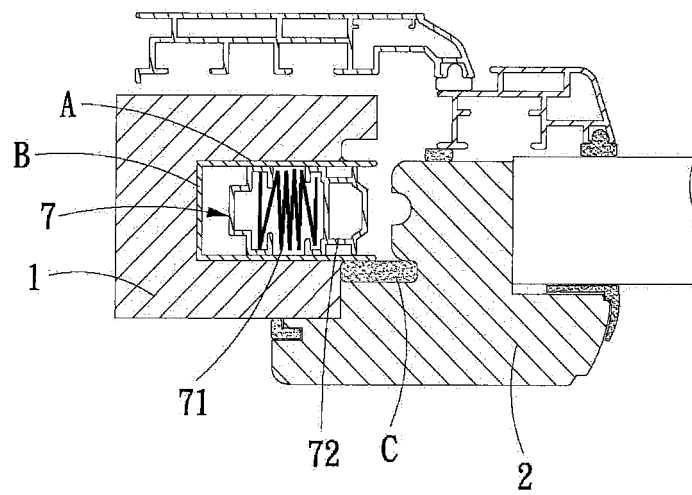


Fig. 6

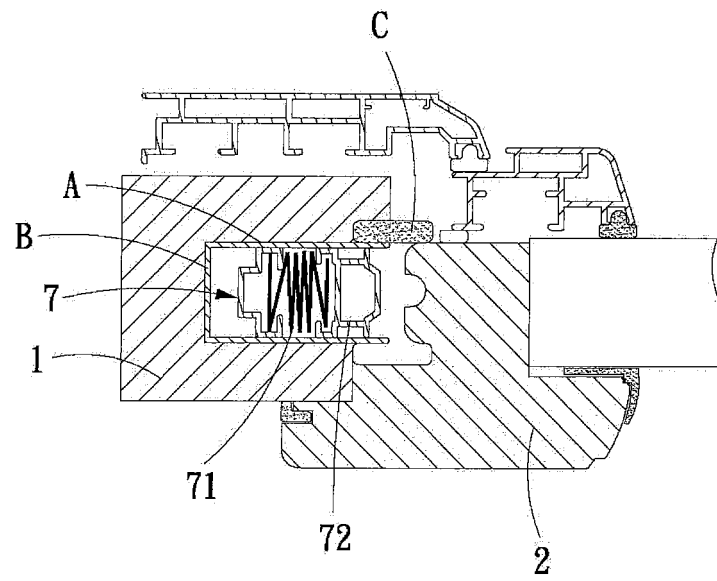


Fig. 7

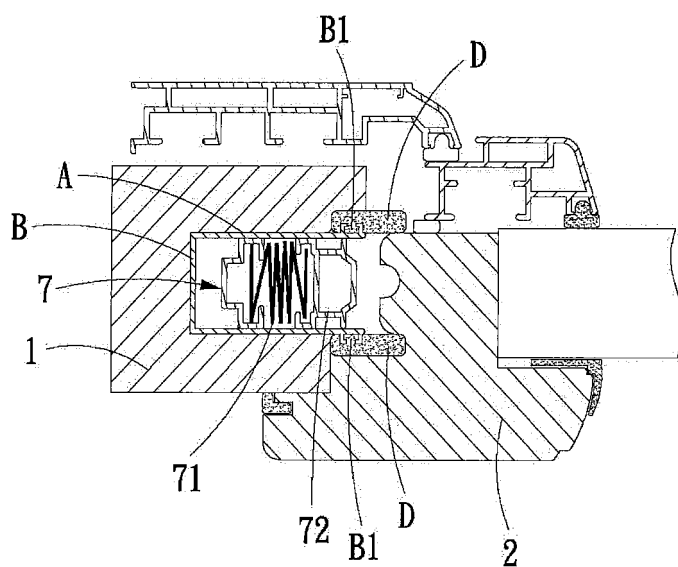


Fig. 8

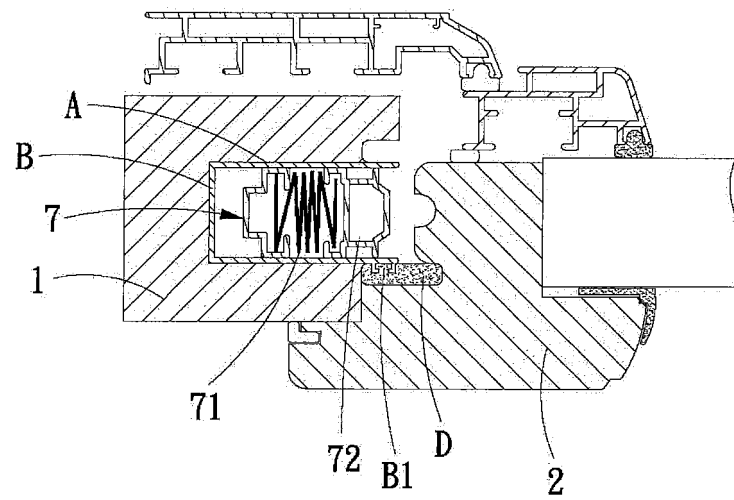


Fig. 9

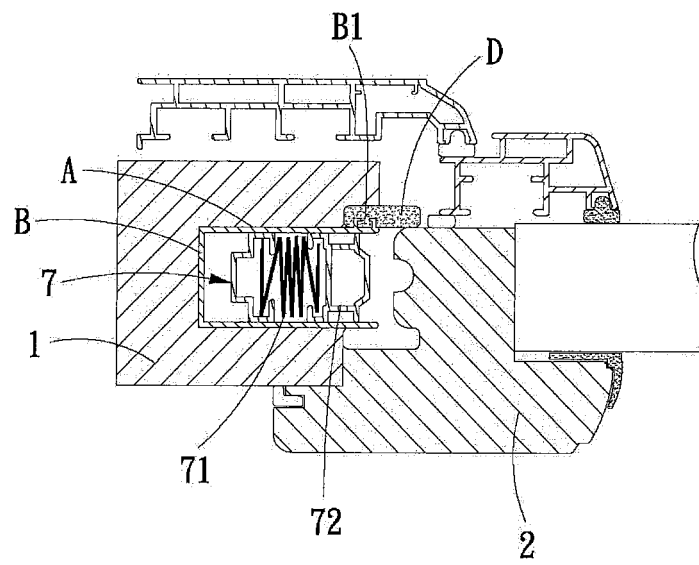


Fig. 10

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 102359327 [0002]
- WO 2008132530 A1 [0003]
- GB 2161201 A [0004]