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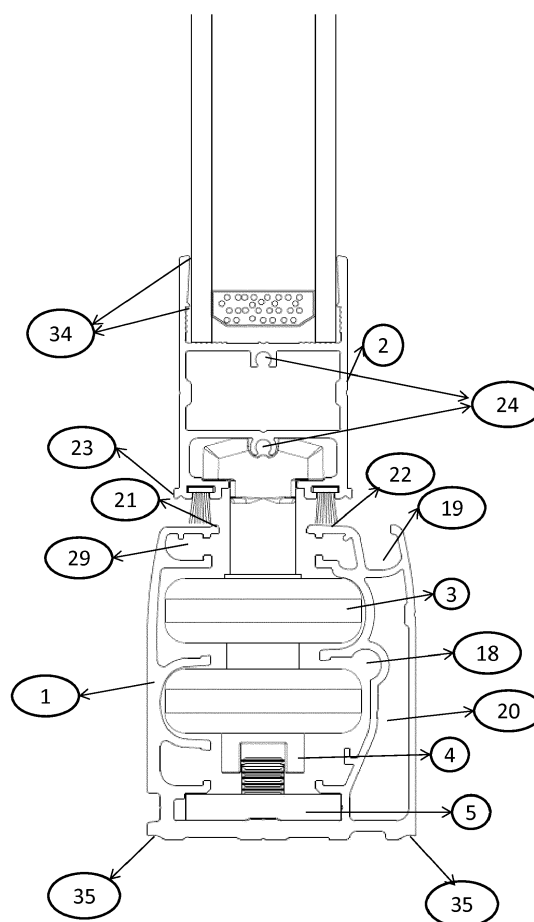
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(54) **KINETIC FACADE SYSTEM**

(57) The invention is related to a kinetic facade system which can be established with heat isolation and without heat isolation, suitable to be used indoors and outdoors, which can be opened or closed identically, tandem or completely when desired and which can be used in homes and industrial sites; characterized in that it comprises a carrier frame profile (1), a horizontal panel profile (2), a vertical panel profile (6), carrier wheel assemblies (3,28) vertical panel profile (7) having a latch key and a side sealing profile (25).

Figure 2



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Description

Technical Field of the Invention

[0001] The invention subject to the application is related to a kinetic facade system which can be carried out with heating isolation and without heating insulation, and is suitable for indoor and outdoor usage, in houses and industrial sites and can be opened or closed identically, tandem, completely when desired.

Known State of the Art (Prior Art)

[0002] In the known state of the art, kinetic panel systems generally are formed as non isolated systems and cannot be used during all four seasons where temperature differences between seasons are high.

[0003] As the isolation materials used in the connection geometry and connection of these profiles used in horizontal and vertical connections of systems formed with heat isolation are inadequate in terms of functionality. Thus sufficient isolation cannot be provided. On the other hand, plastic covers are used for the finishing of horizontal profiles and the connection of these covers and vertical profiles are not suitable for each other in terms of appearance.

[0004] The present heat insulation systems can be formed only linearly, and cannot be formed angularly; the panels in systems with 90° and 270° rotation do not only rotate and open from the corner and fixed box profiles are used in the vertical corner connections. Therefore when the system is opened, these profiles are observed at the centre of sites.

[0005] In the present systems, discharging of rain water is either provided with a profile or by means of a water channel that is integrated externally over the bottom profile. This situation is not suitable in terms of aesthetic display and cleanliness.

[0006] The panel guidance parts used in panel outlets in the unexamined patent numbered 2011/08928 of the known state of the art which belongs to the same applicant, can be seen on the side surfaces of the carrier frame profiles and they do not display an aesthetic image.

[0007] The invention subject to the application has been developed as a solution to problems which negatively effect the quality of kinetic panel systems mentioned above.

Aims in Developing the Invention

[0008] The following has been aimed in developing the kinetic facade system subject to the invention;

- Forming the kinetic panel systems with heat insulation and without heat insulation,
- Providing a kinetic facade system that is effected minimally from climate conditions,

- Joining horizontal and vertical panel profiles as a whole aesthetically and without milling and without any kind of plastic cover,

- Providing flexible isolation in panel joints by means of using magnets, brush ribs and seals.

- Providing a panel system which can be rotated without any problem from the angles and which is joined without using a fixed pole with maximum isolation at 90°, 270° and other different angles.

- Providing the water discharge of kinetic panel system with a more suitable concealed channel in terms of shipment, aesthetic appearance and function.

- Using an angular joint lamella produced monolithically and cost effectively no matter the angle of the carrier frame profiles,

- Using both a lever and latch locking system, having a child lock and which closes the outlet openings in hinge panels,

- Increasing water isolation in horizontal panel profiles by means of water discharge wings,

- Through the brake shoe attached to the brake shoe bearing which is located in the frame, higher and wider panels can be formed and opened or closed comfortably.

- Providing a kinetic facade system without an outlet opening by means of a developed kinetic pin system,

- Forming a system which can be carried from the top section when desired,

- Carrying out the mounting adjustment easily using a flat adjustment profile and tabbed adjustment profile when the system is formed such that it can be carried from the top section.

Brief Description of the Invention

[0009] The kinetic facade system developed according to the present invention basically comprises a frame profile, a horizontal wing profile, a vertical joint profile, a side sealing profile and a wheel assembly. The system is based on the principle that the wings can be gathered at the desired location when desired.

[0010] In the facade system subject to the invention, the locking of the panels during opening is carried out by means of park lamella with tabs at the base section which is the strongest section of the carrier frame profile. Higher and wider panels are obtained by means of the brake shoe within the system and thereby the comfortable and

safe opening of the panels are enabled during opening.

[0011] The hinged panel locking system of the system can be a lever latch locking system both having a child lock and which close the outlet openings. Therefore cost advantage is obtained.

[0012] By means of the developed vertical joint profiles, the system can be joined, opened and closed with maximum isolation in all kinds of angles.

[0013] The water is discharged at a maximum level in the kinetic facade system developed according to the present invention as the inner tabs of the end of the frame profile is inclined into the frame profile and as the external tabs are inclined outward. The water that might enter the system is discharged via the water discharge holes that have been opened through the concealed water discharge channel after said water is collected inside the water discharge channel. By this means maximum water isolation is guaranteed.

Definitions of the Figures Describing the Invention

[0014] The figures and the related descriptions in order to further explain the kinetic facade system developed according to the invention is as follows:

Figure 1- Frontal view of the kinetic facade system

Figure 2- View of the carrier frame-horizontal panel profile

Figure 3- View of the vertical panel joint

Figure 4- View of the Vertical panel-Latch Lock panel Joint

Figure 5- View of the Park carrier and flat carrier wheel assembly

Figure 6- View of the top outlet opening-lock integration

Figure 7- Bottom outlet opening- lock integration

Figure 8- View of the side sealing profile connection part

Figure 9- View of the 90 degree vertical panel profile

Figure 10- View of the Angular vertical panel profile

Figure 11- View of the kinetic pin system

Figure 12- View of the Panel guide parts

Figure 13- View of the Narrow horizontal panel profile

Figure 14- View of the system that can be carried from the top section - having a height adjustment

profile

Figure 15- View of the system that can be carried from the top section-having a tabbed adjustment profile

Figure 16- View of the nut bearing horizontal panel profile joint

10 The definition of the aspects and parts forming the invention

[0015] The aspects/parts/sections given in the attached figures in order to better explain the kinetic facade system developed according to the present invention have each been numbered and their references have been listed below

- 1- Carrier frame profile
- 2- Horizontal panel profile
- 3- Park carrier wheel assembly
- 4- Park carrier wheel part
- 5- Tabbed park lamella
- 6- Vertical panel profile
- 7- Latch lock vertical panel profile
- 8- Vertical panel brush bearing
- 9- Vertical panel magnet bearing
- 10- Vertical panel seal seat
- 11- Panel holder tab
- 12- Panel bearing
- 13- Top outlet opening
- 14- Panel outlet guide
- 15- Top lock
- 16- Child safety lock
- 17- Side sealing profile connection part
- 18- Brake shoe bearing
- 19- Water discharge channel
- 20- Concealed water discharge cell
- 21- Frame profile external tab
- 22- Frame profile internal tab
- 23- Horizontal panel profile wing
- 24- Horizontal panel profile screw channel
- 25- Side sealing profile
- 26- 90° Vertical panel profile
- 27- Angular vertical panel profile
- 28- Flat carrier wheel assembly
- 29- Angular connection pin housing
- 30- Kinetic pin system
- 31-Concealed panel guide part
- 32- Concealed panel guide counterpart
- 33- Narrow horizontal panel profile
- 34- Panel rest tab
- 35- Mounting isolation bearing
- 36- Vertical panel profile tab
- 37- Carrier bottom frame profile
- 38- Flat adjustment profile
- 39- Flat adjustment profile cover
- 40-Tab adjustment profile

- 41-Tab adjustment profile cover
- 42-Adjustment profile connection apparatus
- 43- Carrier bearing connection screw
- 44- Nut bearing horizontal panel profile

Detailed Description of the Invention

[0016] The kinetic facade system developed according to the invention basically comprises;

- A frame profile (1) which is inclined towards the inside of the internal tab (22) frame profile and out of the external tab (21) frame profile wherein the carrier wheel assemblies (3) coupled to the horizontal panel profile (2) move therein, wherein the tabbed park lamella (5) used in locking the panels are fixed to the base of the panels, comprising a brake shoe bearing (18) which enables to reliably lock the carrier wheels when the wheels arrive at the park space, a water discharge channel (19) which enables the collection of water, a concealed water discharge cell (20) used in discharging the water, an angular pin housing (29) used for properly joining the profile opening sections at the angular joints, and a frame profile (1) having a mounting isolation bearing (35) at the edges of the base.
- A horizontal panel profile wing (23) for providing the motion of the following the coupling of the carrier wheels, and for directing the water towards the panel bearing (12) onto which the panels have been mounted, a horizontal panel profile screw channel which enables to fix the vertical panel profile (24), horizontal panel profile (2) having panel support tabs (34) which enable the panels to be fitted into the profile without deviation of the axle of the panels,
- A vertical panel profile tab (36) which can be placed outside of the horizontal panel profile (2) used in the vertical joints of the panels, which can be broken off if necessary in order to enable a durable joining with the horizontal panel profile, and a vertical panel profile (6) comprising a panel bearing (12) onto which panels have been mounted, a vertical panel brush bearing (8), a vertical panel magnet bearing (9) and a vertical panel seal seat (10).
- Side sealing profile (25) which can tolerate up to 5° of wall defects and which provides isolation at the ends of the walls by being coupled to the frame profile (1), by means of the side sealing profile connection part (17),
- A latch lock vertical panel profile (7) having a panel bearing (12) into which panels are mounted, wherein the lever latch locking system can be mounted onto hinged panels,

- A park carrier wheel assembly (3) which comprises at least two carrier wheels that move inside the frame profile (1) by being attached to the horizontal panel profile (2) and a park carrier wheel part (4) which is inserted into the tabbed park lamella (5) located inside the frame and is rotated and locked,

- A flat carrier wheel assembly (28) having at least two carrier wheels which move inside the frame profile (1) by being coupled to the horizontal panel profile (2).

[0017] The kinetic facade system developed according to the invention moves inside the park carrier wheel assemblies (3) and the carrier frame profile (1) of the horizontal wheel assemblies (28) connected to the horizontal panel profile (2) and as a result the system is enabled to be opened and closed when desired.

[0018] The panels are locked and opened after the park carrier wheel part (4) coupled to the park carrier wheel assembly (3) on the horizontal panel profile (2) passes onto the tabbed park lamella (5) located on the carrier frame profile and is then rotated (Figure-2).

[0019] At this moment, the flat carrier wheel assembly (28) is mounted onto the top outlet opening (13) tabs through the carrier frame profile (1) and exits via the panel outlet guide (14) without any kind of tendency of falling. It is enabled for the panels to be comfortably and safely opened during the implementation of the high and wide panels and opening of said panels by means of the brake shoe in the system which is placed into the brake shoe bearing (18).

[0020] The panels within the kinetic facade system that have been developed according to the invention are placed and bonded into the panel bearing (12) and therefore is fixed into the horizontal panel profile (2) and vertical panel profile (6). The excess adhesive remains in the panel bearing. The vertical panel profile (6) is fixed to the horizontal panel profile (2) by means of a screw in order to enable system stability.

[0021] The water discharge structure and isolation in the system subject to the invention have been dealt with as a whole. The water droplets that flow over the panel by means of the horizontal panel profile wings (23) located on the horizontal panel profiles (2) are discharged before entering into the carrier frame profile (1). At the same time, isolation has been maximized by means of the inward inclined structure of the frame profile internal tab (22) and the external inclined external tab (21) of the frame profile. The water droplets that may enter the system are collected in the water discharge channel (19) located on the carrier frame profile. The water that is collected is discharged out from the opened water discharge holes and through the concealed water discharge cells (20).

[0022] The isolations at the vertical joints of the panels are provided by means of vertical panel profiles (6). The vertical panel profiles comprise a vertical panel brush

bearing (8), a vertical panel magnet bearing (9) and a vertical panel seal seat (10). One, two or all three of these three isolation aspects can be used according to the isolation level that is desired (Figure-3 ve Figure-4).

[0023] The kinetic facade system can be used in angular areas. For 90° and 270° angular applications, the 90° vertical panel profile (26) and the vertical panel profile (6) are joined and used (Figure 9).

[0024] In other angular joints, the angular vertical panel profile (27) is used for establishing joints. The whole area can be opened without using a profile that is fixed in all kinds of angles (Figure 10).

[0025] A combination of a top lock (15) which both closes the outlet openings and which is integrated with a child safety lock and a child safety lock (16) is used as a lock in the hinged panels of the present system. When a more reliable locking structure is desired, a lever latch lock can be applied to the system by using a latch lock vertical panel profile (7) (Figure-6 and Figure-7).

[0026] In the kinetic facade system developed according to the invention, the side sealing profiles (25), is coupled to the side sealing profile connection part (17) and the carrier frame profile (1) without any kind of milling procedure (Figure-8).

[0027] The panels in the kinetic facade system developed according to the invention, can be taken out without the requirement of an outlet opening from the carrier frame profile (1) by using a kinetic pin system (30) (Figure-11).

[0028] The panels can be locked without the requirement for a panel outlet guide (14) as the concealed panel guide parts (31) adapted to the water discharge channel (19) located on the carrier frame profile (1) can move out by leaning onto the corresponding concealed panel guide parts (32) (Figure-12).

[0029] According to the system subject to the invention, the appearance of horizontal panels are reduced by using narrow horizontal panel profiles (33) when desired (Figure-13).

[0030] The kinetic facade system developed according to the invention can also be established as a system that can be carried from the top section by means of the improved carrier bottom frame profile (37). The carrier frame profile (1) is mounted onto the flat adjustment profile (38) and following this the flat adjustment profile cover (39) is closed and is fixed to the profile (Figure-14).

[0031] A profile with tab adjustment (40) can be used for having higher adjustment tolerances in the case of a system that can be carried from the top section. In this case the vertical adjustment can be carried out by vertical adjustment connection apparatus. ((Figure-15).

[0032] The carrier bearings which provide the motion of the panels in the kinetic facade system that has been developed according to the invention are fixed to the developed nut bearing horizontal panel profile (44) via a carrier bearing connection screw (43) (Figure-16).

[0033] It is possible to develop several other applications of the kinetic facade system subject to the invention

within the scope of this basic concept; therefore the invention cannot be limited with the examples mentioned above and the invention is as defined in the claims.

Claims

1. A new generation kinetic panel system which is based on gathering the panels in any place desired and closing the panels when desired, **characterized by;**

- A frame profile (1) which is inclined towards the inside of the internal tab (22) frame profile and out of the external tab (21) frame profile wherein the carrier wheel assemblies (3) joined to the horizontal panel profile (2) move therein, wherein the tabbed park lamella (5) used in locking the panels are fixed to the base of the panels, comprising a brake shoe bearing (18) which enables to reliably lock the carrier wheels when the wheels arrive at the park space, a water channel (19) which enables the collection of water, a concealed water discharge cell (20) used in discharging the water, an angular pin housing (29) used for properly joining the profile opening sections at the angular joints, and a frame profile (1) having a mounting isolation bearing (35) at the edges of the base,
- A horizontal panel profile wing (23) for providing the motion of the following the coupling of the carrier wheels, and for directing the water towards the panel bearing (12) onto which the panels have been mounted, a horizontal panel profile screw channel which enables to fix the vertical panel profile (24), horizontal panel profile (2) having panel support tabs (34) which enable the panels to be fitted into the profile without deviation of the axle of the panels,
- A vertical panel profile tab (36) which can be placed outside of the horizontal panel profile (2) used in the vertical joints of the panels, which can be broken off if necessary in order to enable a durable joining with the horizontal panel profile, and a vertical panel profile (6) comprising a panel bearing (12) onto which panels have been mounted, a vertical panel brush bearing (8), a vertical panel magnet bearing (9) and a vertical panel seal seat (10).
- Side sealing profile (25) which can tolerate up to 5° of wall defects and which provides isolation at the ends of the walls by being joined to the frame profile, by means of the side sealing profile connection part (17),
- A latch lock vertical panel profile (7) having a panel bearing (12) into which panels are mounted, wherein the lever latch locking system can be mounted onto hinged panels,

- A park carrier wheel assembly (3) which comprises at least two carrier wheels that move inside the frame profile (1) by being attached to the horizontal panel profile (2) and a park carrier wheel part (4) which is inserted into the tabbed park lamella (5) located inside the frame and is rotated and locked, 5
 - A flat carrier wheel assembly (28) having at least two carrier wheels which move inside the frame profile (1) by being coupled to the horizontal panel profile (2). 10
2. A kinetic facade system according to claim 1, **characterized in that**, it comprises a side sealing profile connection part (17) which couples the frame profile (1) to the side sealing profile (25) without any additional procedure. 15
 3. A kinetic facade system according to claim 1 or 2, **characterized in that** it comprises a 90° vertical panel profile (26) which provides high levels of joint isolation by being used together with the vertical panel profile at 90° and 270° angles. 20
 4. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises an angular vertical panel profile (27) which provides high levels of joint isolation, used in angles besides 90° and 270°. 25
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 5. A kinetic facade system according to any of the preceding claims, **characterized in that** said system comprises a top lock (15) used in hinged panels, which closes the top outlet opening (13) and at the same time closes the panel outlet guide, and provides locking. 35
 6. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises a child safety lock (16) having a child safety structure thereon, used in hinged panels, which enables to lock the panels to the carrier frame profile (1) 40
 7. A kinetic facade system according to any of the preceding claims, **characterized in that**, it comprises a kinetic pin system (30) which enables to pull out the panels from the carrier frame profiles (1) without the requirement for an outlet opening. 45
 8. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises a concealed panel guide part (31) and a corresponding concealed panel guide counterpart (32) which enable the panels to be opened without the requirement for a panel outlet guide by adapting the carrier frame profile to the water discharge channel (9) located thereon. 50
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 9. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises narrow horizontal panel profiles (33) which minimize the appearance of horizontal panels.
 10. A kinetic facade system according to any of the preceding claims, **characterized in that** in the case that said system can be carried from the top section, the carrier bottom frame profile comprises a flat adjustment profile (38) and a flat adjustment profile cover (39) in order to perform perpendicular adjustment to the carrier bottom frame profile.
 11. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises an adjustment profile connection apparatus (42) with higher adjustment tolerance, which allows perpendicular adjustment to the tab adjustment profile cover (41) and the tab adjustment profile (40), in the case that said system can be carried from the top section.
 12. A kinetic facade system according to any of the preceding claims, **characterized in that** it comprises a carrier bearing connection screw (43) and a nut bearing horizontal panel profile (44) in order to establish a cost effective system.

Figure 1

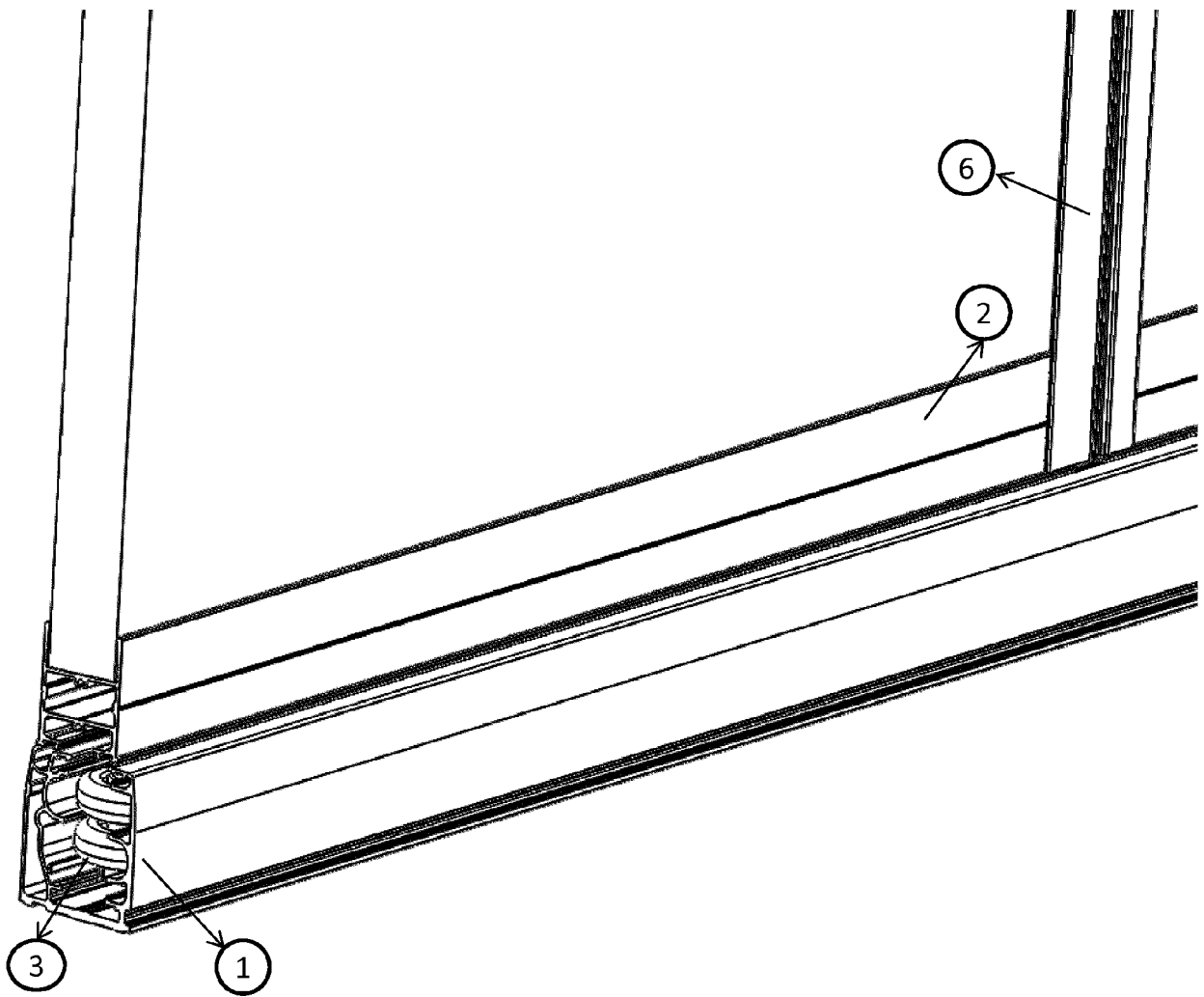


Figure 2

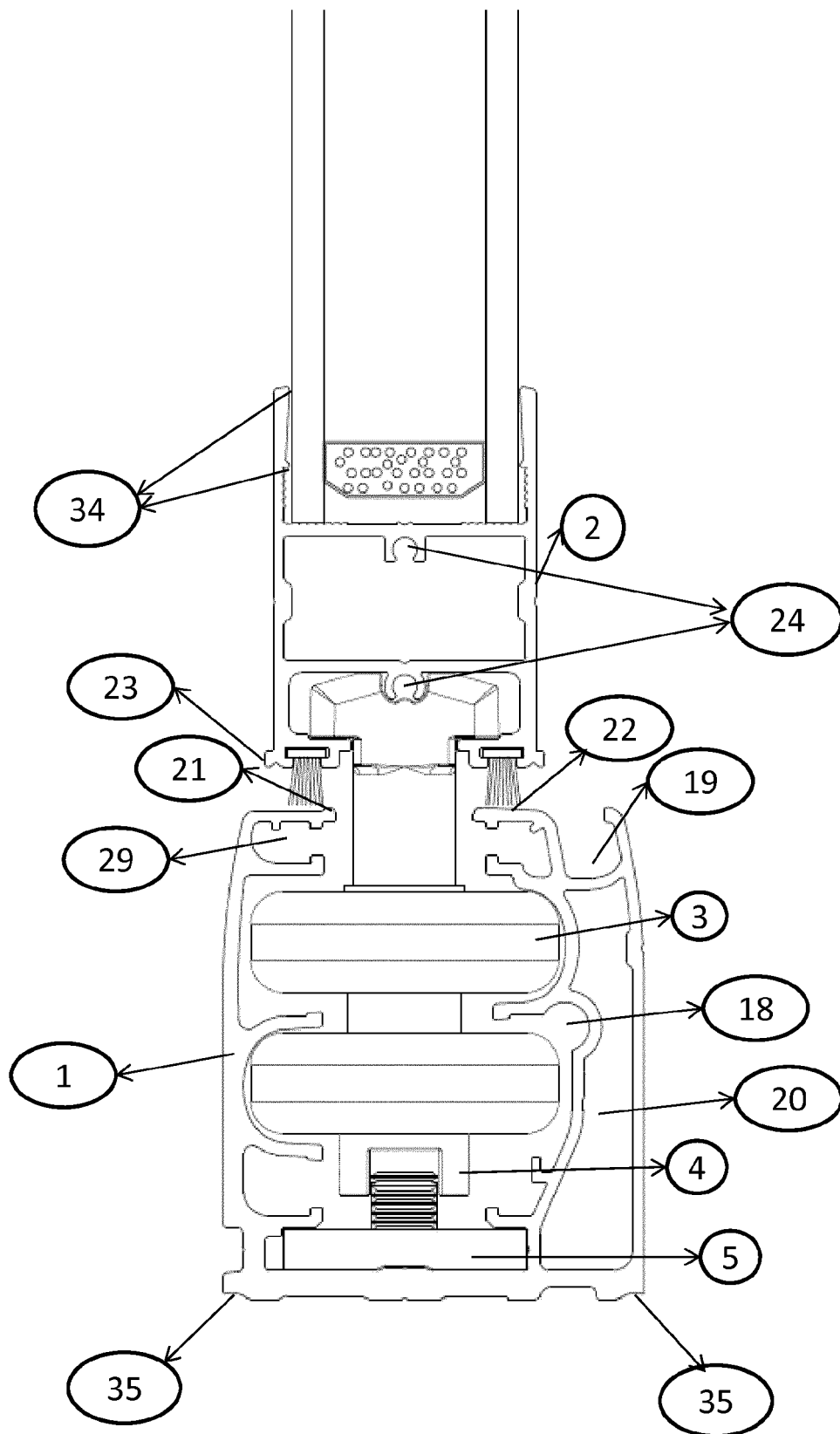


Figure 3

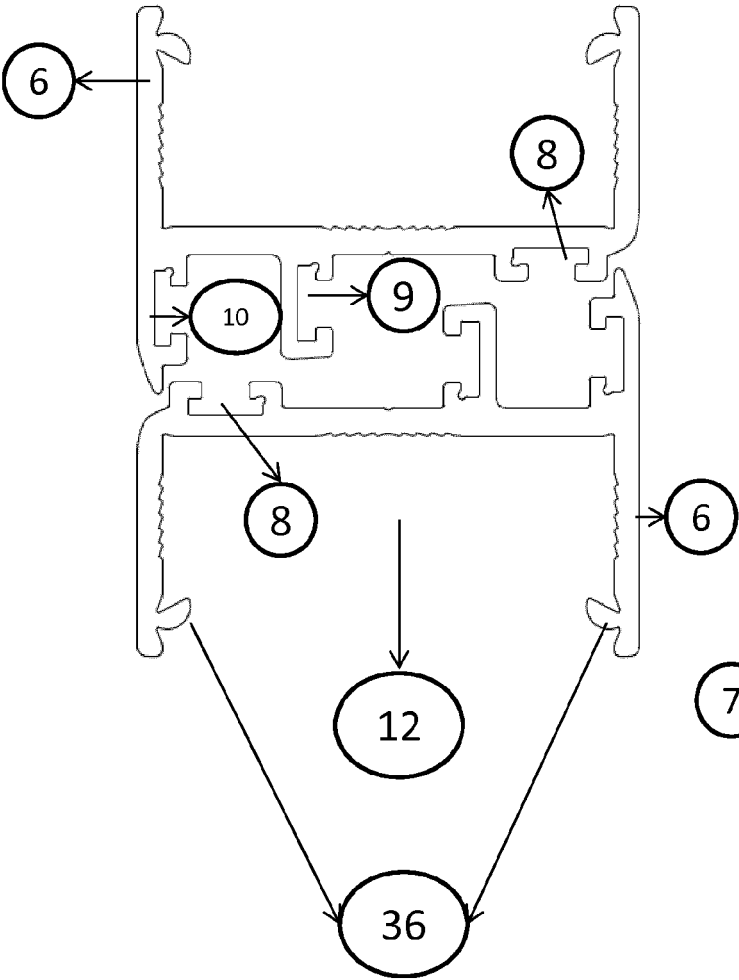


Figure 4

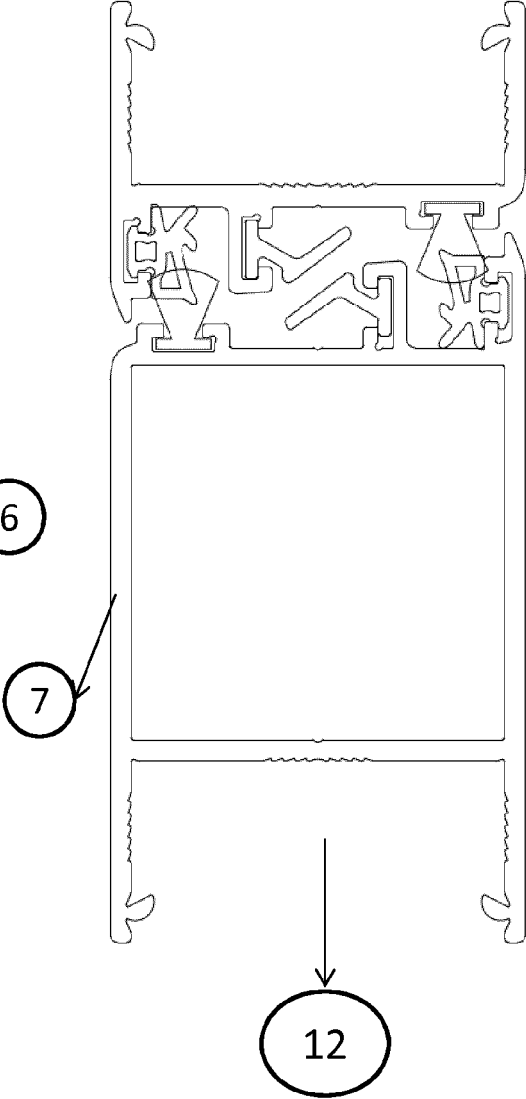


Figure 5

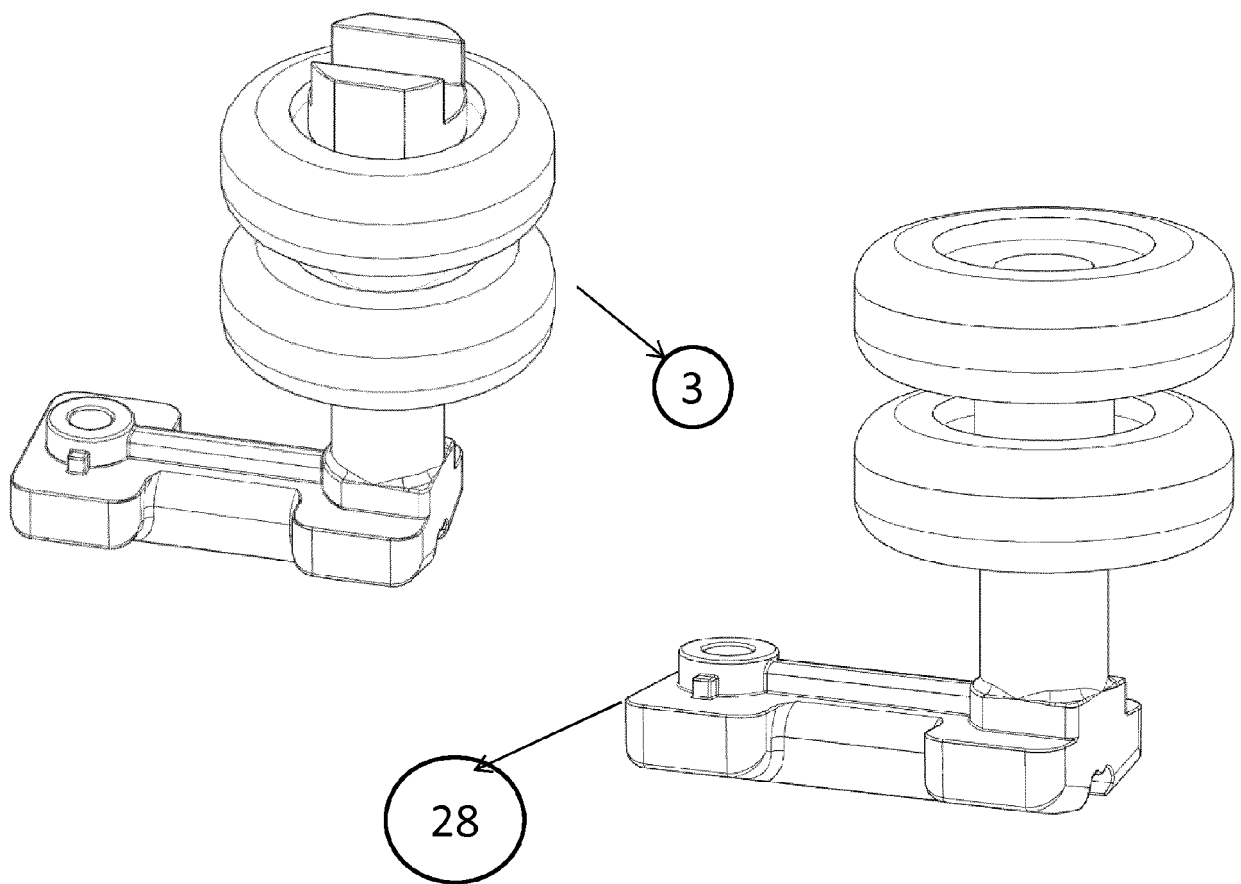


Figure 6

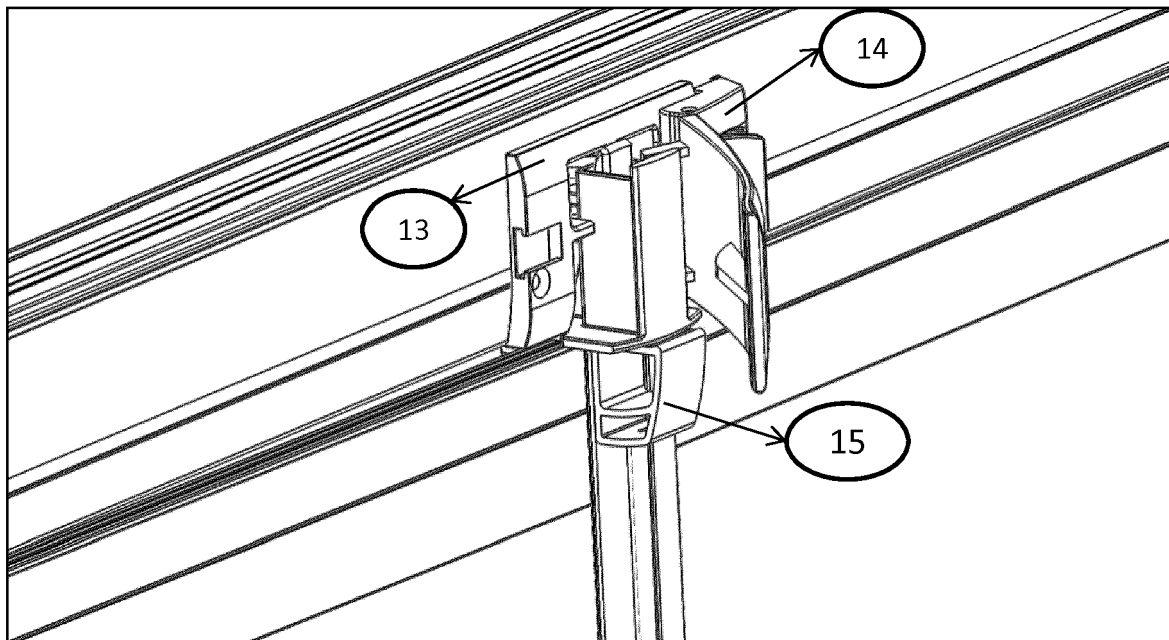


Figure 7

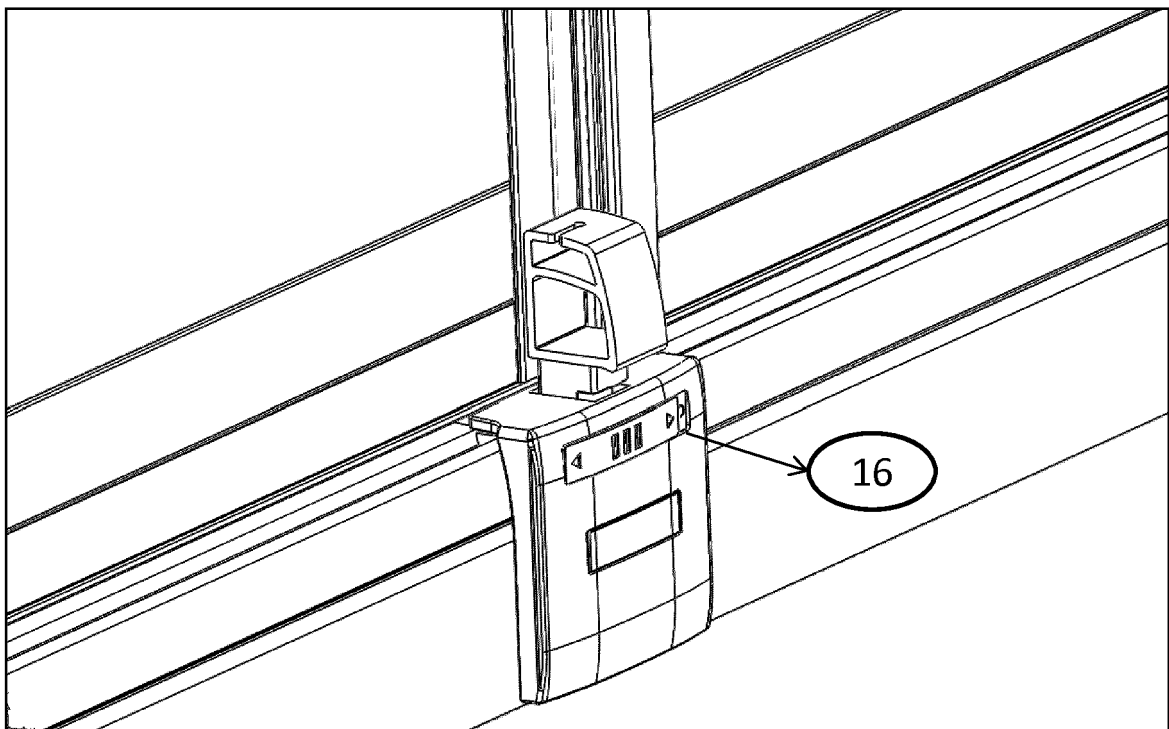


Figure 8

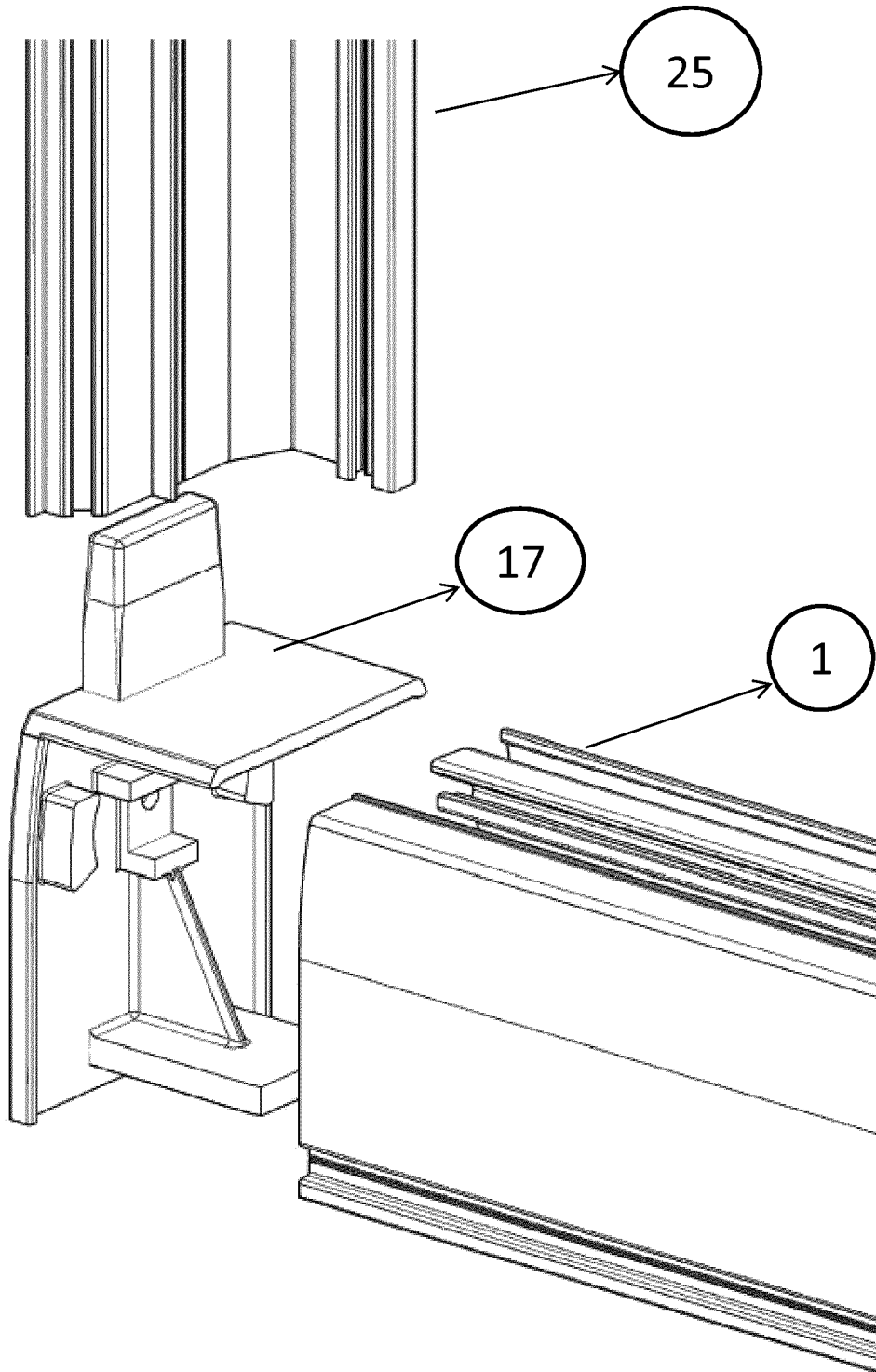


Figure-9

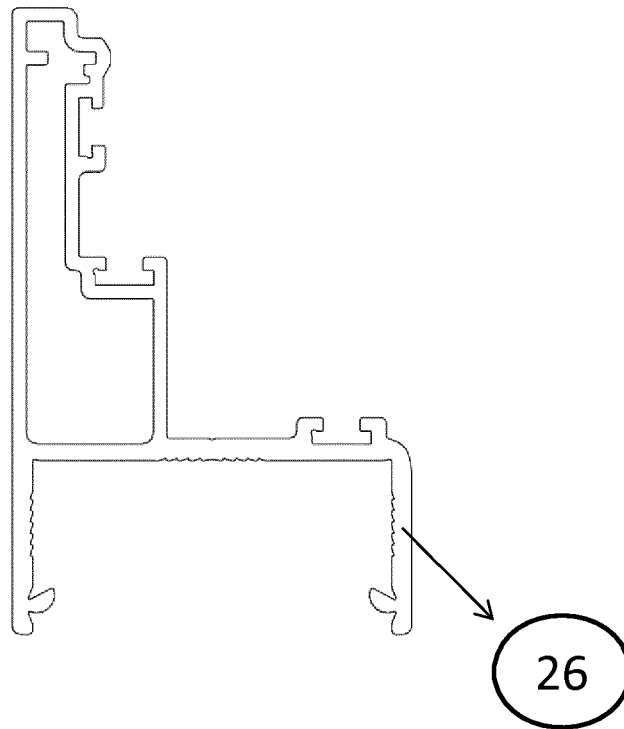


Figure -10

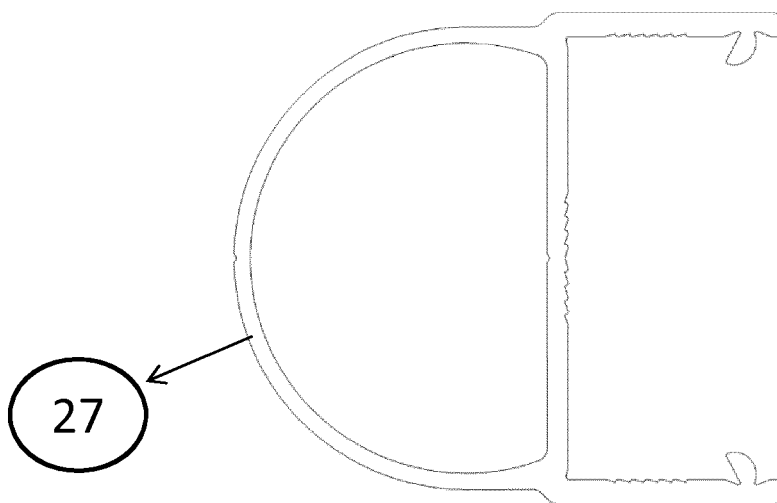


Figure 11

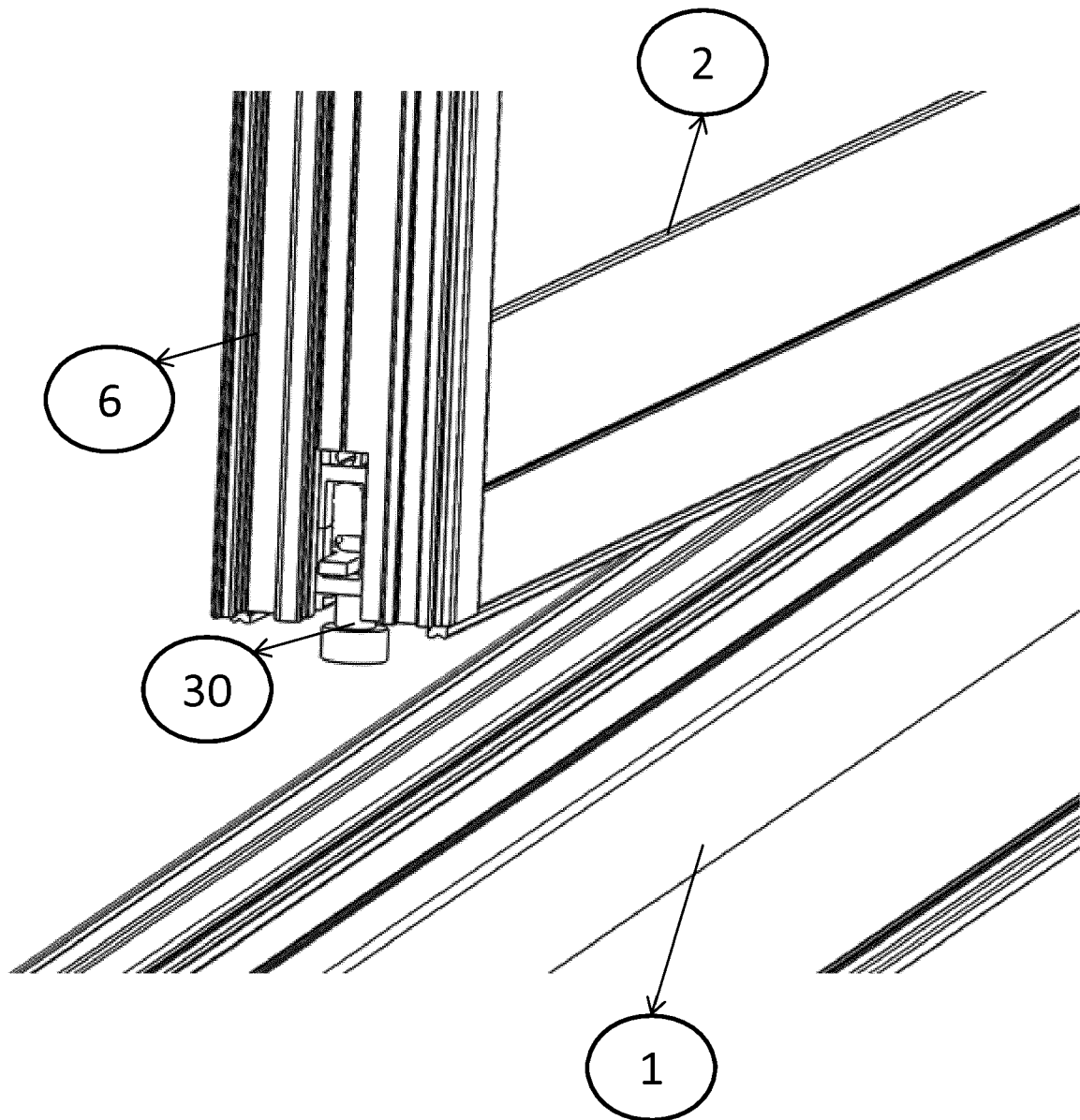


Figure 12

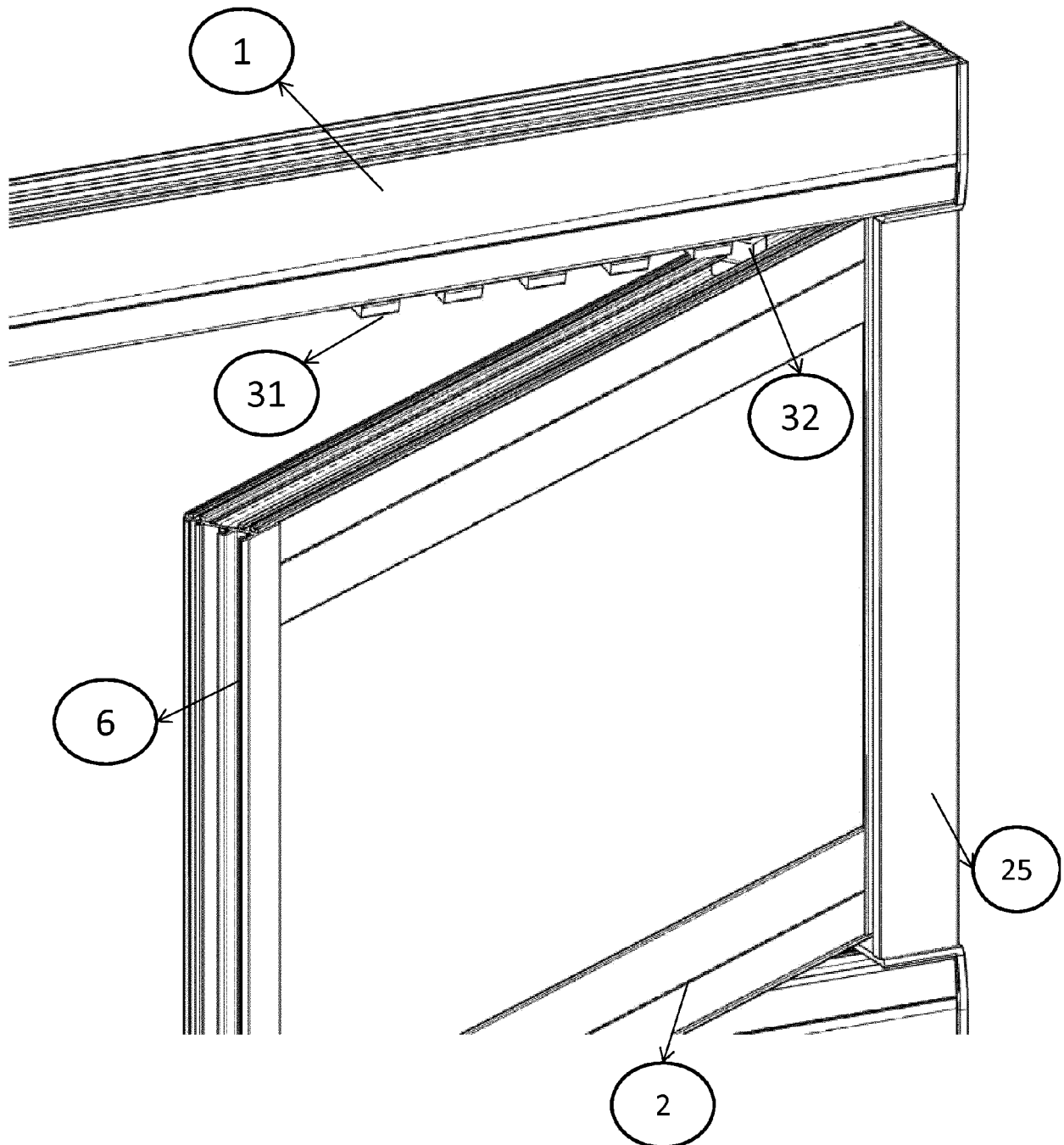


Figure 13

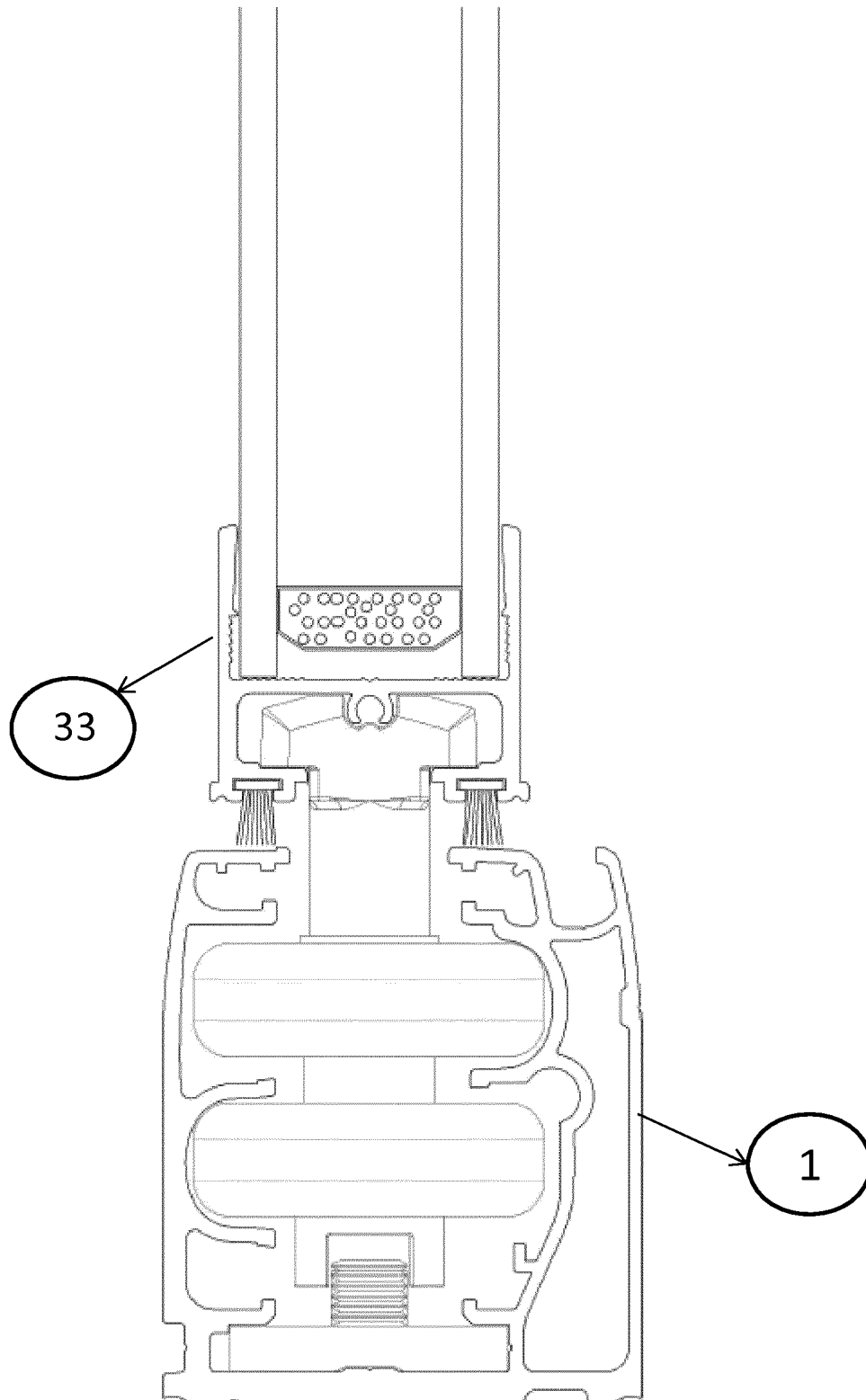


Figure 14

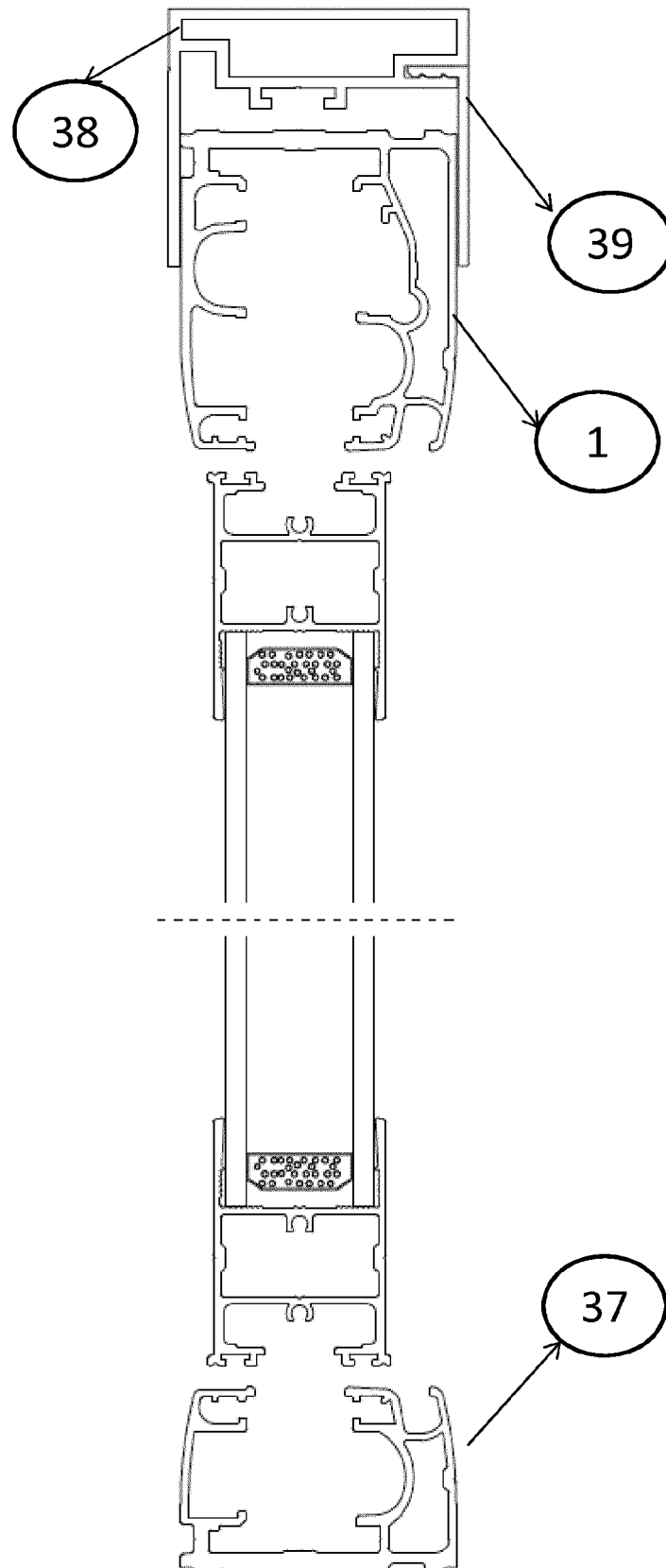


Figure 15

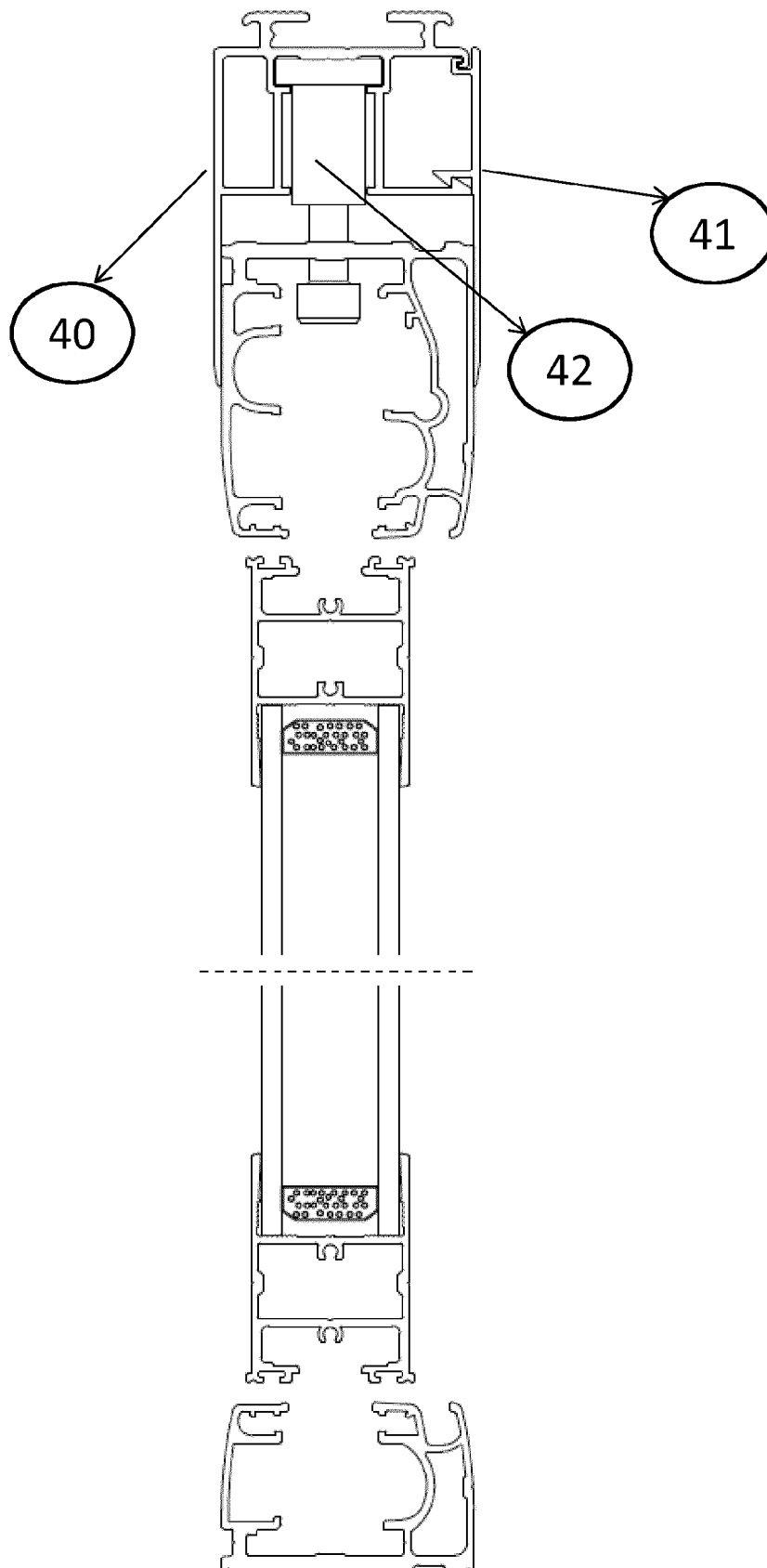
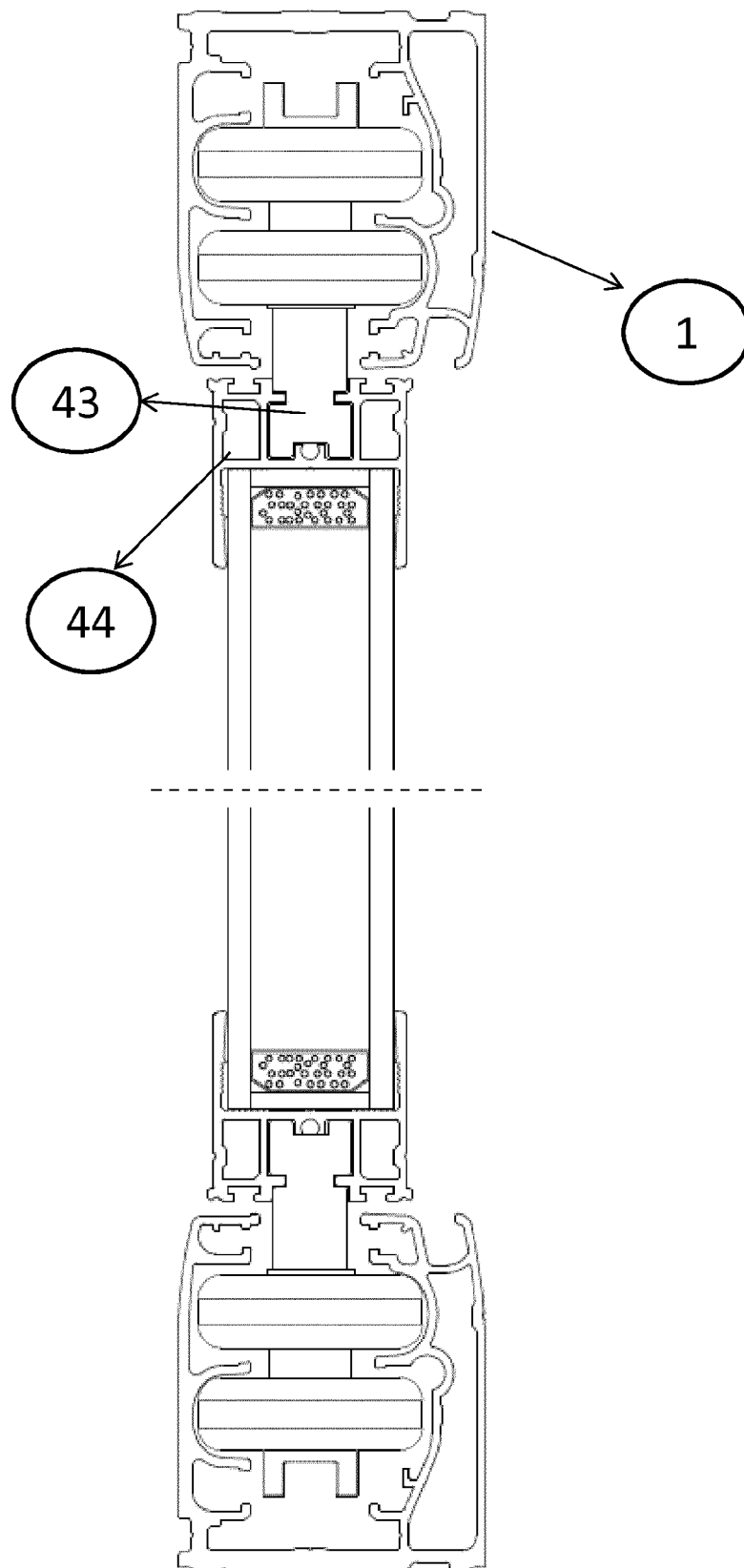


Figure 16





EUROPEAN SEARCH REPORT

Application Number
EP 16 15 9287

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 23 August 2016	Examiner Crespo Vallejo, D
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 16 15 9287

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