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(54) SASH WITH COMPOSITE STILES

(57) A composite stile (10) for a sash for windows, doors or other separator has a first longitudinal profile (11) with a side shell and a second longitudinal profile (16), which are disposed along a longitudinal direction and connected through an insulation profile (13). Each one of the two longitudinal profiles (11, 16) is connected with the insulation profile (13) and their connections are configured, so that the resistance to the relative linear motion of the first longitudinal profile (11) and the insulation profile (13) differs from the resistance to the relative linear motion of the second longitudinal profile (16) and the insulation profile (13) and so that the first longitudinal profile (11) may exhibit a linear movement in the longitudinal direction with respect to the insulation profile (13). The insulation profile (13) has a first face, which is opposite to the first longitudinal profile (11) with two inserts (32, 33) disposed along the longitudinal direction. Each insert (32, 33) is received within a respective channel of the first longitudinal profile (11) defined by a web (21, 24) and an outgrowth (22, 23) and the first face of the insulation profile (13) is nearer to the side shell of the first longitudinal profile (11) than the free end of the web (21, 24).

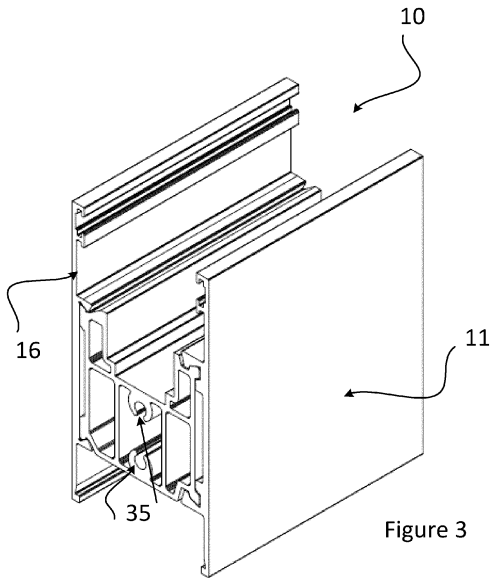

Figure 3

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Description

[0001] The invention refers to profiles for composite stiles for sashes that are used to account for deformations from temperature variations. The invention further refers to a method of production of the composite stiles and sashes comprising composite stiles.

[0002] A sash that addresses the issue of temperature difference between the inner space of a building and the external outer space is described in EP3246505**.** The document shows a composite stile with an insulation profile an inner profile and an outer profile. The insulation profile has four inserts, with each insert being received in a distinct channel arranged either on the side shell of the inner profile or the outer shell of the outer profile. The insulation profile is locked in the inner profile and the outer profile by snap-action.

[0003] EP 2330272 discloses a composite profile with an insulation profile connected by snap connection with two side profiles. The insulation profile has four inserts, with each insert being received within a discrete channel. Each channel is arranged on an elastic member, with two elastic members provided on each side profile.

[0004] The object of the invention is a stile for a sash that is not deformed when the two sides of the sash experience different temperatures. A further object of the invention is a stile that is not restricted to movements as a result of temperature variations. A further object of the invention is a sash that addresses the issue of thermal deformations and allows flexibility in its method of production. A further object of the invention is a stile that is not deformed on one hand and is a stable structure on the other. A further object of the invention is a method of production of such a stile. A further object of the invention is a connector that facilitates the connection of the various elements of a sash and does not cause deformation to the elements that have a negative impact in their functionality. A further object of the invention is a sash for doors, windows or other separators that is not deformed when there is a temperature gradient across it.

[0005] The invention is defined in the independent claims.

[0006] Dependent claims define features that offer further advantages to the invention.

[0007] A composite stile for a sash for windows, doors or other separators according to the invention includes two longitudinal profiles, i.e. a first longitudinal profile with a side shell and a second longitudinal profile. The longitudinal profiles are disposed along a longitudinal direction and connected through an insulation profile, whereby each one of the two longitudinal profiles is connected with the insulation profile, the connection of the first longitudinal profile and the insulation profile and the connection of the second longitudinal profile and the insulation profile are configured, so that the resistance to the relative linear motion of the first longitudinal profile and the insulation profile differs from the resistance to the relative linear motion of the second longitudinal profile and the insulation profile and so that the first longitudinal profile may exhibit a linear movement in the longitudinal direction with respect to the insulation profile. Each one of the two inserts is received within a respective channel of the first longitudinal profile. Each channel is defined by a web with an end on the side shell and a free end, and an outgrowth with an end on the side shell and a free end. The first face of the insulation profile is nearer to the first longitudinal profile than the free end of the webs of the first longitudinal profile.

[0008] The free end of the outgrowth may be nearer to the first longitudinal profile than the free end of the web.

[0009] Optionally, the free end of at least one, preferably both, webs of the first profile has a blunt edge that is received within a respective channel that is provided in the insulation profile. This configuration facilitates alignment and movement of the first profile and the insulation profile.

[0010] In some embodiments the insulation profile has a second face, which is opposite to the second longitudinal profile, with two ridges disposed in the longitudinal direction. Both ridges are fixed in one single channel provided on the second longitudinal profile, which is defined by two webs provided on the second longitudinal profile.

[0011] The channel provided on the second longitudinal profile may have a trapezoidal cross-section with a mouth and a base that is wider than the mouth.

[0012] In some examples of the invention one or both two webs of the second longitudinal profile have an edge inserted in a groove of the insulation profile and fixed therein. The edge may deform the material of the insulation profile.

[0013] In some examples of the invention one of the two webs of the second longitudinal profile has a face that abuts a ridge whereby the face is machined to increase the friction co-efficient between the second longitudinal profile and the insulation profile.

[0014] The width of the ridges may be larger than the width of the inserts. The width of the ridges and the width of the inserts is measured along the longitudinal direction.

[0015] Each insert has an outer face and an inner face. The inner faces of the inserts face each other and diverge from the insulation profile towards the outer profile and the outer faces of the inserts also diverge from the insulation profile towards the outer profile. In this alternative configuration of the invention the inserts diverge from the insulation profile towards the first longitudinal profile.

[0016] The first longitudinal profile and a second longitudinal profile are made of aluminum. The insulation profile is made from a thermal insulating material, such as pa, pvc, abs.

[0017] A sash has a stile and a rail connected with a connector at a corner of the sash. The connector is firmly attached to the second profile and/or the insulation profile and the first profile and the connector are linked, so as to allow a relative movement therebetween. The rail may be connected to either end of the stile, i.e. in use it may be towards the floor or the ceiling.

[0018] Optionally, the connector has a flexible seat that contacts a transverse surface of the first profile. The surface is transversely disposed with respect to the longitudinal direction within the stile.

[0019] The connector may have a guide that extends within a channel of the first profile and extends along the first profile.

[0020] In use a sash with a composite stile may be fitted on a wall of a building, which has a closed space on one side. The stile is a composite stile with a first profile and a second profile, which are connected with an insulation profile. The second profile of the stile is positioned towards the closed space, whereas the first profile towards the outer space, where the temperature variations are more pronounced. Thus, the first profile may be designated as outer profile and the second profile as inner profile.

[0021] The invention further suggests a method of production of a composite profile, such as a stile, for a sash for windows, doors or other separator, including two longitudinal profiles disposed along a longitudinal direction and connected through an insulation profile. The method includes applying pressure on two webs provided on the one longitudinal profile so as to capture each one of two inserts provided on the insulating profile in a distinct channel provided in the one longitudinal profile, so that the one longitudinal profile and the insulation profile may exhibit a relative linear motion, and applying a pressure on two webs provided on the other longitudinal profile so as to fix a side wall of the insulating profile in a channel that is formed in the other longitudinal profile, so as to establish a friction connection between the other longitudinal profile and the insulation profile.

[0022] The pressure may be applied by rollers of an assembly machine.

[0023] Optionally, the method includes the machining of a face of at least one of the two webs provided on the other longitudinal profile, so as to increase the friction co-efficient between the face and the insulation profile, and consequently their attachment.

[0024] According to the invention the connection of a top rail or bottom rail with a stile of a sash may be effected by a connector, having two faces at an angle, preferably at a right angle, relative to each other, whereby one face is equipped with first connecting means to connect the connector with the top or bottom rail, and the other face is equipped with second connecting means to connect the connector with the stile and a flexible seat. Such a connector is used in combination with a stile produced with the above mentioned method.

[0025] The connector may have a Γ-shaped body with two legs. One leg has the first connecting means. The other leg has the second connecting means and the flexible seat is provided along an edge of the other leg.

[0026] In some examples the connector has a guide that projects transversely from the other face a greater distance that the flexible seat.

[0027] The flexible seat may include a rigid member and a spring acting between the rigid member and the other face. In some alternative embodiments the flexible seat includes a flexible solid.

[0028] A sash that is fitted on a wall of a building, with the first longitudinal profile that exhibits a movement with respect to the insulation profile towards the outer space, therefore designated as "the outer profile", and the second longitudinal profile that has a fixed connection with the insulation profile towards the inside of the building, therefore designated an "the inner profile".

[0029] With a stile according to the invention the outer profile is free to exhibit thermal axial deformation without bending on one hand and securing a stable structure of the composite stile on the other. A stile according to the invention does not cause any jamming to the lock that is housed within the stile.

[0030] With a stile according to the invention the assembly is simplified and the thermal expansion of the profile that faces the ambient temperature is facilitated.

[0031] The invention further suggests a connector to join a stile with a bottom and/or top rail of a sash. The use of such a connector to at one or more corners of a sash, the stiles remain straight without causing any jamming at the locks.

[0032] Embodiments of the invention will be described below with the reference to the following Figures:

Figure 1 shows a cross-section of a composite stile before assembly
Figure 2 shows a cross-section of a composite stile after assembly
Figure 3 shows a 3D view of a composite stile
Figure 4 shows a connector used to connect a stile with a horizontal, i.e. top or bottom, rail
Figure 5 shows a connector with a stile and a bottom rail
Figure 6 shows a connector with a stile
Figure 7 shows a connector within a stile
Figure 8 shows a connector with a stile and a top rail
Figure 9 shows a further example of a composite stile

[0033] **Figures 1 to 3** show a composite stile **(10)** of a sash of a sliding door. The stile **(10)** includes two aluminum profiles, i.e. an aluminum inner profile **(16)** and an aluminum outer profile **(11)**, and an insulation profile **(13)** that is arranged between the inner profile **(16)** and the outer profile **(11).** All three profiles, i.e. the two aluminum profiles **(11**, **16)** and the insulation profile **(13)**, are arranged along a longitudinal direction. **Figures 1 and 2** show a cross section of the composite stile **(10)** normal to the longitudinal direction. The insulation profile **(13)** is received within one channel of the aluminum inner profile **(16)** and two channels of the aluminum outer profile **(11).** The two aluminum profiles, i.e. an aluminum inner profile **(16)** and an aluminum outer profile **(11)**, and an insulation profile **(13)** form a space **(98)** with a Π-shaped or U-shaped cross -section, where the edge of the glazing, for

example single glazing, double glazing or other type of glazing, is inserted and secured. Alternatively the outer profile **(16)** and the insulation profile **(13)** may form a space with an angle-shaped cross section, where the grazing is retained by a holding member. Such a space is shown in **Figure 9**, where the holding member and the glazing are not shown.

[0034] Each one of the outer profile **(11)** and the inner profile **(16)** are extruded and has a side shell with webs extending transversely at an angle therefrom. The inner profile **(16)** has two consecutive webs **(27, 28)** that define a channel for the insulation profile **(13).** The outer profile **(11)** also has two consecutive webs **(21, 24).** Between the webs **(21, 24)** of the outer profile **(11)** there are two outgrowths **(22, 23)**, which outgrow from the side shell of the outer profile **(11).** Each one of the webs **(21, 24)** of the outer profile **(11)** with its adjacent outgrowth **(22, 23)** form a channel for the insulation profile **(13).** The height of each web **(21, 24)** of the outer profile **(11)** is larger than the height of its adjacent outgrowth **(22, 23)**, so that the distance of the free ends of these webs **(21, 24)** from the side shell of the outer profile **(11)** is larger than the corresponding distance of the free ends of the outgrowths **(22, 23).** The height of the webs **(21, 24, 27, 28)** and the outgrowths **(22, 23)** is the distance of the free end of the web **(21, 24, 27, 28)** or outgrowth **(22, 23)** from the side shell of the profile, from which the web **(21, 24, 27, 28)** or outgrowth **(22, 23)** projects. In one example not shown in the Figures, an outgrowth may exist between the two consecutive webs **(27, 28)** of the inner profile **(16).**

[0035] The insulation profile **(13)** has two opposite faces that are parallel to the inner profile **(16)** and the outer profile **(11).** The faces lie on a plane that is parallel to the longitudinal direction. One of the faces of the insulation profile **(13)** faces the inner profile **(16)** and the other face of the insulation profile **(13)** faces the outer profile **(11).** The face **(36)** of the insulation profile **(13)** that faces, i.e. is opposite, the inner profile **(16)** has two ridges **(37, 38)** along its edges. The face of the insulation profile **(13)** that faces, i.e. is opposite, the outer profile **(11)** has two inserts **(32, 33)** along its edges. In some examples the width of the ridges **(37, 38)** is larger than the width of the inserts **(32, 33)**, the width of the ridges **(37, 38)** and the inserts **(32, 33)** being measured along the longitudinal direction. In the example shown in **Figures 1 to 3**, the insulation profile **(13)** has five hollow rooms extending along the longitudinal direction and between its two opposite faces.

[0036] Each one of the inserts **(32, 33)** of the insulation profile **(13)** has an outer face and an inner face. The inner faces of the inserts **(32, 33)** are facing each other and their distance along a line crossing all four faces is smaller than the distance of the outer faces along the same line. The inner faces diverge from the insulation profile **(13)** towards the outer profile **(11).** Similarly the outer faces diverge from the insulation profile towards the outer profile **(11).** The divergence of the inner faces and the divergence of the outer faces is shown in **Figure 2** with dot dashed lines

[0037] For the connection of the insulation profile **(13)** with the aluminum outer profile **(11)** and the aluminum inner profile **(16),** the insulation profile **(13)** is received by the aluminum outer profile **(11)** and the aluminum inner profile **(16).** The connection is achieved throughout the height or almost throughout the height of the insulation profile **(13)**, the height of the insulation profile **(13)** being normal to the longitudinal direction and parallel to the side shell of the inner profile **(16)** and the side shell of the outer profile **(11).**

[0038] For the connection of the insulation profile **(13)** with the aluminum inner profile **(16)** the ridges **(37, 38)** on the face **(36)** of the insulation element **(13)** are received within the channel provided on the side shell of the inner profile **(16)**, between the webs **(27, 28)**, with each web **(27, 28)** applying a pressure on a corresponding ridge **(37, 38).** With this connection the inner profile **(16)** and the insulation profile **(13)** restricts the movement along the longitudinal direction relative to the each other.

[0039] For the connection of the insulation profile **(13)** with the aluminum outer profile **(11)** each one of the two inserts **(32, 33)** is received within a discrete channel provided on the side shell of the outer profile **(11).** Each one of the two channels is defined by one web **(21, 24)** and its adjacent outgrowth **(22, 23).** Each one of the inserts **(32, 33)** is fitted within the respective channel with tolerances, so that the insulating element **(13)** and the outer profile **(11)** may exhibit a linear motion relative to each other along the longitudinal direction. As illustrated in **Figure 2**, when the stile **(10)** is assembled, the face of the insulation profile **(13)** that is opposite to the outer profile **(11)** lies between the free ends of the inserts **(21, 24)** on one hand and the free ends of the outgrowths **(22, 23)** on the other, i.e. the distance of this face from the outer profile **(11)** is smaller than the height of the webs **(21, 24).** Such an arrangement provides appropriate stability and allows for the relative movement between the insulation profile **(13)** and the outer profile **(11)** in the longitudinal direction.

[0040] During assembly of the stile **(10)** each one of the two inserts **(32, 33)** provided on one face of the insulation profile **(13)** is received within a respective channel of the outer profile **(11)** and the ridges **(37, 38)** provided on the other face of the insulation profile **(13)** are fitted in the channel that is formed between the two consecutive webs **(27, 28)** of the inner profile **(16).** The insulation profile **(13)** may be arranged between the inner profile **(16)** and the outer profile **(11)** by moving it in the longitudinal direction so as to insert the inserts **(32, 32)** in the respective channels of the outer profile **(11)** and the ridges **(37, 38)** within the channel of the inner profile **(16)** or by moving it laterally with respect to the inner profile **(16)** and/or the outer profile **(11).** The latter method of attachment is feasible, because the width of the mouth of the channels is larger before the assembly process and the final dimensions of the mouth of the channels

are achieved during the assembly process as it will be described below.

[0041] Once the insulation profile **(11)** is inserted within the aluminum inner profile **(16)** and the aluminum outer profile **(11)**, the assembly machine applies pressure on the two webs **(27, 28)** of the inner profile **(11)** and the two webs **(21, 24)** of the outer profile **(11)**, so as to close the mouth of the channels and capture the inserts **(32, 33)** and the ridges **(37, 38)** within the respective channels. The pressure is applied on the webs **(21, 24, 27 28)** by a roller or any other suitable means. The dotted arrows designated with **A** in **Figure 2** show the direction of applying pressure by the assembly machine.

[0042] The connection of the inner profile **(16)** with the insulating element **(13)** is effected by applying a pressure on the ridges **(37, 38)** through the corresponding webs **(27, 28)** provided on the side shell of the inner profile **(16).** The connection, thus established is a friction connection between the insulting profile **(13)** and the inner profile **(16)** that further resists the relative longitudinal movement therebetween.

[0043] Each web **(27, 28)** of the inner profile **(16)** has an edge **(71)** that is inserted in a groove of the insulation profile **(13)**, preferably deforming the material of the insulation profile **(13).** Preferably, at least one of the two consecutive webs **(27, 28)** of the outer profile **(16)** has a face **(72)** that is machined to increase the friction coefficient between the face **(72)** and the insulation profile **(13).**

[0044] The webs **(21, 24)** of the outer profile **(11)** have a blunt edge **(76)** that is inserted in a guide of the insulation profile. The blunt edges **(76)** of the webs **(21, 24)** of the outer profile **(11)** are not sharp as the edges of the webs **(27, 28)** of the inner profile **(16).**

[0045] The connection of one insulation profile **(13)** with the outer profile **(11)** is effected by inserting each one of the two inserts **(32, 33)** into a channel of the outer profile **(11)** with tolerances, so as to allow the longitudinal relative movement, i.e. movement along the longitudinal axis, of the insulation profile **(13)** and the outer profile **(11).** Each channel is formed by a web **(21, 24)** and an adjacent outgrowth **(22, 23)** provided on the side shell of the outer profile **(11).**

[0046] A sash includes a top rail, a bottom rail **(70)** and two side stiles **(10).** At least one or both stiles **(10)** is/are connected to with a bottom rail and/or a top rail through the connector **(50)** that is shown in **Figure 4.**

[0047] **Figure 5** shows a connector **(50)** that connects the bottom rail **(70)** with a stile **(10).** The connector **(50)** has first connecting means **(57)** to receive and secure the bottom rail **(70)** to it. Preferably, the bottom rail **(70)** is composite, i.e. it may be an assembly of two or more profiles, or may be fabricated by a single profile.

[0048] As shown in **Figures 4 and 5**, the connector **(50)** has two legs, preferably perpendicular to each other, that form a ⌜-shaped or angled-shaped body, with the first connecting means **(57)** on one leg to connect the connector **(50)** with the bottom rail **(70)** and second connecting means **(55)** on the other leg to connect the connector **(50)** with the stile **(10).** A flexible seat **(52)** is provided along an edge of the leg, which connects the connector **(50)** with the stile **(10)**, i.e. the other leg. The fexible seat **(52)** and the second connecting means **(55)** protrude from the other leg and they are arranged in parallel disposition without interfering one with the other. The flexible seat **(52)** exhibits resilience to movement along said direction, i.e. lateral to the other leg.

[0049] The stile **(10)** is composite and includes two longitudinal profiles, an inner profile **(16)**, an outer profile **(11)** and an insulation profile **(13)** therebetween. The inner profile **(16)** and the insulation profile **(13)** are secured to the connector **(50)** via connecting means. In the example shown in **Figure 4**, the connector **(50)** is connected to the insulation profile **(13)** and the inner profile **(16)** via fasteners **(55)** that are inserted into bores **(35)** provided in the insulation profile **(13)**, see for example **Figures 2 and 3.**

[0050] The outer profile **(11)** sits on the flexible seat **(52)** provided on the connector **(50)**, which allows a movement of the outer profile **(11)** relative to the connector **(50)**, the inner profile **(16)** and the bottom rail **(70).** Flexibility may be achieved by various ways. In one example, see for example **Figures 4 and 5**, the seat **(52)** includes a rigid member **(522)** attached to the body **(501)** of the connector **(50)** via a spring **(523).** As one alternative, the seat **(52)** may be made by a flexible material with appropriate elasticity to allow for the axial deflection of the outer profile **(11).** The seat (52) has a free end surface, i.e. a surface that is at the extremity of the seat, which abuts a complementary free transverse surface of the first profile (11). Said surface of the first profile (11) is oblique or perpendicular with respect to the longitudinal direction within the stile (10). The configuration allows a free movement of the first profile away from the seat (52) and vice versa.

[0051] Optionally, the connector **(50)** has an insert **(58)** that is fitted telescopically in channel **(25)** provided on the wall of the outer profile **(11).** In the embodiment shown in **Figure 7**, the insert **(58)** is fitted within the channel **(25)** of the outer profile **(11).** The arrangement allows for the thermal axial deformations of the outer profile **(11)** without causing any bending on one hand and maintains the alignment of the outer profile **(11)** on the other.

[0052] When the sash is assembled, the connector is received within the stile and the top rail or the bottom rail. A sash may have four connectors, one at each corner, or less to the areas that are more sensitive to thermal deformations.

Claims

1. Composite stile **(10)** for a sash for windows, doors or other separator, including two longitudinal profiles **(11, 16)**, i.e. a first longitudinal profile **(11)** with a side shell and a second longitudinal profile **(16)**, which

are disposed along a longitudinal direction and connected through an insulation profile **(13)**, whereby each one of the two longitudinal profiles **(11, 16)** is connected with the insulation profile **(13)**, the connection of the first longitudinal profile **(11)** and the insulation profile **(13)** and the connection of the second longitudinal profile **(16)** and the insulation profile **(13)** are configured, so that the resistance to the relative linear motion of the first longitudinal profile **(11)** and the insulation profile **(13)** differs from the resistance to the relative linear motion of the second longitudinal profile **(16)** and the insulation profile **(13)** and so that the first longitudinal profile **(11)** may exhibit a linear movement in the longitudinal direction with respect to the insulation profile **(13)**, whereby the insulation profile **(13)** has a first face, which is opposite to the first longitudinal profile **(11)** with two inserts **(32, 33)** disposed along the longitudinal direction, with each one insert **(32, 33)** being received within a respective channel of the first longitudinal profile **(11)**, whereby each channel is defined by a web **(21, 24)** with an end on the side shell and a free end, and an outgrowth **(22, 23)** with an end on the side shell and a free end and whereby the first face of the insulation profile **(13)** is nearer to the side shell of the first longitudinal profile **(11)** than the free end of the webs **(21, 24).**

2. Composite stile **(10) according to claim 1**, whereby the free end of each one of the two webs **(21, 24)** of the first longitudinal profile **(11)** has a blunt edge **(76)** that is received within a respective channel provided on the insulation profile **(13).**

3. Composite stile **(10) according to claim 1 or claim 2**, whereby the insulation profile **(13)** has a second face **(36)**, which is opposite to the second longitudinal profile **(16)**, with two ridges **(37, 38)** disposed in the longitudinal direction, whereby both ridges **(37, 38)** are fixed in one single channel provided on the second longitudinal profile **(16)**, which is defined by two webs **(27, 28)** provided on the second longitudinal profile **(16).**

4. Composite stile **(10) according to claim 3**, whereby at least one of the two webs **(27, 28)** of the second profile **(16)** has an edge **(71)** inserted in a groove of the insulation profile **(13)** and fixed therein.

5. Composite stile **(10) according to claims 3 or 4**, whereby the ridges **(37, 38)** have a width that is larger than the width of the inserts **(32, 33)**, whereby the width of the ridges **(37, 38)** and the width of the inserts **(32, 33)** is the dimension on a cross-section of the insulation profile **(13)** and parallel to the second face **(36)** and the first face respectively.

6. Composite stile **(10) according to any one of claims 1 to 5**, whereby each insert **(32, 33)** has an outer face and an inner face, the inner faces of the inserts **(32, 33)** facing each other and diverging from the insulation profile **(13)** towards the first profile **(11)** and the outer faces of the inserts **(32, 33)** diverging from the insulation profile **(13)** towards the first profile **(11).**

7. Composite stile **(10) according to any one of claims 1 to 6**, whereby the first longitudinal profile **(11)** and a second longitudinal profile **(16)** are made of aluminum.

8. Sash with a stile **(10) according to any one of claims 1 to 7** and a rail **(70)** connected with a connector **(50)** at a corner of the sash, whereby the connector **(50)** is firmly attached to the second profile **(16)** and/or the insulation profile **(13)** and whereby the first profile **(11)** and the connector **(50)** are linked, so as to allow a relative movement therebetween.

9. Sash **according to claim 8**, whereby the connector **(50)** has a flexible seat that contacts a transverse surface of the first profile **(11)**, which surface is transversely disposed with respect to the longitudinal direction within the stile **(10).**

10. Sash **according to claim 8 or claim 9**, whereby the connector **(50)** has a guide **(58)** that extends within a channel **(25)** of the first profile **(11)** and extending along the first profile **(11).**

11. Sash **according to any one claim 8 to 10**, fitted on a wall of a building, which has a closed space on one side, whereby the second profile **(16)** is positioned towards said side.

12. Method of production of a composite profile **(10)** for a sash for windows, doors or other separator, including two longitudinal profiles **(11, 16)** disposed along a longitudinal direction and connected through an insulation profile **(13)**, whereby the method includes applying pressure on two webs **(21, 24)** provided on the one longitudinal profile **(11)** so as to capture each one of two inserts **(32, 33)** provided on the insulating profile **(13)** in a distinct channel provided in the one longitudinal profile **(11)**, so that the one longitudinal profile **(11)** and the insulation profile **(13)** may exhibit a relative linear motion, and applying a pressure on two webs **(27, 28)** provided on the other longitudinal profile **(16)** so as to fix a side wall **(36)** of the insulating profile **(13)** in a channel that is formed in the other longitudinal profile **(16)**, so as to establish a friction connection between the other longitudinal profile **(16)** and the insulation profile **(13).**

13. Method **according to claim 12**, whereby the pressure is applied by rollers of an assembly machine.

14. Method **according to claim 12 or claim 13**, including machining of a face **(72)** of at least one of the two webs **(27, 28)** provided on the other longitudinal profile **(16)**, so as to increase the friction co-efficient between the face (72) and the insulation profile (13).

15. Method **according to any one of claims 12 to 14**, whereby the composite profile is a composite stile **(10) according to any one of claims 1 to 7.**

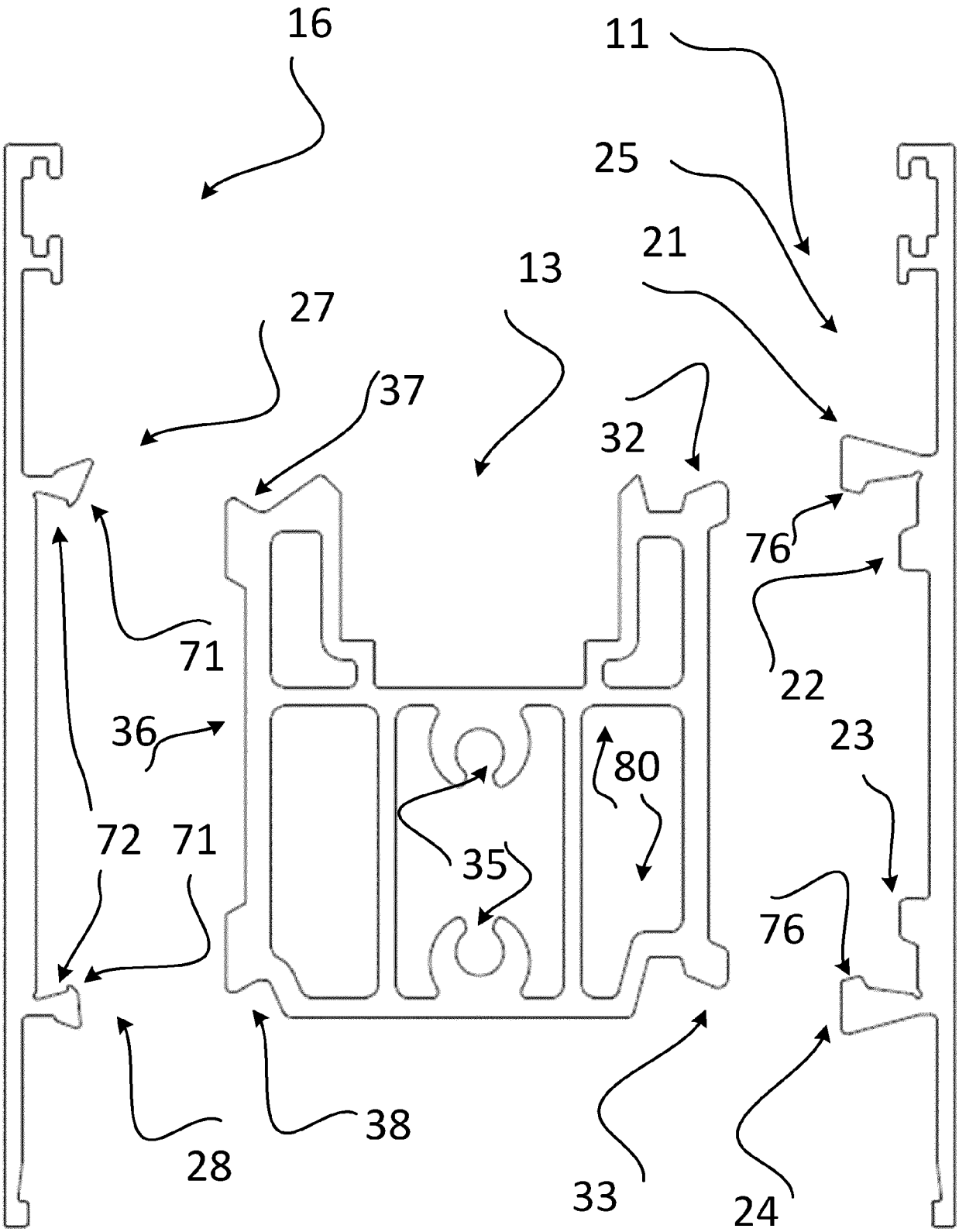

Figure 1

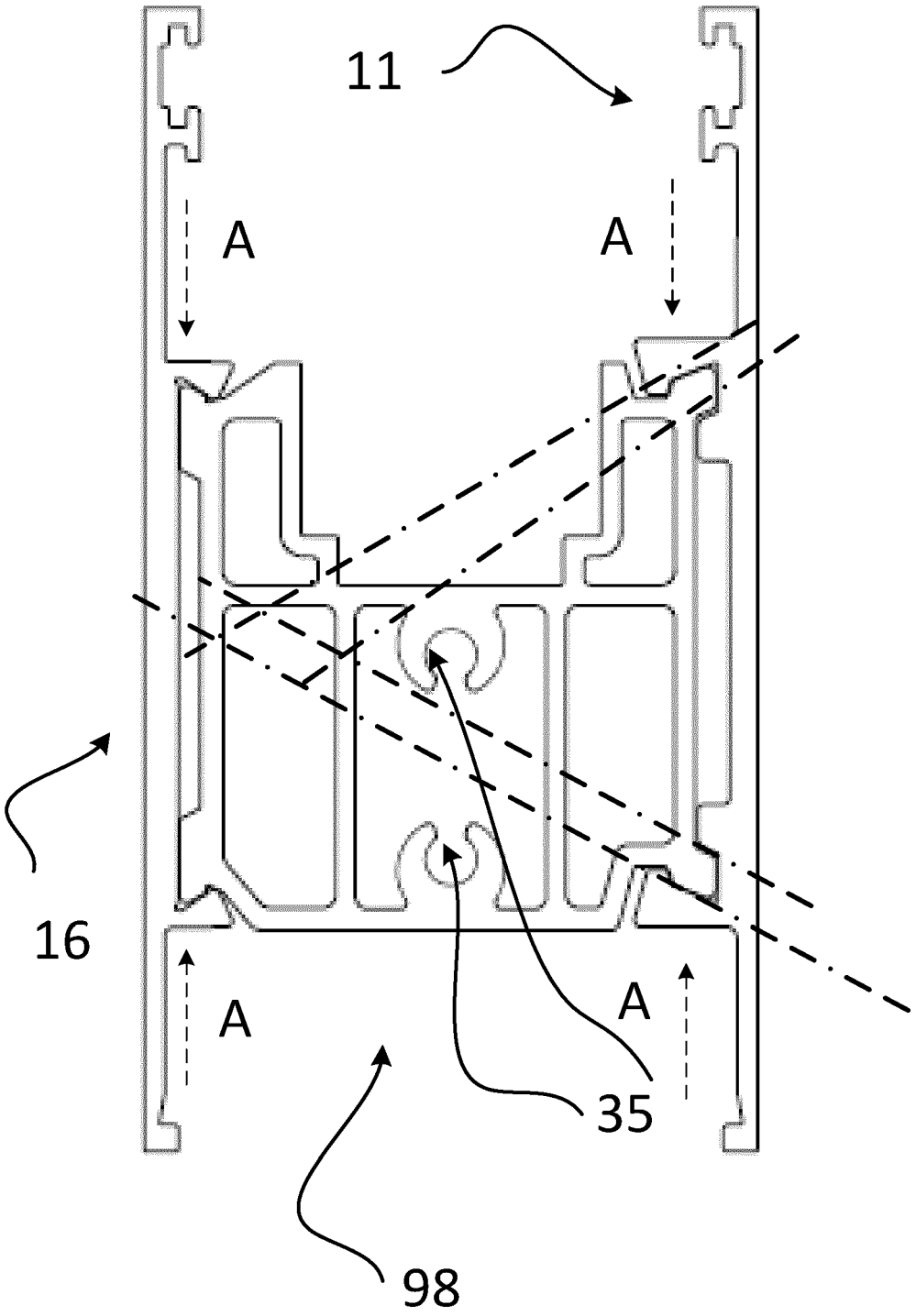

Figure 2

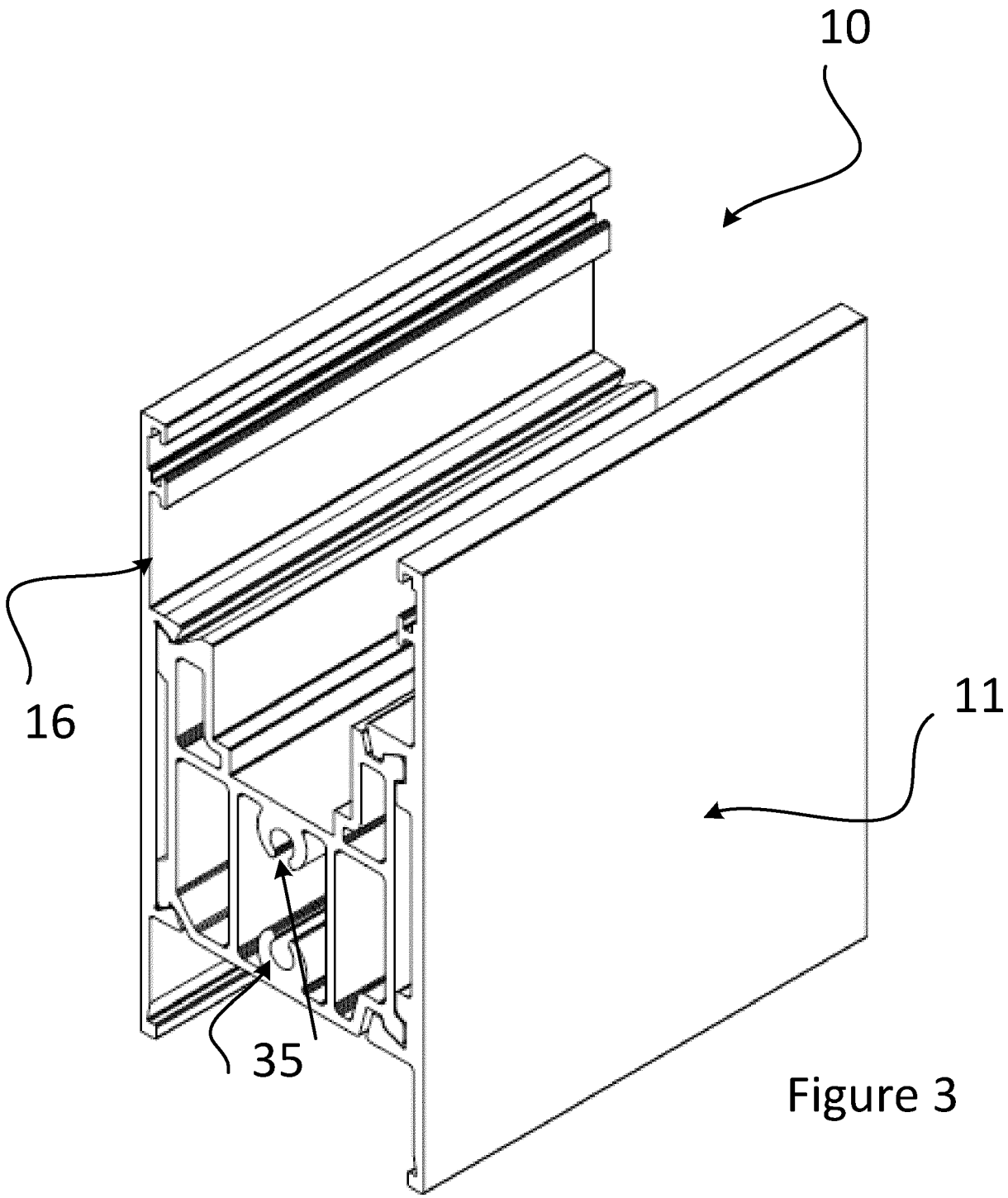

Figure 3

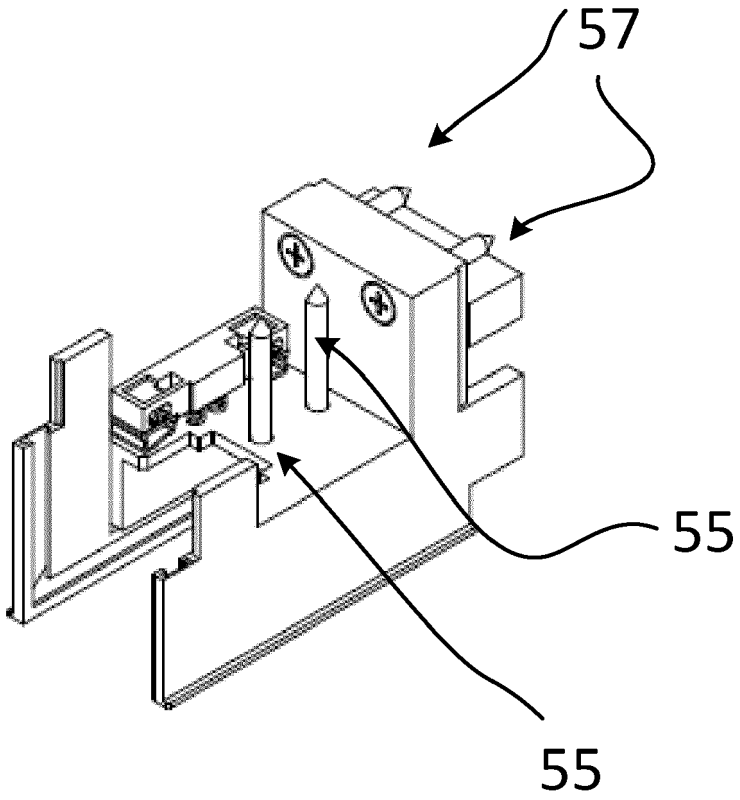

Figure 4

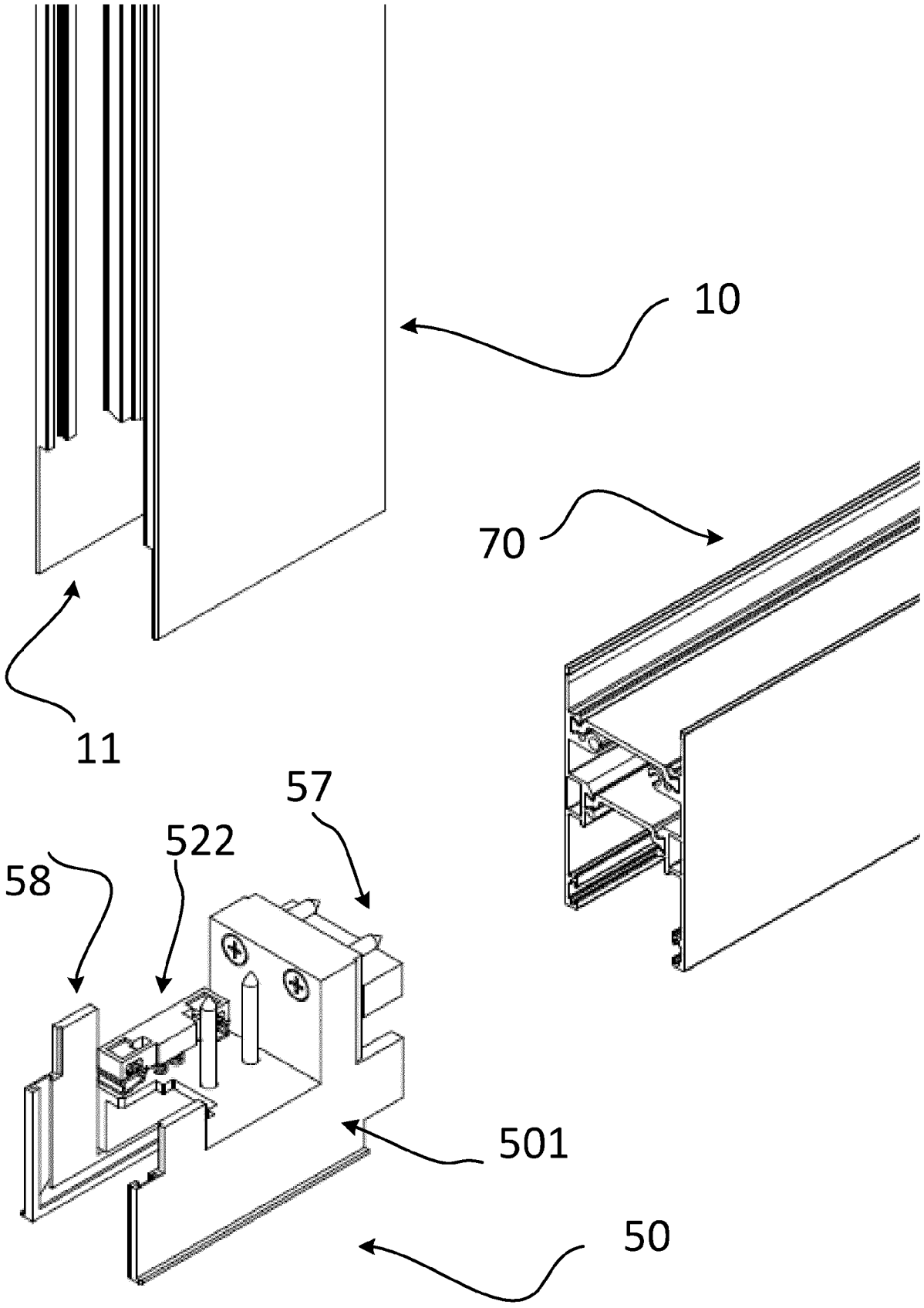

Figure 5

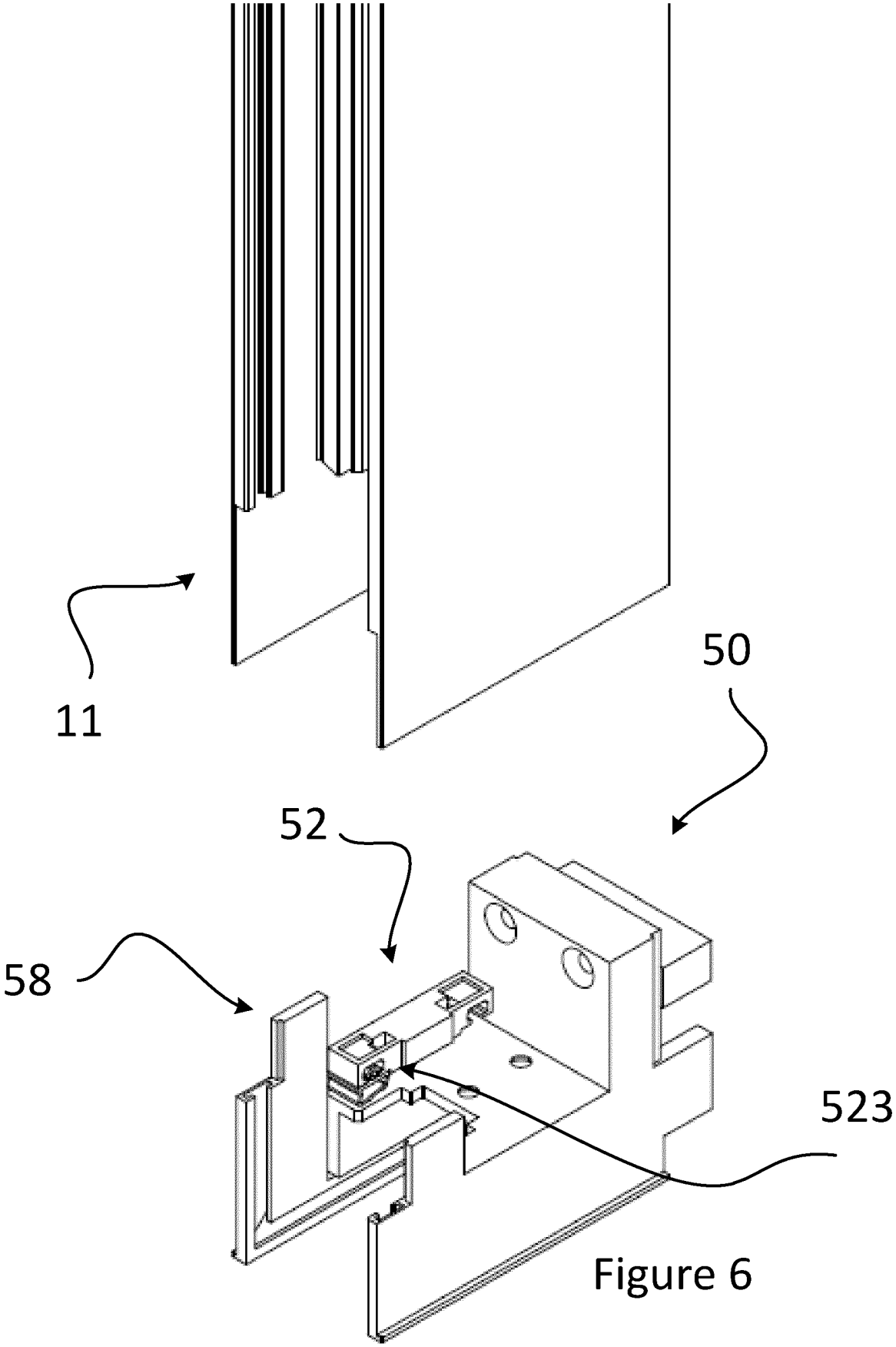

Figure 6

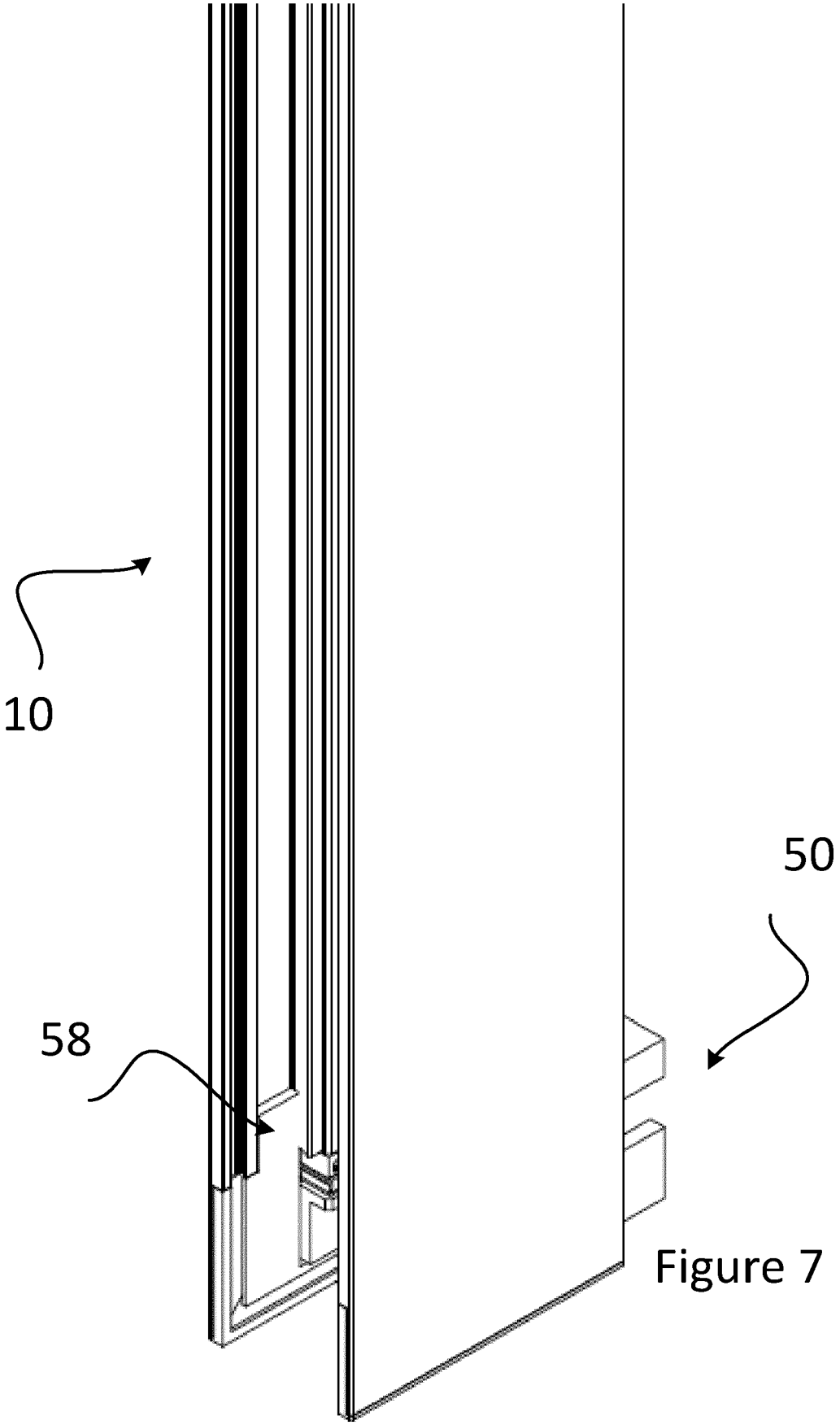

Figure 7

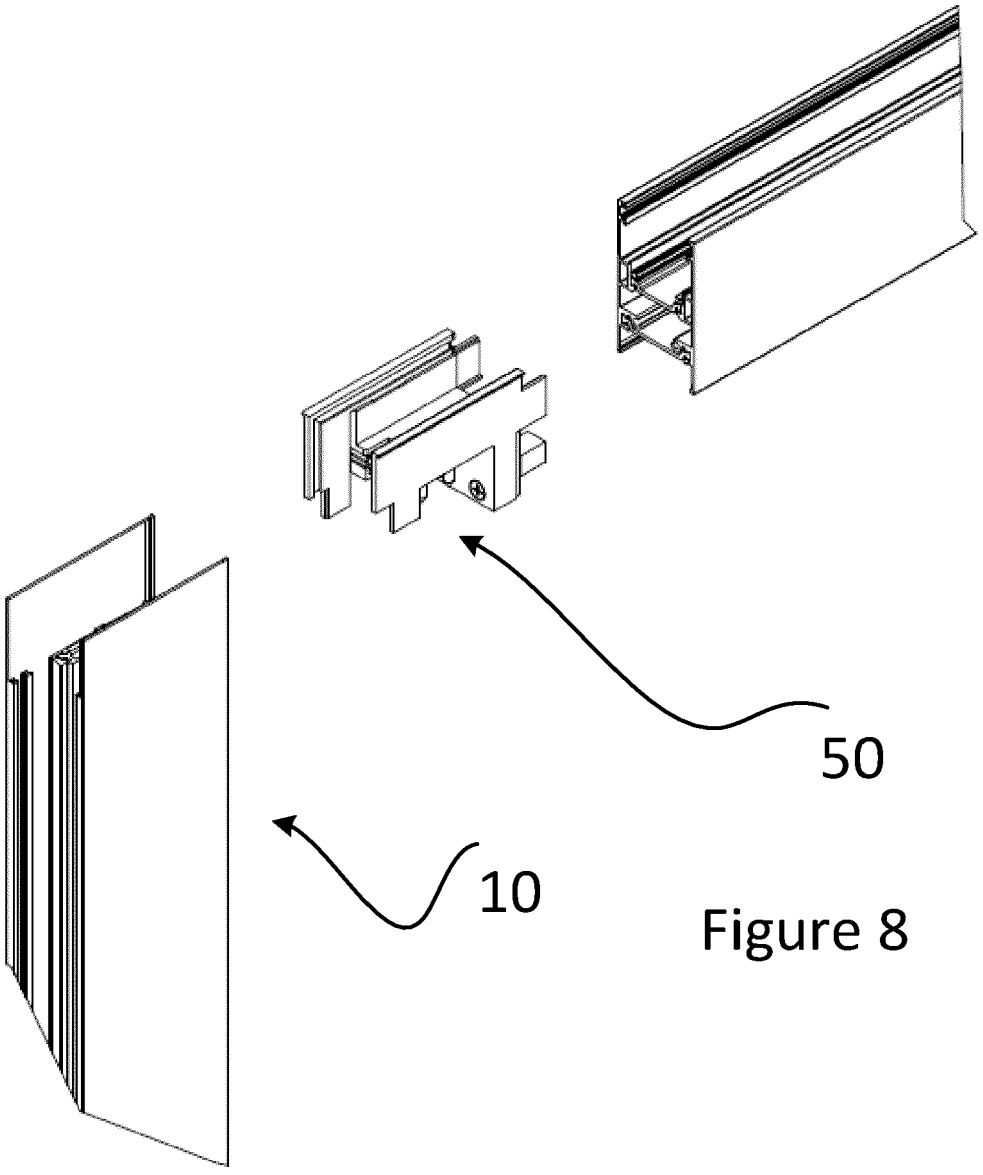

Figure 8

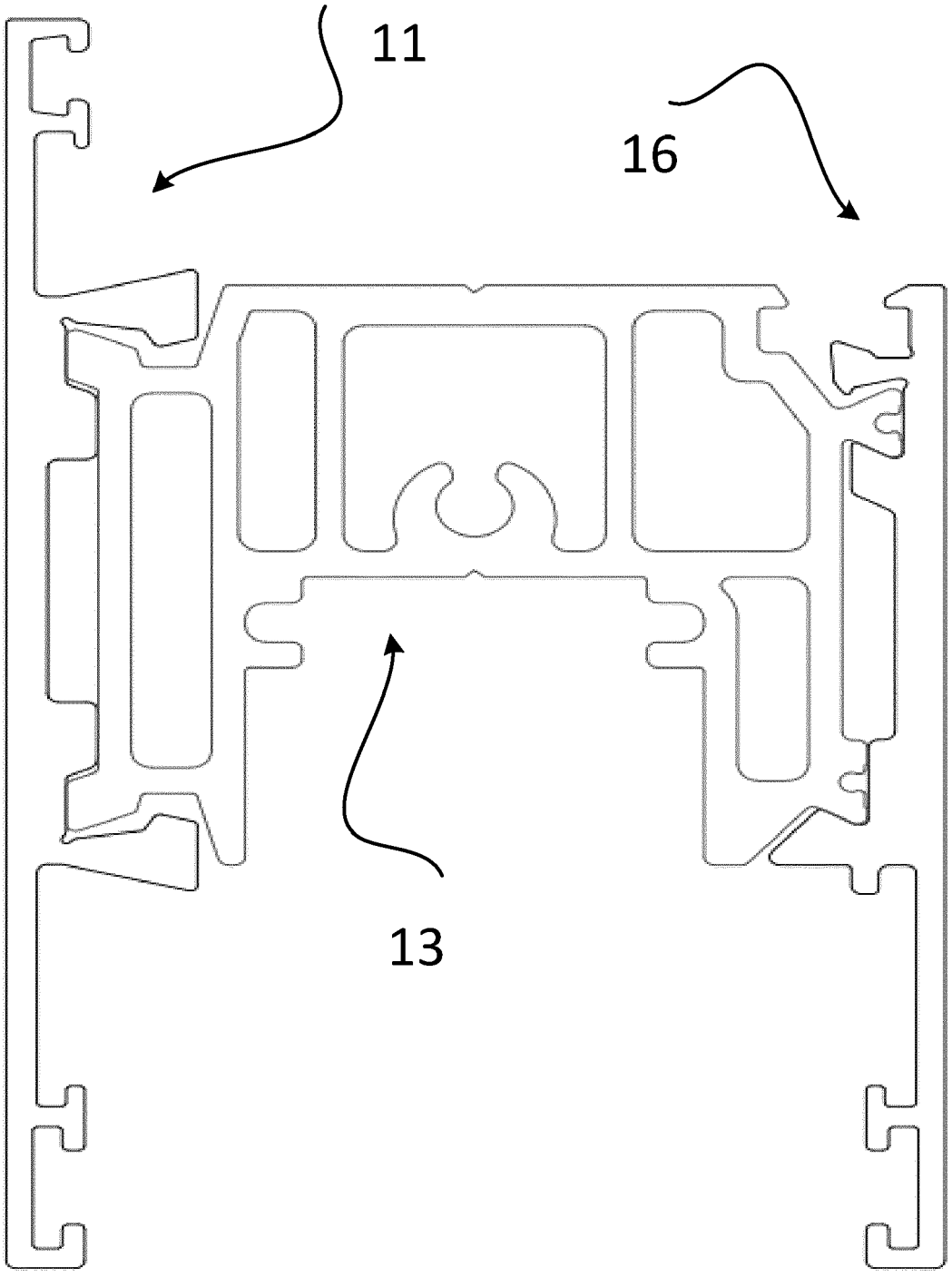

Figure 9

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EUROPEAN SEARCH REPORT

Application Number
EP 22 16 8686

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	26 July 2022	Cobusneanu, D

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