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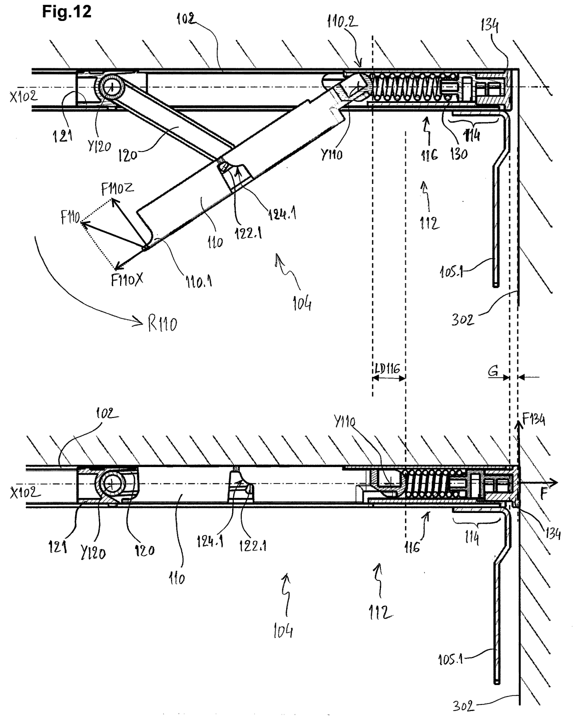
(54) MOUNTING ELEMENT FOR MOUNTING AN ARCHITECTURAL COVERING BETWEEN OPPOSING MOUNTING SURFACES

(57) A mounting element, for mounting an architectural covering between two opposing mounting surfaces, comprising:
- an elongate mounting member,
- an extension mechanism (104) operable between: i) a retracted state, and ii) an extended state in which the mounting element can be fastened to the architectural recess,
- an actuator (110) rotatable about a rotation axis (Y110) which is not parallel to the longitudinal direction, and
- a conversion mechanism (112) to convert a rotation of the actuator (110) into a translatory movement of the rotation axis (Y110) along the longitudinal direction (X102) and vice versa.

The extension mechanism (104) is arranged to abut one of the opposing mounting surfaces (302) in the extended state when the mounting element is mounted between the opposing mounting surfaces (302).

Fig.12



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Description

TECHNICAL FIELD

[0001] The present disclosure relates to a mounting element for mounting an architectural covering, such as a recess, between two opposing mounting surfaces, e.g. by a force fit (frictional fit) and/or form fit (e.g. if the recess has matching female or male relief). Furthermore, the present disclosure relates to an architectural covering comprising such a mounting element.

BACKGROUND ART

[0002] US20140086676A1 describes a so-called headrail for fixing an architectural covering in an architectural recess. The headrail of US20140086676A1 comprises an elongated member, for mounting the architectural covering in the architectural recess, and an extension mechanism manually moveable between a retracted state and an extended state.

[0003] However, the extension mechanism of US20140086676A1 is quite difficult to access, and hence difficult to manually operate. Moreover, the extension mechanism necessitates numerous components, which renders expensive the whole headrail. Besides, some of these components are relatively fragile and risk being broken after the extension mechanism has been operated several times.

SUMMARY

[0004] This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended as an aid in determining the scope of the claimed subject matter.

[0005] It is therefore a first object to provide an improved mounting element, which alleviates the aforementioned drawbacks. Accordingly, this object can be met with a mounting element for mounting an architectural covering between two opposing mounting surfaces, the mounting element comprising:

an elongate mounting member which is elongated along a longitudinal direction, and

an extension mechanism arranged at an end of the elongate mounting member, the extension mechanism being operable between: i) a retracted state, and ii) an extended state,

wherein the extension mechanism comprises:

an actuator rotatable about a rotation axis, the rotation axis being substantially perpendicular to the longitudinal direction, and

a conversion mechanism configured to convert a rotation of the actuator into a translatory movement of the rotation axis along the longitudinal direction from the retracted state to the extended state and vice versa,

wherein the extension mechanism is arranged to abut one of the opposing mounting surfaces in the extended state when the mounting element is mounted between the opposing mounting surfaces.

[0006] Besides, another object is to provide a mounting element, for mounting an architectural covering between two opposing mounting surfaces, the mounting element comprising:

an elongate mounting member which is elongated along a longitudinal direction, and

an extension mechanism arranged at an end of the elongate mounting member, the extension mechanism being operable between: i) a retracted state, and ii) an extended state,

wherein the extension mechanism comprises at least:

an actuator displaceable by a force having at least one component orthogonal to the longitudinal direction, and

a conversion mechanism configured to convert a rotation of the actuator into a translatory movement of the rotation axis along the longitudinal direction from the retracted state to the extended state and vice versa,

wherein the extension mechanism is arranged to abut one of the opposing mounting surfaces in the extended state when the mounting element is mounted between the opposing mounting surfaces.

[0007] A second object is to provide a mounting element for mounting an architectural covering between two opposing mounting surfaces, the mounting element comprising:

i) an elongate mounting member which is elongated along a longitudinal direction, and

ii) a supplementary extension mechanism which is arranged at an end of the elongate mounting member, the supplementary extension mechanism being operable between: i) a retracted state and ii) at least one extended state,

the supplementary extension mechanism comprising:

i) a supplementary actuator rotatable about a supplementary rotation axis, the supplementary rotation axis being substantially perpendicular to the longitudinal direction,

ii) a supplementary sliding portion arranged to translate along the longitudinal direction with respect to the elongate mounting member,

iii) a supplementary conversion mechanism configured to convert a rotation of the supplementary actuator into a translatory movement of the supplementary sliding portion along the longitudinal direction from the retracted state to an extended state and vice versa, and

wherein the supplementary extension mechanism is arranged to abut one of the opposing mounting surfaces.

[0008] A third object is to provide a battery assembly intended to supply power to an electric motor in order to wind and unwind a covering member of an architectural covering, the battery assembly comprising:

i) a rechargeable battery pack for storing energy,

ii) an output connector for connection to the electric motor, and

iii) a charger plug configured to connect the rechargeable battery pack to a recharging power source,

wherein the rechargeable battery pack is configured to be completely accommodated in an elongate mounting member, e.g. a headrail, belonging to a mounting element of the architectural covering.

[0009] The first, second and third objects may form the subject-matter of a claim to patent protection, either in combination or independently.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Further features, aspects, and advantages of the present disclosure will also become apparent from the following detailed description of embodiments, when read in conjunction with the exemplary drawings in which:

Figure 1 is a schematic perspective view of a mounting element according to a first embodiment of the first object where an extension mechanism is placed in a retracted state;

Figure 2 is a view similar to figure 1, where the extension mechanism is moving into an extended state;

Figure 3 is a view similar to figure 1, where the extension mechanism is placed in an extended state;

Figure 4 is a schematic perspective view of a part of an architectural covering and comprising the mounting element of figure 1;

Figure 5 is a schematic partly sectioned perspective view, along arrow V at figure 4;

Figure 6 is a schematic exploded perspective view of an extension mechanism belonging to the mounting element of figure 1;

Figure 7 is a view, on a larger scale, of detail VII at figure 6;

Figure 8 is a view, on a larger scale, of detail VIII at figure 6;

Figure 9 is a schematic assembled perspective view of the extension mechanism of figure 6;

Figure 10 is a schematic top view of an elongate mounting member belonging to the mounting element of figure 1;

Figure 11 is a schematic front view of the elongate mounting member of figure 10;

Figure 12 is a schematic sectional view, in a plane including the longitudinal direction, of the extension mechanism of figure 9 placed in a retracted state;

Figure 13 is a schematic sectional view, in a plane including the longitudinal direction, of the extension mechanism of figure 9 placed in an extended state;

Figure 14 is a schematic sectional view, in a plane parallel to the longitudinal direction, of the extension mechanism of figure 9 placed in an extended state;

Figure 15 is a schematic sectional view of part of a mounting element according to a second embodiment of the first object where an extension mechanism is placed in a retracted state;

Figure 16 is a schematic sectional view of part of a mounting element according to a third embodiment of the first object where an extension mechanism is placed in a retracted state;

Figure 17 is a schematic top perspective view of a part of the mounting element of figure 1 and a supplementary extension mechanism according to a second object placed in an retracted state close to an opposing mounting surface;

Figure 18 is a view similar to figure 17, where the supplementary extension mechanism is placed in an extended state;

Figure 19 is schematic bottom perspective view of the part of the mounting element of figure 17;

Figure 20 is schematic bottom perspective view of the part of the mounting element of figure 18;

Figure 21 is a schematic assembled perspective view of the supplementary extension mechanism;

Figure 22 is a schematic exploded perspective view of the supplementary extension mechanism of figure 21;

Figure 23 is a schematic perspective view of a component belonging to the supplementary extension mechanism of figure 21;

Figure 24 is a schematic cross-section, along plane XXIV at figure 23, of the component of figure 23;

Figure 25 is a schematic cross-section, along plane XXV at figure 17, where the supplementary extension mechanism is placed in an retracted state close to an opposing mounting surface;

Figure 26 is a view similar to figure 25, where the supplementary extension mechanism is heading for its extended state;

Figure 27 is a view similar to figure 25, where the supplementary extension mechanism is placed in its extended state;

Figure 28 is a schematic top partly exploded perspective view of the mounting element of figure 1 and a battery assembly according to a third object;

Figure 29 is a schematic top perspective view of the mounting element of figure 28 showing the battery of figure 28 in an assembled state;

Figure 30 is an enlarged view of detail XXX at figure 29;

Figure 31 is a schematic top perspective view, along a direction opposite to figure 31, of the detail XXX; and

Figure 32 is schematic bottom perspective view of the mounting element of figure 29.

DETAILED DESCRIPTION

[0011] In an improvement according to the afore-detailed first object, the actuator enables a user to easily fasten the mounting element supporting a covering between two opposing mounting surfaces. Indeed, the user only needs to grasp the actuator and rotate it to place the extension mechanism in the extended state. With one hand a user can hold the mounting element at its mounting position and, with its other hand, the user can operate the actuator so as to fasten the mounting element between two opposing mounting surfaces.

[0012] Once fastened, the mounting element achieves a force fit (frictional fit) between two opposing mounting surfaces. The mounting element may alternatively or complementarily achieve a form fit, for example if one of the opposing mounting surfaces has matching female or male reliefs.

[0013] According to an aspect, the rotation axis is transverse to the longitudinal direction, when viewed in a plane parallel to the longitudinal direction. The rotation axis may form an angle ranging from 80 degrees to 100 degrees with respect to the longitudinal direction. For example, the rotation axis may be orthogonal to the longitudinal direction, in which case the actuator rotates along a plane which includes the longitudinal direction.

[0014] According to an aspect, the rotation axis may intersect the longitudinal direction. Alternatively, the rotation axis may not intersect the longitudinal direction.

[0015] The elongate mounting member can withstand the weight of the whole architectural covering and withstand the forces resulting from the extension mechanism being in the extended state. Advantageously, the elongate mounting member is rigid or stiff enough to sustain the architectural covering while spanning the gap between the opposing mounting surfaces.

[0016] According to an aspect, the elongate mounting member is made of a single component. Thus, the mounting element can form a rail, for example a headrail. Alternatively to this aspect, the elongate mounting member may be made of several parts coupled together.

[0017] The components of the extension mechanism may be composed of metallic and/or of plastic materials.

[0018] Throughout the present application the term "along" means either substantially "parallel to" or substantially "collinear with".

[0019] According to an embodiment, the conversion mechanism may further comprise a compression part configured to transmit a compression force along the longitudinal direction towards the opposing mounting surface.

[0020] Thus, the translatory movement of conversion mechanism makes it possible to frictionally hold the mounting element between the two opposing mounting surfaces.

[0021] According to an aspect of this embodiment, the compression part may substantially have a prismatic shape extending along a longitudinal direction. The compression part may comprise an abutment part arranged to receive an end of the biasing part. Alternatively, the compression part may substantially have a cylindrical shape extending along a longitudinal direction.

[0022] According to an embodiment, the conversion mechanism may comprise a biasing part mechanically connected to the actuator, the biasing part being configured to generate the compression force when the extension mechanism is in the extended state.

[0023] Thus, such a biasing part can easily generate the compression force by simply being elastically deformed by the actuator.

[0024] According to an aspect of this embodiment, the biasing part may be elastically deformable and configured to be more stressed when the extension mechanism is in the extended state than in the retracted state so as to generate the compression force.

[0025] According to an aspect of this embodiment, the biasing part may be selected to have a deformation distance ranging from 10 mm to 100 mm, the deformation distance being measured as the length difference of the biasing part between the extended state and the retracted state.

[0026] According to an aspect of this embodiment, the compression part and the biasing part may be separate components. Alternatively, the compression part may be integral with the biasing part. For example, the compression part and the biasing part may be made of one-piece, for example composed of an elastomeric material.

[0027] According to an aspect of this embodiment, the biasing part may comprise at least one compression spring.

[0028] According to an embodiment, the biasing part may comprise at least two compression springs arranged in parallel and preferably laterally spaced apart from each other.

[0029] Thus, parallel compression springs make it possible to minimize the overall dimension of the mounting element along the longitudinal direction.

[0030] The/each compression spring may comprise a helical spring, which can be easily designed and assembled into the extension mechanism and which can have a very long service life.

[0031] Alternatively, the compression spring may be comprised of an elastomeric material.

[0032] According to an aspect of this embodiment, the conversion mechanism may further comprise at least one ring arranged between the actuator and the at least one compression spring. Such a ring can be configured to maximize the interface between the actuator and the at least one compression spring. In service, such a ring hence distributes the reaction force of the biasing part on the actuator.

[0033] According to an embodiment, the actuator may directly actuate the biasing part.

[0034] Thus, the extension mechanism can be very compact.

[0035] Alternatively, the actuator may indirectly actuate the biasing part, for example where the extension mechanism comprises at least one intermediary component interposed between the actuator and the biasing part.

[0036] According to an embodiment, the conversion mechanism may further comprise a connection member mechanically linked:

i) to the elongate mounting member so as to rotate between the retracted state and the extended state, and

ii) to the actuator so as to guide the actuator in rotation.

[0037] Thus, such a connection member can guide in rotation the actuator and facilitate the implementation of the actuator into the extension mechanism.

[0038] According to an embodiment, the actuator and the connection member may have substantially elongated shapes, the actuator and the connection member being substantially parallel when the extension mechanism is in the extended state.

[0039] Thus, such elongated actuator and connection member help keep the extension mechanism compact when viewed in a plane perpendicular to the longitudinal direction.

[0040] According to an aspect of this embodiment, the connection member may be a rod.

[0041] According to an embodiment, the connection member may be hinged to the elongate mounting member so as to rotate about a connection axis which is orthogonal to the longitudinal direction.

[0042] Thus, such a hinged connection member can easily be moved between the retracted state and the extended state.

[0043] Alternatively, the connection member may be linked to the elongate mounting member so as to move, concomitantly to its rotation, in translation along the longitudinal direction.

[0044] According to an embodiment, the connection member and the actuator may be linked by means of at least: i) a linkage pin and ii) a curvilinear bearing portion arranged to guide the at least one linkage pin.

[0045] Thus, such linkage pin and curvilinear bearing portion form an inexpensive yet accurate rotatable link between the connection member and the actuator.

[0046] According to an aspect of this embodiment, the connection member and the actuator may be linked by means of two linkage pins and two curvilinear bearing portions arranged to respectively guide the linkage pins.

[0047] According to an aspect of this embodiment, the curvilinear bearing portion may have the form of a circular arc. For example, the circular arc may extend over an angle ranging from 45 degrees to 120 degrees.

[0048] According to an embodiment, the linkage pin may protrude on a lateral face of the connection member, and the curvilinear bearing portion may extend on a side face of the actuator.

[0049] Alternatively, the linkage pin may protrude on a side face of the actuator and the curvilinear bearing portion may extend on a lateral face of the connection member.

[0050] According to an aspect, the extension mechanism may be arranged in the extended state such that the actuator is locked against its rotation from the extended state to the retracted state.

[0051] According to an embodiment, the actuator, the biasing part, and the connection member may be arranged so that the biasing part exerts a locking torque on the actuator about the connection axis, said locking torque being oriented counter the rotation direction of the actuator from the extended state to the retracted state.

[0052] Thus, such an arrangement prevents the extension mechanism from unwittingly returning into the retracted state once it has been placed by the user in the extended state.

[0053] According to an aspect of this embodiment, the actuator, the biasing part, and the connection member may be arranged such that:

the mechanical link between the actuator and the connection member is located on the other side,

with respect to the mechanical link between the actuator and the connection member when the extension mechanism is in the extended state,

of a segment connecting: a) the center of rotation of the connection member relative to the elongate mounting member, to b) the point of the actuator where is exerted the resultant of the reaction force generated by the biasing part.

[0054] According to an embodiment, the actuator may be at least partly arranged between the connection member and the biasing part.

[0055] According to an aspect of this embodiment, the guide may be configured to guide the compression part in translation along the longitudinal direction.

[0056] According to an embodiment, the actuator may have a pushing portion arranged to push the conversion mechanism, the pushing portion being moveable in translation along the longitudinal direction and in rotation.

[0057] According to an embodiment, the conversion mechanism may further comprise a guide having at least one guiding slot which extends at least partly along the longitudinal direction, and the actuator further may comprise at least one pin configured to slidingly and rotatably move in the at least one guiding slot.

[0058] Thus, such pin and guiding slot enable translation and rotation of the actuator.

[0059] Throughout the present application the adjective "longitudinal" characterizes an element, for example the guiding slot, which extends substantially parallel to the longitudinal direction along which the elongate mounting member is elongated.

[0060] According to an aspect of this embodiment, the guide may have two guiding slots arranged on two sides of the guide, and the actuator may have two pins configured to slidingly and rotatably move respectively in the two guiding slots.

[0061] According to an aspect of this embodiment, the at least one guiding slot fully extends along the longitudinal direction.

[0062] According to an embodiment, the actuator may be configured to be manually movable. Thus, a user can move the actuator manually in order to operate the extension mechanism between the retracted state and the extended state. According to an aspect, the actuator may comprise a lever. Such a lever may be formed by an elongate component, like an elongate profile. As the actuator is rotatable with respect to the elongate mounting member, the lever provides a lever arm to operate the conversion mechanism.

[0063] According to an aspect of this embodiment, the actuator may comprise a control portion which is arranged for an actuation of the actuator.

[0064] Thus, such a control portion makes it easy for a user to grasp and operate the actuator.

[0065] According to an aspect of this embodiment, the control portion may be distant from the pushing portion. For example, the pushing portion may be located on one end of the actuator whereas the control portion may be located in a median region of the actuator or on the other end of the actuator.

[0066] According to an embodiment, the actuator may protrude from the elongate mounting member when the extension mechanism is in the retracted state.

[0067] Thus, a user can easily reach for the actuator in order to place the extension mechanism in its extended state.

[0068] According to an embodiment, the connection member may herein comprise a rod.

[0069] According to an embodiment, the mounting element may further comprise a friction member arranged on an outer end portion of the extension mechanism so as to bear against the opposing mounting surfaces when the extension mechanism is in the extended state, the friction member being mechanically linked to the conversion mechanism such that the friction member converts a part of the translatory movement into an upwardly-oriented friction force when the friction member bears against the two opposing mounting surfaces.

[0070] Thus, such a friction member makes it possible to fasten the mounting element between two opposing mounting surfaces, because of the upwardly-oriented friction force.

[0071] According to an aspect of this embodiment, the friction member may be arranged to protrude from the outer end portion of the extension mechanism when the extension mechanism is in the extended state. However, depending on the play between the opposing mounting surfaces and the mounting element, the friction member may protrude only on a small scale.

[0072] According to an aspect of this embodiment, the friction member may be composed of at least one friction material selected within the group consisting of elastomers and plastics. Alternatively to this aspect, the friction member may be composed of another material provided the friction member has a surface roughness selected to convert the translatory movement into the upwardly-oriented friction force. The friction member may be elastic or resilient due to its material and/or due to its shape.

[0073] Alternatively to this embodiment, a friction pad can already be secured to the opposing mounting surfaces, for example by means of double-sided tape or glue, in which case the mounting element does not need to comprise a friction member.

[0074] According to an aspect of this embodiment, the friction member may be integral with the compression part. According to an aspect of this embodiment, the friction member and the compression part may be made as a single piece.

[0075] According to an aspect of this embodiment, the friction member may be secured directly to the compression part. Alternatively to this aspect, at least one element may be interposed between the friction member and the compression part, in which case the friction member may be secured indirectly to the compression part.

[0076] Alternatively to this embodiment, the friction member and the compression part may be separate components.

[0077] According to an embodiment, the elongate mounting member may comprise a housing part configured to substantially accommodate the extension mechanism in the extended state.

[0078] Thus, such a housing part enables design of a compact mounting element. Furthermore, such a housing part protects the actuator and the connection member.

[0079] The elongate mounting member may advantageously be configured to hold all the components of the architectural covering. In particular, the elongate mounting member may hold the extension mechanism, a covering member, and an electric motor for winding and unwinding the covering member.

[0080] According to an aspect of this embodiment, the housing part may be configured to fully accommodate the extension mechanism in the extended state.

[0081] According to an aspect, the mounting element may further comprise a supplementary friction member arranged on an end portion of the elongate mounting member opposite the extension mechanism so as to bear against the opposing mounting surfaces, the supplementary friction member being configured to convert a part of the translatory movement into an upwardly-oriented friction force when the supplementary friction member bears against the opposing mounting surfaces.

[0082] According to an aspect, the elongate mounting member may comprise mounting clips arranged to help mount, for example, a horizontal blind or a roman blind onto the mounting element so as to install an architectural covering.

[0083] Thus, the actuator enables a user to easily fasten the mounting element between two opposing mounting surfaces. Indeed, the user only needs to impart the force to the actuator so as to place the extension mechanism in the extended state. With one hand a user can hold the mounting element at its mounting position and, with its other hand, the user can impart the force to the actuator such that the extension mechanism abuts one of the opposing surfaces, so as to fasten the mounting element in the architectural recess.

[0084] Furthermore, another object is an architectural covering comprising a covering member for covering an architectural opening, wherein the architectural covering is equipped with a mounting element according to the present disclosure. Thus, such an architectural covering can be quickly and reliably installed by hand, hence without tool, within an architectural recess having two opposing mounting surfaces.

[0085] In an improvement according to the afore-detailed second object, the supplementary extension mechanism may comprise a supplementary compression part configured to transmit a compression force along the longitudinal direction towards the opposing mounting surface. Such a compression force helps hold the mounting element, because it helps generate a friction force against the opposing mounting surfaces.

[0086] According to an aspect, the supplementary compression part may have a prismatic shape extending along the longitudinal direction. In particular, the translatory movement of the supplementary extension mechanism may develop along the longitudinal direction.

[0087] According to an aspect, the supplementary conversion mechanism may be configured to cooperate with the supplementary actuator. In a particular aspect, the supplementary conversion mechanism may comprise a driven portion, which is fast in translation with the supplementary sliding portion, and several driving surfaces which are fast in rotation with the supplementary actuator and which are configured to cooperate selectively with driven portion.

[0088] According to a further aspect, the driven portion may have a semicylindrical male cross-section, the shape of which is substantially complementary to each one of the driving surfaces, such that each one of the driving surfaces may selectively drive the driven portion in translation along a longitudinal direction. In a particular aspect, the driving surfaces may be arranged such that each one of the driving surfaces extends substantially perpendicularly to its adjacent driving surfaces.

[0089] According to a further aspect, the supplementary actuator may have an actuating portion configured to actuate the supplementary actuator. In a particular aspect, the actuating portion may have a slot configured to receive a tool, for example a screwdriver, such that a user may exert a torque on the tool to impart rotation to the supplementary actuator about the supplementary rotation axis, selectively clockwise or counterclockwise. Advantageously, the elongate mounting member may have an opening, e.g. a hole, configured to make the slot accessible to a tool from outside, say from under, the elongate mounting member.

[0090] According to a further aspect, the supplementary actuator is configured such that the slot has a geometric center substantially located on the rotation axis, the driving surfaces being located at different respective distances from the geometric center. As a result, when the driven portion bears against a given driving surface, the outer end of the supplementary compression part is further from the opposing mounting surface than when the driven portion bears against another driving surface.

[0091] According to an aspect, the supplementary actuator may comprise a ratchet wheel having several notches on its periphery, the supplementary conversion mechanism may comprise at least one pawl, e.g. two pawls, configured to fall within the notches, the ratchet wheel and the or each pawl being configured to cooperate such that the or each pawl may fall into a respective notch, so as to prevent rotation of the supplementary actuator.

[0092] In a particular aspect, the or each pawl may selectively release the ratchet wheel, such that the supplementary actuator may rotate about the supplementary rotation axis. In a particular aspect, the ratchet wheel and the or each pawl are configured so as to define four discrete, stable positions of the supplementary actuator about the supplementary rotation axis, the discrete, stable positions being defined such that two successive driving surfaces are separated by a 90 degree angle.

[0093] In an improvement according to the afore-detailed third object, the rechargeable battery pack may be comprised of several batteries which may be arranged in a series, parallel or a mixture thereof.

[0094] According to an aspect, the rechargeable battery pack may be secured to elongate mounting member so as to prevent the user from removing the rechargeable battery pack out of the elongate mounting member. Advantageously, the battery assembly may comprise securing elements configured to secure the rechargeable battery pack to the elongate mounting member in a non-detachable manner. In a particular aspect, the elongate mounting member may have a housing space configured to accommodate totally or partially the rechargeable battery pack.

[0095] According to an aspect, the elongate mounting member may be configured so that the charger plug is accessible from outside the elongate mounting member. Advantageously, the elongate mounting member may comprise a hole for accessing the charger plug.

[0096] Thus, when the rechargeable battery pack needs to be recharged, the user may: i) either plug in a charger while the mounting element remains mounted, ii) or remove the whole mounting element and displace it to get the rechargeable battery pack recharged at a dedicated charging installation.

[0097] Some embodiments will now be described with reference to the exemplary drawings, in which like reference signs refer to like parts or features.

[0098] Figures **1** to **5** depict a mounting element **101** for mounting an architectural covering **200** in an architectural recess **300** which is formed by a window opening frame having two opposing mounting surfaces **302** and **304.** The architectural covering **200** comprises the mounting element **101.** The mounting element **101** comprises an elongate mounting member **102** and an extension mechanism **104.**

[0099] The elongate mounting member **102** is configured to mount the architectural covering **200** between opposing mounting surfaces **302** and **304.** In the illustrated embodiment, elongate mounting member **102** holds all the components of architectural covering **200,** in particular the extension mechanism **104,** a covering member **202** and a not shown electric motor for winding and unwinding the covering member **202.**

[0100] Elongate mounting member **102** is elongated along a longitudinal direction **X102** extending across architectural recess **300,** such that elongate mounting member **102** substantially spans the distance between the opposing mounting surfaces **302** and **304,** hence the length of architectural recess **300.** Hence, elongate mounting member **102** extends between the two opposing mounting surfaces **302** and **304.**

[0101] In the illustrated embodiment, elongate mounting member **102** is made of a single component which has an overall prismatic shape extruded along longitudinal direction **X102.** Thus, mounting element **101** can form a rail, for example a headrail. Alternatively, the elongate mounting member may be made of several parts attached together. Figure **11** depicts an exemplary cross-section of elongate mounting member **102.** The exemplary cross-section of elongate mounting member **102** substantially has the form of a rectangle with stiffening webs extending along longitudinal direction **X102.** Throughout the present disclosure, the term "along" means either "parallel to" or "collinear with".

[0102] In the example of figures **1** to **14,** mounting element **101** forms a headrail. Elongate mounting member **102** may be stiff enough to withstand the weight of the whole architectural covering **200** and the forces resulting from extension mechanism **104** being in the extended state. Elongate mounting member **102** may be composed of extruded aluminum.

[0103] As depicted in figures **1** and **4,** mounting element **101** further comprises two flanges **105.1** and **105.2** which are configured to hold some of the components of architectural covering **200,** like covering member **202.** Flanges **105.1** and **105.2** are respectively attached to the ends of elongate mounting member **102.**

[0104] The extension mechanism **104** may be arranged at an end **106** of the elongate mounting member **102**, as shown in figures **2** to **4**. Extension mechanism **104** may be operable between: i) a retracted state, as shown in figures **1** and **12**, and ii) an extended state, as shown in figures **3** and **13**. When the extension mechanism **104** is in the extended state, the mounting element **101** can be fastened to the opposing mounting surfaces **302** and **304,** as shown in figure **13**, so as to mount architectural covering **200** between opposing mounting surfaces **302** and **304.**

[0105] When the extension mechanism **104** is in the retracted state (figure **12**), the mounting element **101** is in a release configuration. When the extension mechanism **104** is in the extended state (figure **13**), the mounting element **101** is in a fastening configuration.

[0106] As shown in figures **6, 7** and **8,** the extension mechanism **104** may comprise an actuator **110** and a conversion mechanism **112**. Extension mechanism **104** may further comprise a compression part **114,** as depicted in figures **5**, **6, 12**, and **13**. The components of extension mechanism **104** may be composed of metallic and/or of plastic materials.

[0107] The actuator **110** may protrude from elongate mounting member **102** when the extension mechanism **104** is in the retracted state (figures **1** and **12**). The actuator **110** may be rotatable (compare figures **1** and **3**) about a rotation axis **Y110** which is perpendicular to the longitudinal direction **X102.** In the example of figures **12** and **13**, the angle of rotation of the actuator **110** about rotation axis **Y110** is about 40 degrees between the retracted and extended states of the extension mechanism **104**. Rotation axis **Y110** is herein transverse to longitudinal direction **X102** when viewed in a plane parallel to longitudinal direction **X102.**

[0108] Rotation axis **Y110** may form an angle ranging from 80 degrees to 100 degrees with the longitudinal direction. For example, rotation axis **Y110** is herein orthogonal to longitudinal direction **X102,** such that actuator **110** rotates along a plane which includes longitudinal direction **X102.** The rotation axis may be intersect the longitudinal direction **X102.** Alternatively, the rotation axis may not intersect the longitudinal direction **X102.**

[0109] As shown in figures **7**, **9,** and **12**, actuator **110** comprises a control portion **110**.**1** which is arranged for manually actuating actuator **110**. In order to operate actuator **110** a user can grasp the control portion **110**.**1** and then push the actuator **110** as a lever.

[0110] The actuator **110** may rotate along an actuator plane which includes the longitudinal direction **X102** and which is vertical when extension mechanism **104** is in the extended state. In the example of figures **1** to **12**, the rotation axis **Y110** is orthogonal to the longitudinal direction **X102.** The actuator plane corresponds to the plane of figure **12**.

[0111] The conversion mechanism **112** is configured to convert a rotation of actuator **110** into a translatory movement of rotation axis **Y110** along the longitudinal direction **X102** from the retracted state to the extended state and vice versa. In the example of figures **1** to **14,** the translatory movement of extension mechanism **104** develops along the longitudinal direction **X102.** The extension mechanism **104** is arranged to abut one of the opposing mounting surfaces **302** and **304** in the extended state when the mounting element **101** is mounted between the opposing mounting surfaces **302** and **304.**

[0112] As visible when comparing figures **12** and **13**, the compression part **114** of the extension mechanism **104** translates towards opposing mounting surface **302** (to the right). In other words, extension mechanism **104** extends in translation **(X102)** towards opposing mounting surface **302** when the extension mechanism **104** is moved from its retracted state (figure **12**) to its extended state (figure **13**).

[0113] As depicted in figures **1** and **12**, actuator **110** is displaceable, for example manually, by a force **F110** having a component **F110Z** which is orthogonal to the longitudinal direction **X102.** In the example of figure **12**, force **F110** also has a component **F110X** which is parallel to the longitudinal direction **X12.**

[0114] Conversion mechanism **112** is configured to convert the displacement of the actuator **110**, actually a rotation about rotation axis **Y110**, due to orthogonal component **F110Z,** into a translatory movement of rotation axis **Y110** towards opposing mounting surface **302** and from the retracted state to the extended state. In its extended state the extension mechanism **104** abuts one of the opposing mounting surfaces **302** and **304** when the mounting element **101** is mounted between the opposing mounting surfaces **302** and **304.**

[0115] Compression part **114** is configured to transmit a compression force **F** along the longitudinal direction **X102** towards the opposing mounting surface **302**, as shown in figure **13**. Compression part **114** may substantially have a prismatic shape extending along longitudinal direction **X102.** Alternatively, the compression part may substantially have a cylindrical shape extending along longitudinal direction.

[0116] When the architectural covering **200** is in its service position, the compression force **F** may be oriented substantially horizontally and towards the architectural recess **300,** more particularly towards opposing mounting surface **302**. The compression force **F** makes it possible to hold mounting element **101** in the architectural recess **300** between opposing mounting surfaces **302** and **304,** because compression force **F** helps generate a friction force, as described further below.

[0117] The conversion mechanism **112** comprises a biasing part **116** which is mechanically coupled with actuator **110**. Biasing part **116** may be configured to generate the compression force **F** when the extension mechanism **104** is in the extended state (figure **13**). In the embodiment of figures **1** to **14,** biasing part **116** is located on a longitudinal end of mounting element **101.** The actuator **110** may directly actuate biasing part **116.** Thus, extension mechanism **101** can be very compact. Alternatively, the actuator may indirectly actuate the biasing part, for example where the extension mechanism comprises at least one intermediary component interposed between the actuator and the biasing part.

[0118] Biasing part **116** may be a component distinct or separate from compression part **114.** Alternatively, the compression part may be integral with the biasing part and, for example, be made one-piece and composed of an elastomeric material.

[0119] In the illustrated embodiment, compression part **114** comprises an abutment part **115** which is arranged to receive an end of the biasing part **116.** Biasing part **116** may comprise at least one compression spring. In the illustrated embodiment, biasing part **116** comprises two compression springs **116.1** and **116.2**, which are herein arranged in parallel and laterally spaced apart from each other. Thus, the parallel compression springs **116.1** and **116.2** make it possible to minimize the overall dimension of mounting element **101** along longitudinal direction **X102.**

[0120] Each compression spring **116.1** or **116.2** may be comprised of a helical spring, which can be easily designed and assembled into extension mechanism **101** and which can have a very long service life. Alternatively, the compression spring may be comprised of an elastomeric material. The abutment part **115** has two cylindrical protrusions **115.1** and **115.2** which are configured to hold respectively the outer ends of springs **116.1** and **116.2.**

[0121] According to a not shown aspect, the conversion mechanism may further comprise at least one ring arranged between the actuator and the at least one compression spring. Such a ring can be configured to maximize the interface between the actuator and the at least one compression spring. In service, such a ring can hence distribute the reaction force of the biasing part on the actuator.

[0122] Biasing part **116** may be elastically deformable and configured to be more stressed when extension mechanism **104** is in the extended state (figures **3** and **13**) than in the retracted state (figures **1** and **12**) so as to generate the compression force F. The elastic deformation of biasing part **116** results from the length difference of the biasing part **116** between the extended state (figure **13**) and the retracted state (figure **12**). The biasing part may be selected to have a deformation distance ranging from 10 mm to 100 mm, for example of 50 mm, the deformation distance being measured as the length difference of the biasing part **116** between the extended state and the retracted state of extension mechanism **104**.

[0123] Conversion mechanism **112** may further comprise a connection member **120** which is mechanically linked to the elongate mounting member **102** so as to rotate between the retracted state and the extended state, and to the actuator **110** so as to guide actuator **110** in rotation. Connection member **120** is intended to guide in rotation actuator **110** and facilitate its implementation into extension mechanism 104.

[0124] On the one hand, connection member **120** may be hinged to the elongate mounting member **102** so as to rotate about a connection axis **Y120** which is orthogonal to the longitudinal direction **X102,** when extension mechanism **104** is displaced between the retracted state (figures **1** and **12**) and the extended state (figures **3** and **13**). In the example of figures **12** and **13**, the angle of rotation of the connection member **120** about connection axis **Y120** is about 30 degrees between the retracted and extended states of the extension mechanism **104**. Thus, the connection member can easily be moved between the retracted state and the extended state. Alternatively (not shown), the connection member may be linked to the elongate mounting member so as to move, concomitantly to its rotation, in translation along the longitudinal direction.

[0125] Mounting element **101** further comprises a hinge **121** which is configured to swingably link connection member **120** to elongate mounting member **102.** Connection member **120** can easily be moved between the retracted state and the extended state. The hinge **121** may be fastened to the elongate mounting member **102**, such that hinge **121** does not translate relative to elongate mounting member **102.**

[0126] On the other hand, the connection member **120** is linked to actuator **110** so as to guide actuator **110** in rotation, for example about the rotation axis **Y110.**

[0127] Connection member **120** and actuator **110** may be linked by means of at least: i) a linkage pin and ii) a curvilinear bearing portion arranged to guide the at least one linkage pin. Such linkage pin and curvilinear bearing portion form an inexpensive yet accurate rotatable link between the connection member and the actuator. The curvilinear bearing portion may have the form of a circular arc which extends, for example, over an angle ranging from 45 degrees to 120 degrees.

[0128] In the example of figures **1** to **14,** connection member **120** is linked to actuator **110** by means of two linkage pins **122.1** and **122.2** respectively cooperating with two curvilinear bearing portions **124.1** and **124.2**. Curvilinear bearing portions **124.1** and **124.2** are arranged to guide respectively linkage pins **122.1** and **122.2**. Each linkage pin **122.1** or **122.2** protrudes on a respective lateral face of connection member **120**. Each curvilinear bearing portion **124** extends on a respective side face of actuator **110**. Each curvilinear bearing portion **124.1** or **124.2** may have the form of a circular arc which extends over an angle of approximately 60 degrees. Alternatively (not shown), the or each linkage pin may protrude on a side face of the actuator and the curvilinear bearing portion may extend on a lateral face of the connection member.

[0129] In the example of figures **1** to **14,** the actuator **110** is configured to be manually movable. The actuator **110** and connection member **120** have substantially elongated shapes. The actuator **110** may herein form a lever and connection member **120** may herein be a rod. In the illustrated embodiment, actuator **110** comprises a control portion **110.1** which has a U-shaped cross-section so as to accommodate a substantial portion of connection member **120**. Thus, a user can move the actuator **110** manually in order to operate the extension mechanism **104** between the retracted state (figure 12) and the extended state (figure 13). As the actuator **110** is rotatable with respect to elongate mounting member **102**, actuator **110** provides a lever arm to operate conversion mechanism **112**.

[0130] The actuator **110** and connection member **120** are substantially parallel when the extension mechanism **104** is placed in the extended state, as shown in figures **13** and **14**. Due to their elongated shapes and to their substantially parallel arrangement, actuator **110** and connection member **120** keep extension mechanism **104** very compact when viewed in a plane perpendicular to the longitudinal direction **X102.**

[0131] In the example of figures **1** to **14,** elongate mounting member **102** comprises a housing part **126** which fully accommodates the extension mechanism **104** in its extended state (figures **3** and **13**). Housing part **126** thus protects the actuator **110** and the connection member **120** and mounting element **101** is compact when extension mechanism **104** is in its extended state, as no component protrudes from elongate mounting member **102.**

[0132] As best shown in figures **5** and **7**, the actuator **110** and the connection member **120** have respective outer side walls and respective inner stiffening webs with hollow regions therebetween. Such a design makes it possible to maximize the ratio of the mechanical strength over the weight respectively for the actuator **110** and for the connection member **120**.

[0133] As shown in figure **10**, housing part **126** has an opening **127** which is configured for the passage of part of the actuator **110** and part of the connection member **120**. When the extension mechanism is in the extended state (figures **3** and **13**) a user can access the actuator **110** through opening **127**. When extension mechanism **104** is in the retracted state (figures **1** and **12**), actuator **110** may protrude from the elongate mounting member **102** through opening **127**. Thus, a user can easily reach for actuator **110** and push it as a lever in order to place extension mechanism **104** in its extended state.

[0134] The actuator **110** may be at least partly arranged between the connection member **120** and the biasing part **116.** The actuator **110** may be interposed between connection member **120** and biasing part **116.**

[0135] In the illustrated embodiment, actuator **110** has a pushing portion **110.2** which is arranged to push conversion mechanism **112**, herein compression part **114,** via biasing part **116.** Put another way, pushing portion **110.2** indirectly pushes conversion mechanism **112**, herein compression part **114.** Pushing portion **110.2** may be moveable in translation along longitudinal direction **X102** and in rotation, herein about rotation axis **Y110**, hence orthogonally to longitudinal direction **X102.** The translatory movement of rotation axis **Y110** is transmitted by pushing portion **110.2.**

[0136] Relative to the actuator **110**, pushing portion **110.2** is distant from control portion **110.1.** Pushing portion **110.2** may be located on one end of actuator **110** whereas control portion **110**.**1** may be located on the opposite end of actuator **110** or else in a median region of the actuator **110**.

[0137] In the illustrated embodiment, the conversion mechanism **112** comprises a guide **130** which is configured to guide actuator **110** both in translation and in rotation, as hereinafter described.

[0138] The guide may have at least one guiding slot which extends at least partly along the longitudinal direction. The actuator may further comprise at least one pin configured to slidingly and rotatably move in the at least one guiding slot. Such pin and guiding slot enable translation and rotation of the actuator.

[0139] As shown in figure **8** or **9**, guide **130** has two guiding slots **130.1** and **130.2** which are arranged on two sides of guide **130.** Both guiding slots **130.1** and **130.2** extend parallel to longitudinal direction **X102.** As a complementary arrangement, as shown in figures **6**, **7** and **9**, actuator **110** may further comprise two pins **132.1** and **132**.**2** which are configured to slidingly and rotatably move respectively in guiding slots **130.1** and **130.2.** Thus, pins **132.1** and **132**.**2** and guiding slots **130.1** and **130.2** enable the actuator **110** to translate parallel to longitudinal direction **X102** and to rotate herein about rotation axis **Y110.**

[0140] The guide **130** herein has two grooves **130.3** and **130.4** which are respectively configured for the introduction of pins **132.1** and **132**.**2** up into the guiding slots **130.1** and **130.2** when an operator assembles the extension mechanism 104.

[0141] Besides, guide **130** also guides and holds compression part **114** along longitudinal direction **X102.** Guide **130** is configured to substantially accommodate compression part **114.**

[0142] In the illustrated embodiment, mounting element **101** further comprises a friction member **134** which is arranged on an outer end portion **104.1** of the extension mechanism **104** so as to bear against the architectural recess **300,** in this case against opposing mounting surface **302**, when extension mechanism **104** is in the extended state (figures **3** and **13**).

[0143] Friction member **134** may be mechanically linked to conversion mechanism **112**, herein to compression part **114,** such that friction member **134** converts a part of the translatory displacement of rotation axis **Y110** along the longitudinal direction **X102** into an upwardly-oriented friction force **F134,** as shown in figure 13, when friction member **134** abuts opposing mounting surface **302**. Thus, friction member **134** makes it possible to fasten mounting element **101** in architectural recess **300,** hence to mount architectural covering **200** between opposing mounting surfaces **302** and **304,** because of the upwardly-oriented friction force **F134.** Upwardly-oriented friction force **F134** results from the friction coefficient. The friction member **134** may belong to compression part **114.**

[0144] In the illustrated embodiment, friction member **134** is arranged to protrude, on a small scale, from the outer end portion **104.1** of the extension mechanism **104** when extension mechanism **104** is placed in the extended state. Depending on the play between architectural recess **300** and mounting element **101,** friction member **134** may protrude only on a small scale from outer end portion **104.1.** In the illustrated embodiment, friction member **134** is integral with compression part **114.** The friction member and the compression part may be made as a single piece.

[0145] Alternatively, the friction member may be a component separate from the compression part. The friction member may be secured to the compression part directly or indirectly, i.e. without or with at least one element interposed between the friction member and the compression part.

[0146] In the illustrated embodiment, friction member **134** is composed of at least one friction material selected within the group consisting of elastomeric materials and plastics. Alternatively, the friction member may be composed of another material provided the friction member has a surface roughness selected to convert the translatory movement into the upwardly-oriented friction force. The friction member may be elastic or resilient due to its material and/or due to its shape.

[0147] At the end (left end) of elongate mounting member **102** opposite the extension mechanism **104,** the mounting element **101** may further comprise a supplementary friction member. The supplementary friction member may be substantially similar to friction member **134.** The supplementary friction member may be arranged so as to bear against architectural recess **300,** in this case against opposing mounting surface **304.**

[0148] The supplementary friction member may also be configured to convert a part of the translatory movement of rotation axis **Y110** into an upwardly-oriented friction force when the supplementary friction member bears against opposing mounting surfaces **302** and **304.** This left-hand part of translatory movement of rotation axis **Y110** imparts a portion of the compression force **F** to the supplementary friction member via the stiff portions of elongate mounting member **102.** Mounting element **101** may further comprise a supplementary holder which is configured to hold the supplementary friction member. The supplementary friction member is arranged to protrude from the supplementary holder. The mounting element may further comprise a supplementary extension mechanism which is similar or identical to extension mechanism **104** and which is arranged at the other end of the elongate mounting member opposite the end at which is arranged extension mechanism **104,** as shown in figures **17** to **27**.

[0149] Alternatively or complementarily to the presence of a friction member, a friction pad can already be secured to the architectural recess, for example by means of double-sided tape or glue.

[0150] As shown in figure **14,** in order to prevent the extension mechanism **104** from unwittingly returning into the retracted state, extension mechanism **104** is arranged in the extended state (figure **14**) such that actuator **110** is locked against its rotation from the extended state to the retracted state.

[0151] In the example of figure **14,** actuator **110**, biasing part **116,** and connection member **120** may be arranged so that the biasing part **116** exerts a locking torque **T116** on actuator **110** about connection axis **Y120.** Locking torque **T116** is oriented counter a rotation direction **R110** of actuator **110** from the extended state to the retracted state. Thus, locking torque **T116** prevents an unexpected self-retraction of the extension mechanism **104**. In other words, locking torque **T116** can prevent the extension mechanism **104** from unwittingly returning into the retracted state once it has been placed by the user in the extended state.

[0152] In order to generate locking torque **T116,** actuator **110**, biasing part **116** and connection member **120** may be arranged such that:

the mechanical link **110.120** between actuator **110** and connection member **120** is located on the other side,

with respect to the mechanical link **110.120** between actuator **110** and connection member **120** when extension mechanism **104** is in the extended state (figure **14**),

of a segment connecting: a) the center of rotation **C121** of connection member **120** relative to elongate mounting member **102**, to b) the point **110.116** of actuator **110** where is exerted the resultant of the reaction force **F116** generated by biasing part **116.**

[0153] When the mounting element **101** is in service, the extension mechanism **104** is first in its retracted state. A user can, with one hand, hold the mounting element **101** at its mounting position between opposing mounting surfaces **302** and **304.** With its other hand, the user can grasp actuator **110**, push it as a lever to impart the force **F110** to actuator **110** and rotate it herein about rotation axis **Y110.**

[0154] The connection member **120** is driven in rotation about connection direction **Y120** by actuator **110** via linkage pins **122**.**1** and **122**.**2** guided by the curvilinear bearing portions **124**.**1** and **124.2.**

[0155] Pushing portion **110.2** of actuator **110** may rotate about rotation axis **Y110** and may slide along longitudinal direction **X102** towards opposing mounting surface **302**. While sliding, actuator **110** compresses biasing part **116.** Biasing part **116** in turn drives compression part **114** in translation along longitudinal direction **X102** towards opposing mounting surface **302**.

[0156] Once friction member **134** has covered a gap **G** between extension mechanism **104** and opposing mounting surface **302**, friction member **34** bears against the architectural recess **300.** Then, compression part **114** starts to transmit a compression force **F** to opposing mounting surface **302**. Hence, friction member **134** starts to convert a part of the translatory movement into the upwardly-oriented friction force **F134.**

[0157] When extension mechanism **104** reaches its extended state, biasing part **116** fully generates compression force **F**. The length difference of biasing part **116** as compared to the retracted state is depicted in figures **12** and **13** with reference sign **LD116.** Friction member **134** fully produces the upwardly-oriented friction force **F134,** which enables the mounting element **101** to hold in place the architectural covering **200.** The supplementary friction member likewise produces an upwardly-oriented friction force. Thus, the mounting element **101** is force-fitted between opposing mounting surfaces **302** and **304.**

[0158] Since actuator **110** is locked, as afore-detailed, against its rotation direction **R110** from the extended state to the retracted state, the extension mechanism **104** steadily remains in the extended state. The architectural covering **200** thereby remains in its service position.

[0159] As a summary, the user only needs to grasp actuator **110**, push it as a lever and rotate it in order to impart force **F110** to actuator **110** so as to place extension mechanism **104** in the extended state. With one hand a user can hold mounting element **101** at its mounting position and, with its other hand, the user can grasp actuator **110**, push it as a lever and rotate it in order to operate, hence impart the force **F110** to, the actuator **110** so as to fasten mounting element **101** to architectural recess **300.**

[0160] Thus, actuator **110** enables a user to easily fasten mounting element **101** between opposing mounting surfaces **302** and **304,** herein in architectural recess **300.** Such architectural covering **200** can hence be quickly and reliably installed by hand, hence without tool. Once fastened, mounting element **101** achieves a force fit (frictional fit) between opposing mounting surfaces **302** and **304.** Mounting element **101** may alternatively or complementarily achieve a form fit, for example if one or both of opposing mounting surfaces **302** and **304** has matching female or male reliefs (not shown).

[0161] Vice versa, in case the user wants to detach or unfasten the architectural covering **200** from the architectural recess **300,** the user can access the actuator **110** through opening **127.** Then the user draws the actuator **110** as a lever so as to rotate it along rotation direction **R110.** The connection member **120** rotates as well and guides the actuator from the extended state to the retracted state. Thus, such an architectural covering can be quickly and reliably installed by hand, hence without tool between opposing mounting surfaces.

[0162] While the actuator **110** rotates, biasing part **116** relaxes and eventually stops generating the compression force **F** and conversion mechanism **112** stops providing the translatory movement to rotation axis **Y110.** Friction member **134** and the supplementary friction member stop producing upwardly-oriented friction forces.

[0163] By the time the extension mechanism **104** reaches its retracted state, the mounting element **1** no longer holds the architectural covering **200,** which the user can then hold by one hand and remove from the architectural recess **300.**

[0164] Thus, the actuator enables a user to easily fasten or unfasten the mounting element between opposing mounting surfaces. Indeed, the user only needs to impart the force to the actuator so as to place the extension mechanism in the extended state. With one hand a user can hold the mounting element at its mounting position and, with its other hand, the user can push the lever-like actuator to impart the force driving the conversion mechanism, so as to fasten the mounting element to the architectural recess.

[0165] Figure **15** illustrates a second embodiment of a mounting element **101.** Inasmuch as the mounting element **101** of figure **15** is similar to the mounting element **101** of figures **1** to **14,** the afore-detailed description may be applied to the mounting element **101** of figure **15,** but for the hereinafter mentioned noticeable differences. An element of mounting element **101** of figure **15** having a structure or function identical to an element of the mounting element **101** of figures **1** to **14** is given the same reference sign.

[0166] Like the mounting element **101** of figures **1** to **14,** the mounting element **101** of figure **15** comprises an extension mechanism **104,** an actuator member **110**, a conversion mechanism **112**, a compression part **114,** a biasing part **116,** a connection member **120,** a guide **130**, and a friction member **134** and a supplementary friction member.

[0167] The mounting element **1** of figure **15** mainly differs from the mounting element **101** of figures **1** to **14** in that the compression part **114** and the biasing part **116** are reversedly arranged with respect to figures **1** to **14.** The mounting element **101** of figure **15** also differs from the mounting element **101** of figures **1** to **14** in that the actuator **110** and the connection member **120** are reversedly arranged with respect to figures **1** to **14.**

[0168] In service, actuator **110** directly pushes compression part **114** in translation towards opposing mounting surface **302**, whereas compression part **114** pushes biasing part **116** in translation. Biasing part **116** imparts a compression force to friction member **134** and to the supplementary friction member, which in turn produce upwardly-oriented forces to hold mounting element **101.**

[0169] Figure **16** illustrates a third embodiment of a mounting element **101.** Inasmuch as the mounting element **101** of figure **16** is similar to the mounting element **101** of figures **1** to **14,** the afore-detailed description may be applied to the mounting element **101** of figure **16,** but for the hereinafter mentioned noticeable differences. An element of mounting element **101** of figure **16** having a structure or function identical to an element of the mounting element **101** of figures **1** to **14** is given the same reference sign.

[0170] Like the mounting element **101** of figures **1** to **14,** the mounting element **101** of figure **16** may comprise an extension mechanism **104,** an actuator member **110**, a conversion mechanism **112**, a compression part **114,** a biasing part **116,** a connection member **120,** a guide **130,** and a friction member **134** and a supplementary friction member.

[0171] The mounting element **1** of figure **16** mainly differs from the mounting element **101** of figures **1** to **14** in that the biasing part **116** is arranged between actuator **110** and connection member **120**.

[0172] Figures **17** to **27** illustrate an independent object having a supplementary extension mechanism **154**

which belongs to mounting element **101** and which is arranged at the opposite end of the elongate mounting member **102** with respect to the above described extension mechanism **104**. Thus, the supplementary extension mechanism **154** is located near the flange **105.2.** The elongate mounting member **102** thus extends from extension mechanism **104** to supplementary extension mechanism **154.**

[0173] In the illustrated embodiment, the supplementary extension mechanism **154** has several functional features similar to the extension mechanism **104**. A component of supplementary extension mechanism **154** having a similar function as a component of extension mechanism **104** is hereinafter designated with the same reference sign augmented by 50. Supplementary extension mechanism **154** is operable between: i) a retracted state, as depicted on figures **17, 19** and **25,** and ii) an extended state, as depicted on figures **18, 20** and **27**. Figure **26** depicts the supplementary extension mechanism **154** placed in an intermediary state between the retracted state and an extended state.

[0174] Depending on the distance between the opposing mounting surfaces **304** and **302**, the mounting element **101** can be i) in a fastening configuration when supplementary extension mechanism **154** is in an extended state and ii) in a release configuration when supplementary extension mechanism **154** is in the retracted state.

[0175] The supplementary extension mechanism **154** may comprise a supplementary actuator **160,** a supplementary conversion mechanism **162** and a supplementary compression part **164.** Supplementary extension mechanism **154** may further comprise a supplementary sliding portion **163** which is arranged to translate along longitudinal direction **X102** with respect to elongate mounting member **102.** In the illustrated embodiment, sliding portion **163** is arranged to translate within the elongate mounting member **102**. The components of supplementary extension mechanism **154** may be composed of metallic and/or of plastic materials.

[0176] The supplementary actuator **160** may be rotatable about a supplementary rotation axis **Y160,** which is substantially perpendicular to the longitudinal direction **X102.** The supplementary rotation axis **Y160** may form an angle ranging from 80 to 100 degrees, e.g. 90 degrees, with the longitudinal direction **X102.** The supplementary rotation axis **Y160** may be vertical when the mounting element is in a service position.

[0177] The supplementary conversion mechanism **162** may be configured to convert a rotation of supplementary actuator **160** into a translatory movement of supplementary rotation axis **Y160** along the longitudinal direction **X102** from the retracted state to an extended state and vice versa. In the example of figures **17** to **32**, the translatory movement of supplementary extension mechanism **154** develops along the longitudinal direction **X102.**

[0178] The supplementary extension mechanism **154** may be arranged so that supplementary compression part **164** can abut opposing mounting surface **304** and thus transmit a compression force to opposing mounting surface **304**. In case the distance between the opposing mounting surfaces **304** and **302** is relatively short, the supplementary compression part **164** can abut opposing mounting surface **304** when the supplementary extension mechanism **154** is in its retracted state. In such a case, placing the extension mechanism **104** in its extended state suffices to make both the compression part **104** and the supplementary compression part **164** abut respectively on the opposing mounting surfaces **302** and **304**.

[0179] As visible when comparing figures **17** and **18** or figures **25** and **27,** the supplementary compression part **164** of supplementary extension mechanism **154** translates towards opposing mounting surface **304** (to the left). In other words, supplementary extension mechanism **154** extends in translation **(X102)** towards opposing mounting surface **304** when supplementary extension mechanism **154** is moved from its retracted state (figures **17** and **25**) to an extended state (figure **18** and **27).**

[0180] Supplementary compression part **164** may be configured to transmit a supplementary compression force along the longitudinal direction **X102** towards opposing mounting surface **304**. Supplementary compression part **164** substantially may have a prismatic shape extending along longitudinal direction **X102.** Supplementary compression part **164** may comprise an abutment part **165**, as shown in figure **22**.

[0181] When the architectural covering **200** is in its service position, the supplementary compression force may be oriented substantially horizontally and towards opposing mounting surface **304**. The supplementary compression force helps hold the mounting element **101** in the architectural recess **300** between opposing mounting surfaces **302** and **304**, because it helps generate a friction force, akin to the afore-described force generated by compression part **104**.

[0182] Supplementary conversion mechanism **162** may comprise a driven portion **163.1** which is fast in translation with supplementary sliding portion **163.** Furthermore, supplementary conversion mechanism **162** may comprise four driving surfaces **160.1, 160.2, 160.3** and **160.4** which are configured to cooperate selectively with driven portion **163.1.** The driving surfaces **160.1, 160.2, 160.3** and **160.4** are fast in rotation with supplementary actuator **160**. Within the supplementary conversion mechanism **162**, driven portion **163.1** is configured to cooperate with a selected one of the driving surfaces **160.1, 160.2, 160.3** and **160.4.**

[0183] As illustrated on figures **25** to **27**, the driven portion **163.1** has a semicylindrical male cross-section, the shape of which is substantially complementary to each driving surface **160.1, 160.2, 160.3** or **160.4.** Thus, driving surface **160.1, 160.2**, **160.3** or **160.4** may selectively drive driven portion **163.1** in translation along longitudinal direction **X102.** The driving surfaces **160.1, 160.2, 160.3** and **160.4** may be arranged such that each driving surface **160.1, 160.2, 160.3** or **160.4** extends substantially perpendicularly to its adjacent driving surfaces. For example, driving surface **160.1** may be arranged such that it extends substantially perpendicularly to its adjacent driving surfaces **160.2** and **160.4.**

[0184] The supplementary actuator **160** may have an actuating portion **161.** In the example of figure **24**, the actuating portion **161** has a slot **161.1** configured to receive a tool, for example a screwdriver. When a tool is inserted in slot **161.1**, a user may exert a torque on the tool to impart rotation to the supplementary actuator **160** about the supplementary rotation axis **Y160**, selectively clockwise or counterclockwise. As shown on figures **19** and **20**, elongate mounting member **102** may have an opening **102.160**, e.g. a hole, configured to make the slot **161.1** accessible to a tool from outside, say from under, the elongate mounting member **102**.

[0185] The supplementary actuator **160** may be configured such that the slot **161.1** has a geometric center **C161.1** substantially located on the rotation axis **Y160.** As illustrated by double arrows on figure **24**, the driving surfaces **160.1, 160.2, 160.3** and **160.4** are located at different respective distances from geometric center **C161.1.** When ranked by increasing distance, driving surface **160.1** is located closest to geometric center **C161.1;** driving surface **160.2** is located closer to geometric center **C161.1** than driving surface **160.3;** finally, driving surface **160.4** is the furthest from geometric center **C161.1.** Each of the afore-mentioned distances is measured as a Euclidean distance, i.e. as the shortest distance between geometric center **C161.1** and the closest point of the relevant driving surface.

[0186] As a result, when driven portion **163.1** bears against driving surface **160.1,** as shown in figure **25,** the outer end of the supplementary compression part **164** is further from the opposing mounting surface **304** than when driven portion **163.1** bears against driving surface **160.2**, as shown in figure **26,** and even further than when driven portion **163.1** bears against driving surface **160.3,** as shown in figure **27**.

[0187] Besides, supplementary actuator **160** may comprise a ratchet wheel **167** having several notches **167.1** on its periphery. Complementarily, supplementary conversion mechanism **162** may comprise at least one pawl, herein two pawls **168,** configured to fall within the notches **167.1.** Pawls **168** may be arranged symmetrically with respect to longitudinal direction **X102** when the mounting element **101** is in the assembled state. Ratchet wheel **167** and pawls **168** may be configured to cooperate such that each pawl **168** may fall into a respective notch **167.1** of the ratchet wheel **167.** When located into respective notches **167.1,** pawls **168** prevent rotation of supplementary actuator **160.** In the examples of figures **21** to **24**, ratchet wheel **167** and pawls **168** are configured so as to define four discrete, stable positions of the supplementary actuator **160** about supplementary rotation axis **Y160.** These four discrete, stable positions correspond to the four driving surfaces **160.1, 160.2, 160.3** and **160.4**.

[0188] In service, a user may insert a tool, e.g. a screwdriver, in slot **161.1** in order to impart a rotation to supplementary actuator **160** about supplementary rotation axis **Y160.** Such rotation of supplementary actuator **160** is converted by supplementary conversion mechanism **162** into a translatory movement of supplementary sliding portion **163,** via the cooperation of driven portion **163.1** with the selected driving surfaces **160.1, 160.2, 160.3** and **160.4.** Where supplementary compression part **164** does not abut opposing mounting surface **304**, the pawls **168** may release ratchet wheel **167**, such that supplementary actuator **160** may rotate about the supplementary rotation axis **Y160** from 90, 180 or 270 degrees, depending on the angle selected by the user to set the appropriate overall length of the mounting element **101**, i.e. depending on the driving surface **160.1, 160.2, 160.3** or **160.4** selected by the user to press against driven portion **163.1.**

[0189] The afore-mentioned four discrete, stable positions of the supplementary actuator **160** each correspond to a given protruding distance by which the supplementary compression part **164** protrudes towards opposing mounting surface **304**. For example, an increment in the protruding distance may be 1,5 mm between two successive stable positions, i.e. between two successive driving surfaces **160.1, 160.2**, **160.3** and **160.4.** After the user has set the appropriate overall length, the mounting element **101** can fit in the architectural recess **300** with both the extension mechanism **104** and the supplementary extension mechanism **154** abutting respectively on the opposing surfaces **302** and **304**.

[0190] Figures **28** to **32** illustrate another independent object comprising a battery assembly **401** intended to supply power to a not shown electric motor, in order to wind and unwind the covering member **202**. The electric motor may be housed within a roller supporting covering member **202**.

[0191] The battery assembly **401** may comprise a rechargeable battery pack **402**, an output connector **404** and a charger plug **406**. The rechargeable battery pack **402** may be comprised of several batteries which may be arranged in a series, parallel or a mixture thereof, depending on the required power characteristics.

[0192] The rechargeable battery pack **402** may be configured to be completely accommodated in the elongate mounting member **102** which may herein form a headrail as afore-mentioned. Elongate mounting member **102** may have a housing space configured to accommodate at least partially rechargeable battery pack **402**.

[0193] Rechargeable battery pack **402** may be secured to elongate mounting member **102** so as to prevent the user from removing rechargeable battery pack **402** out of elongate mounting member **102**. For example, battery assembly **401** may comprise securing elements configured to secure rechargeable battery pack **402** to the elongate mounting member **102** in a non-detachable manner.

[0194] The output connector **404** may be a standard DC connector configured to get connected to the electric motor. When supplied with power from the rechargeable battery pack **402,** the electric motor may wind or unwind the covering member **202** upon receipt of a dedicated command signal. In the example of figures **28** to **32**, output connector **404** is located outside the elongate mounting member **102** so as to be easily connected to the electric motor. A cable may connect the output connector **404** to the rechargeable battery pack **402**.

[0195] The charger plug **406** may be a standard plug configured to connect rechargeable battery pack **402** to a recharging power source. Charger plug **406** and elongate mounting member **102** may be configured so that charger plug **406** is accessible from outside the elongate mounting member **102**. For example, elongate mounting member **102** may comprise a hole **102.406** for accessing charger plug **406** and thus plug rechargeable battery pack **402** to a not shown charger or recharging power source.

[0196] In service, when the rechargeable battery pack **402** needs to be recharged, the user may: i) either plug in a charger while the mounting element **101** remains mounted in architectural recess **300,** ii) or remove from architectural recess **300** the whole mounting element **101** and displace it to get rechargeable battery pack **402** recharged at a dedicated charging installation.

[0197] Figure **32** illustrate yet another independent object. Elongate mounting member **102** may herein comprise mounting clips **103.1, 103.2, 103.3** arranged to help mount, for example, a horizontal blind or a roman blind onto the mounting element **101** so as to install the architectural covering **200**.

[0198] Although some embodiments have been described above in relation to the exemplary drawings, the present disclosure is not limited to the embodiments described above and illustrated in the exemplary drawings wherein the reference numbers are only provided as non-limiting examples. Many changes and alternatives may be made by the skilled person within the scope of the present disclosure, which scope shall not be limited to the appended drawings.

Claims

1. A mounting element (101), for mounting an architectural covering (200) between two opposing mounting surfaces (302, 304), the mounting element (101) comprising:

- an elongate mounting member (102) which is elongated along a longitudinal direction (X102), and
- an extension mechanism (104) arranged at an end of the elongate mounting member (102), the extension mechanism (104) being operable between: i) a retracted state, and ii) an extended state,

wherein the extension mechanism (104) comprises:

- an actuator (110) rotatable about a rotation axis (Y110), the rotation axis (Y110) being substantially perpendicular to the longitudinal direction (X102), and
- a conversion mechanism (112) configured to convert a rotation of the actuator (110) into a translatory movement of the rotation axis (Y110) along the longitudinal direction (X102) from the retracted state to the extended state and vice versa, and

wherein the extension mechanism (104) is arranged to abut one of the opposing mounting surfaces (302, 304) in the extended state when the mounting element (101) is mounted between the opposing mounting surfaces (302, 304).

2. The mounting element (101) according to claim 1, wherein the conversion mechanism (112) further comprises a compression part (114) configured to transmit a compression force (F) along the longitudinal direction (X102) towards one of the opposing mounting surfaces (302, 304), and
wherein, optionally, the conversion mechanism (112) comprises a biasing part (116) mechanically connected to the actuator (110), the biasing part (116) being configured to generate the compression force (F) when the extension mechanism (104) is in the extended state.

3. The mounting element (101) according to the preceding claim, wherein the biasing part (116) comprises at least two compression springs (116.1, 116.2) arranged in parallel.

4. The mounting element (101) according to any one of claims 2 to 3, wherein the actuator (110) directly actuates the biasing part (116).

5. The mounting element (101) according to any one of the preceding claims, wherein the conversion mechanism (112) further comprises a connection member (120) operably connected:

i) to the elongate mounting member (102), and
ii) to the actuator (110), and

wherein, optionally, the actuator (110) and the connection member (120) have substantially elongated shapes, the actuator (110) and the connection member (120) being substantially parallel when the extension mechanism (104) is placed in the extended state.

6. The mounting element (101) according to the preceding claim, wherein the connection member (120) is hinged to the elongate mounting member (102) so as to rotate about a connection axis (Y120) which is orthogonal to the longitudinal direction (X102).

7. The mounting element (101) according to any one of claims 5 to 6, wherein the connection member (120) and the actuator (110) are linked by means of at least: i) a linkage pin (122.1, 122.2) and ii) a curvilinear bearing portion (124.1, 124.2) arranged to guide the at least one linkage pin (122.1, 122.2), and wherein, optionally, the at least one linkage pin (122.1, 122.2) protrudes on a lateral face of the connection member (120), and wherein the curvilinear bearing portion (124.1, 124.2) extends on a side face of the actuator (110).

8. The mounting element (101) according to any one of claims 2 to 4 and to any one of claims 6 to 7, wherein the actuator (110), the biasing part (116) and the connection member (120) are arranged so that the biasing part (116) exerts a locking torque (T116) on the actuator (110) about the connection axis, said locking torque (T116) being oriented counter the rotation direction (R110) of the actuator (110) from the extended state to the retracted state.

9. The mounting element (101) according to any one of claims 2 to 4 and to any one of claims 6 to 8, wherein the actuator (110) is at least partly arranged between the connection member (120) and the biasing part (116).

10. The mounting element (101) according to any one of the preceding claims, wherein the conversion mechanism (112) further comprises a guide (130) having at least one guiding slot (130.1, 130.2) which extends at least partly along the longitudinal direction (X102), and wherein the actuator (110) further comprises at least one pin (132.1, 132.2) configured to move in the at least one guiding slot (130.1, 130.2) in translation along the longitudinal direction (X102) and, optionally, in rotation about the rotation axis (Y110).

11. The mounting element (101) according to any one of the preceding claims, wherein the actuator (110) comprises a control portion (110.1) which is arranged for an actuation of the actuator (110).

12. The mounting element (101) according to any one of the preceding claims, wherein the actuator (110) protrudes from the elongate mounting member (102) when the extension mechanism (104) is in the retracted state.

13. The mounting element (101) according to any one of the preceding claims, further comprising a friction member (134) arranged on an outer end portion (104.1) of the extension mechanism (104) so as to abut one of the opposing mounting surfaces (302, 304) when the extension mechanism (104) is in the extended state, the friction member (134) being mechanically linked to the conversion mechanism (112) such that the friction member (134) converts a part of the translatory movement into an upwardly-oriented friction force (F134) when the friction member (134) abuts said opposing mounting surface (302, 304).

14. The mounting element (101) according to any one of the preceding claims, wherein the elongate mounting member (102) comprises a housing part configured to substantially accommodate the extension mechanism (104) in the extended state.

15. An architectural covering (200) comprising a covering member for covering an architectural recess (300), wherein the architectural covering (200) is equipped with a mounting element (101) according to any one of the preceding claims.

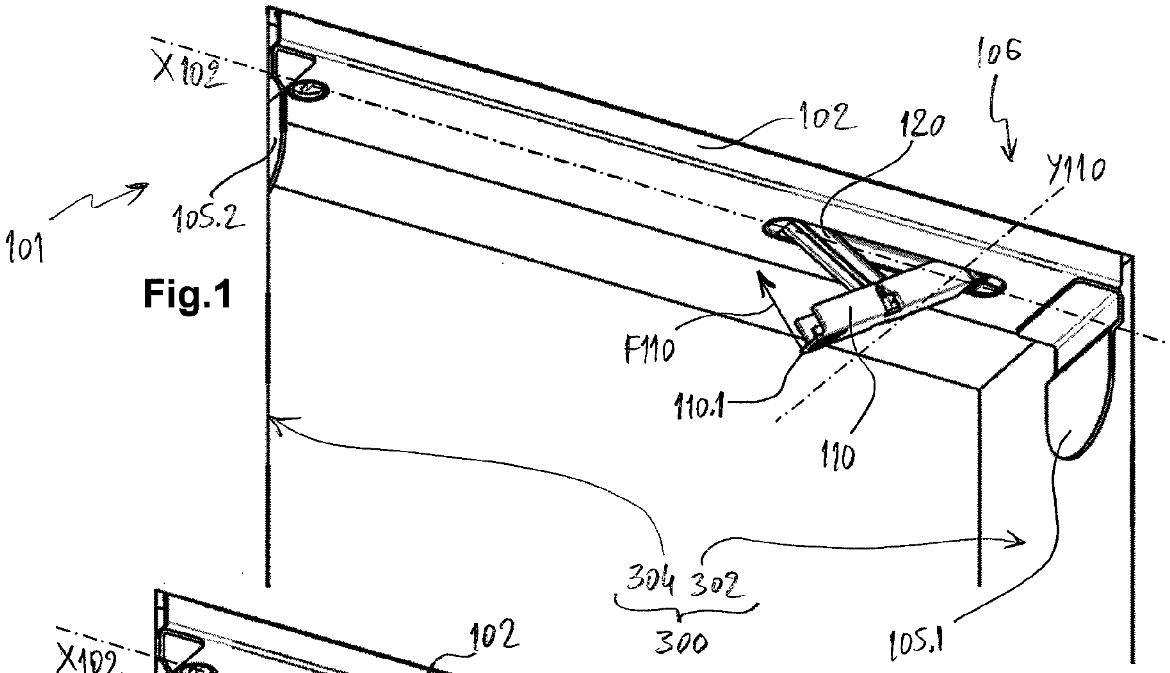


Fig.1

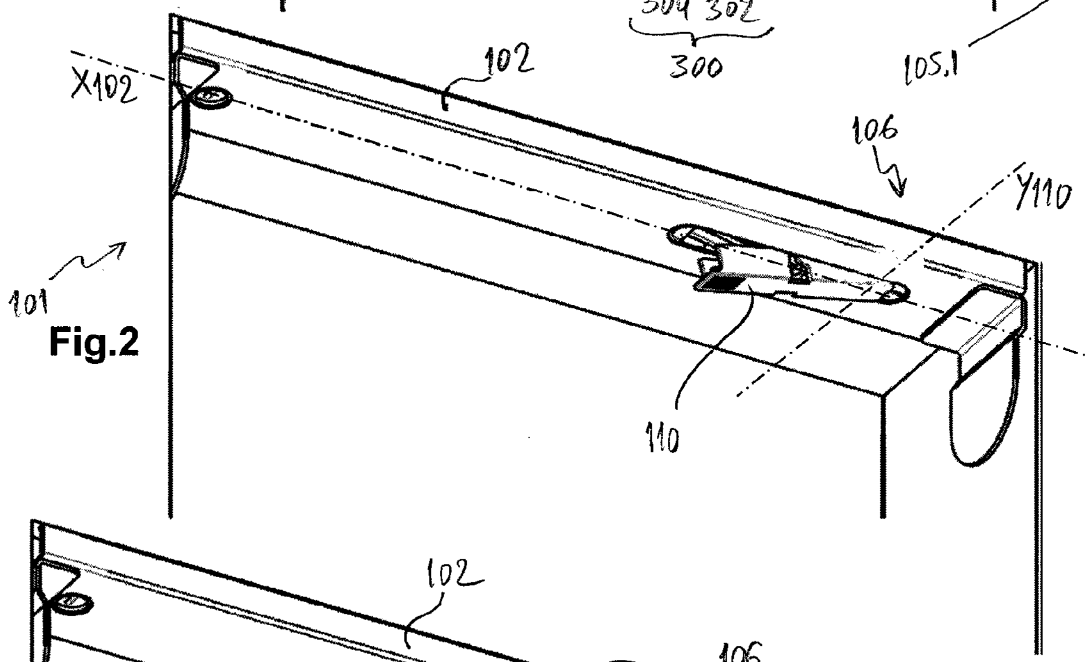


Fig.2

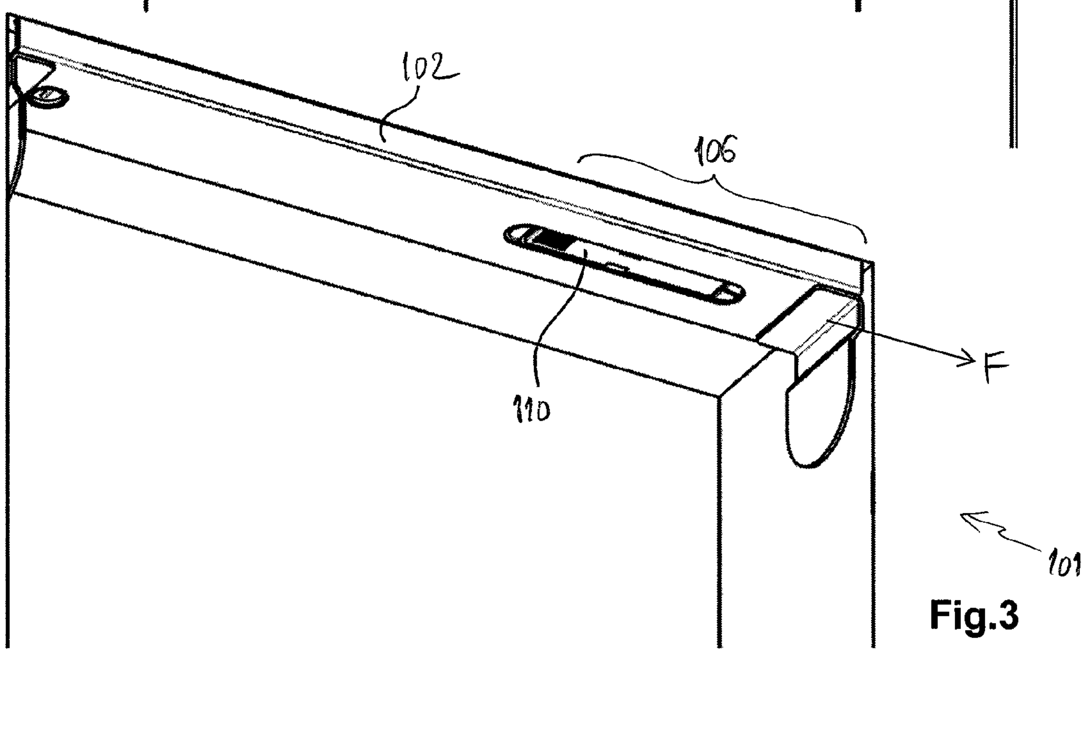


Fig.3

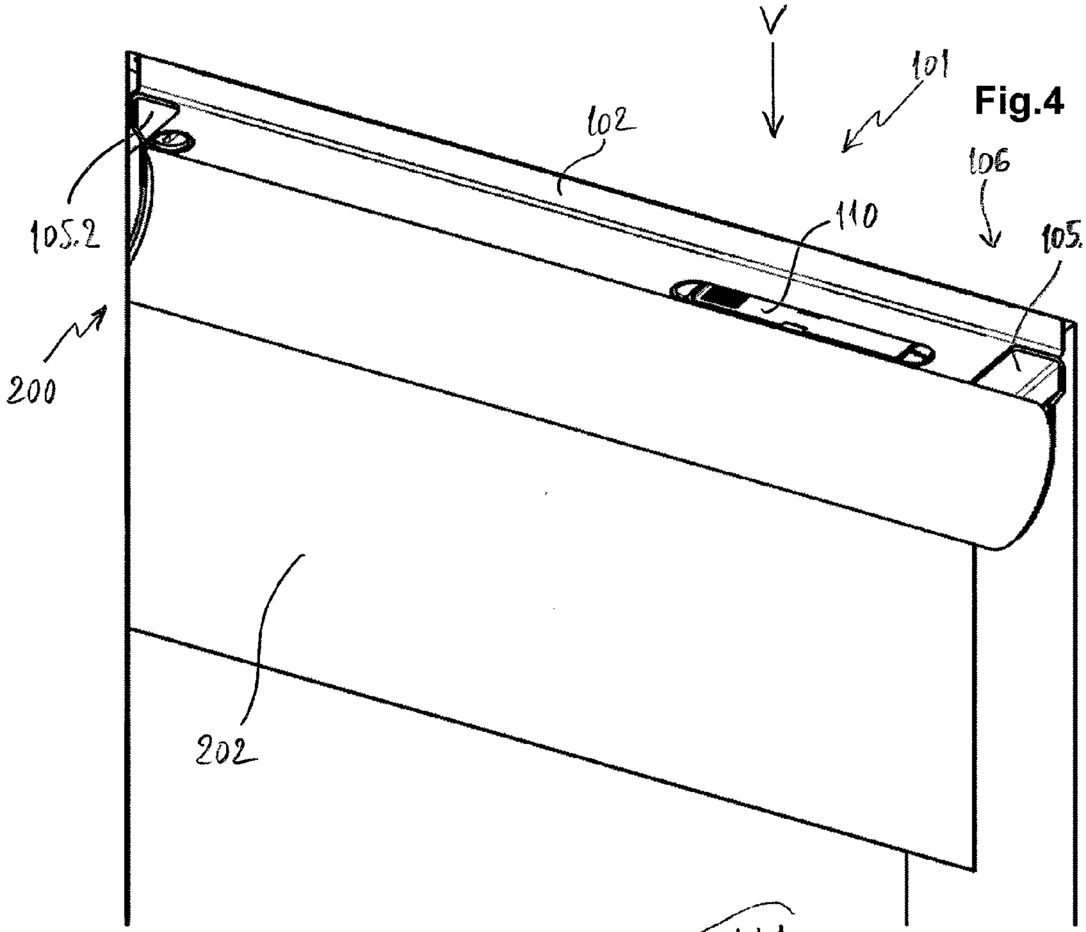
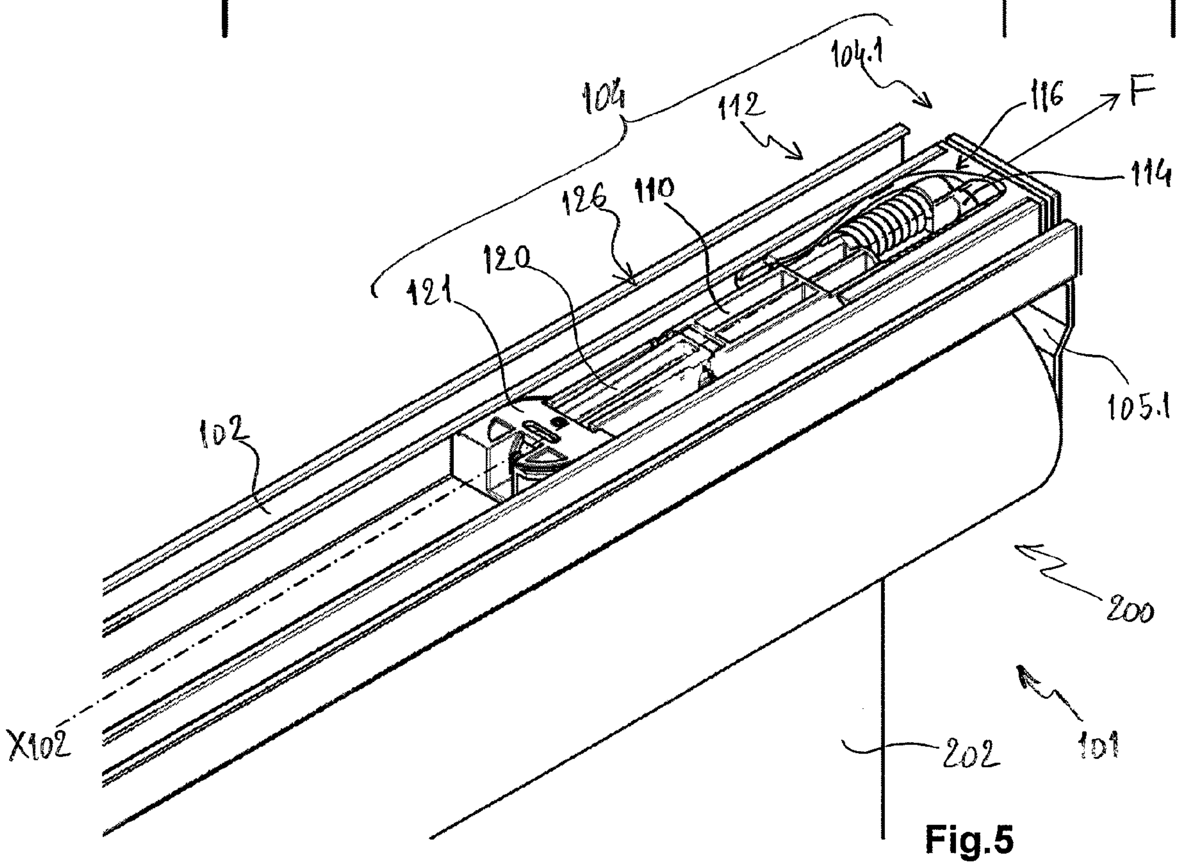

V
101
102
106
105.2
110
105.1
200
202

Fig.4


104
104.1
116
F
112
114
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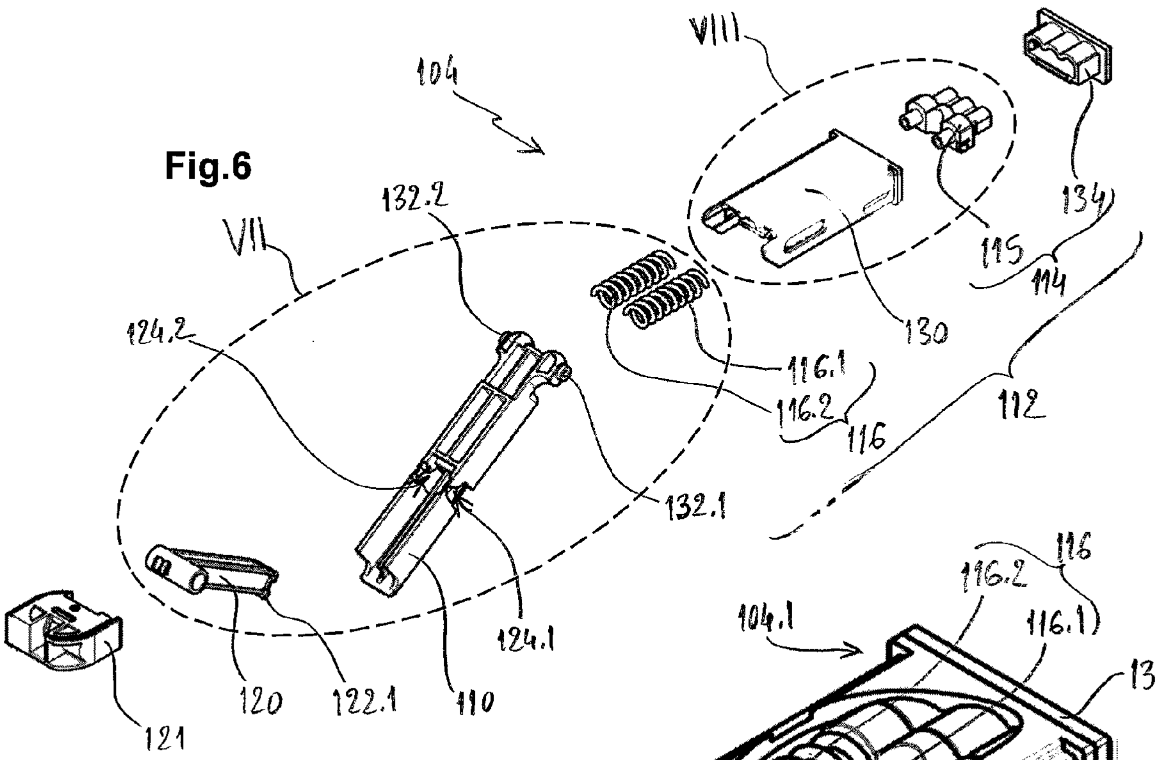
200
X102
202
101

Fig.5

Fig.6


104
VIII
132.2
VII
124.2
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112
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134
115
114
130
120
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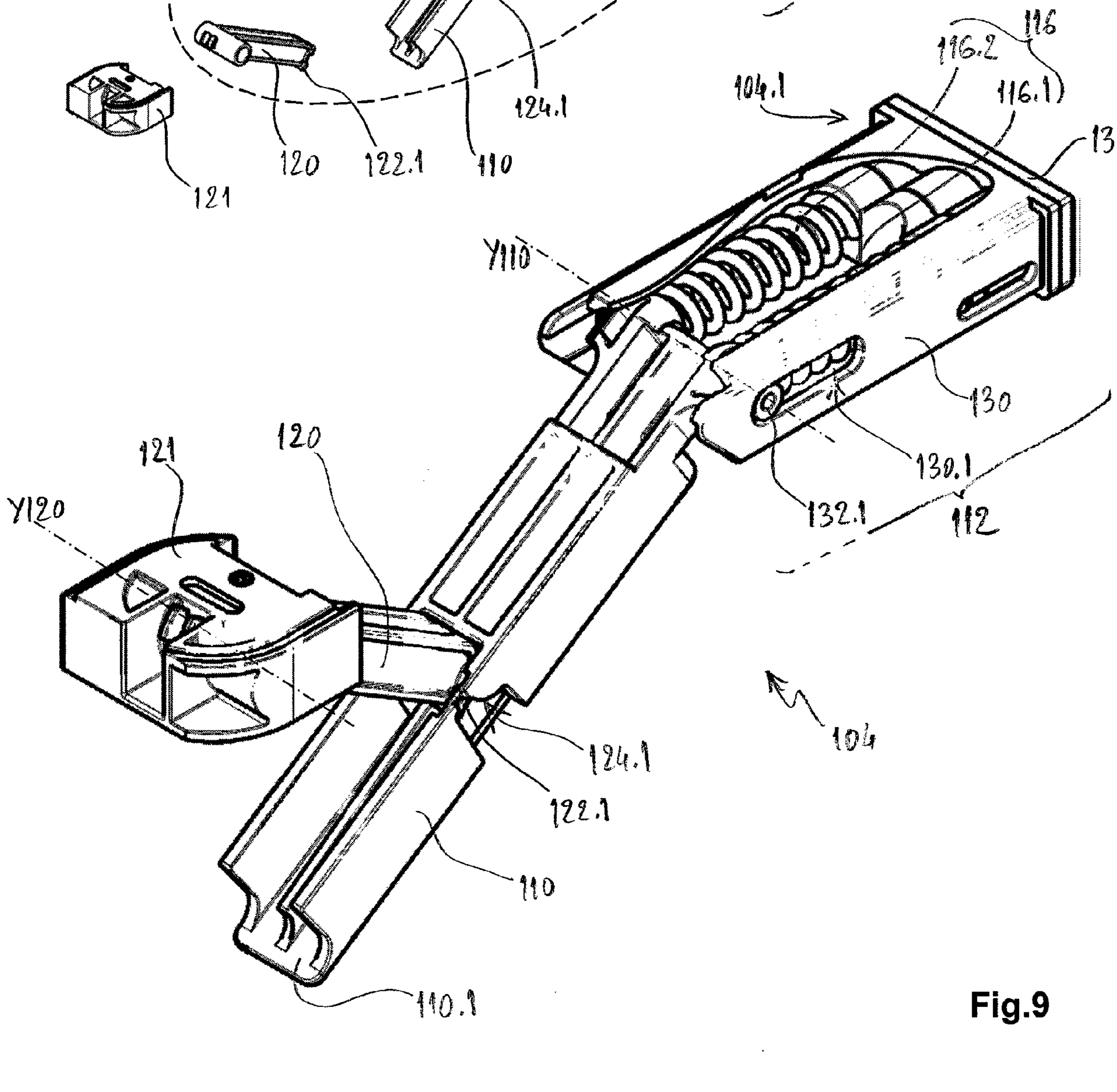
110
124.1
121


116
116.2
116.1
104.1
134
Y110
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130.1
132.1
112
121
120
Y120
104
124.1
122.1
110
110.1

Fig.9

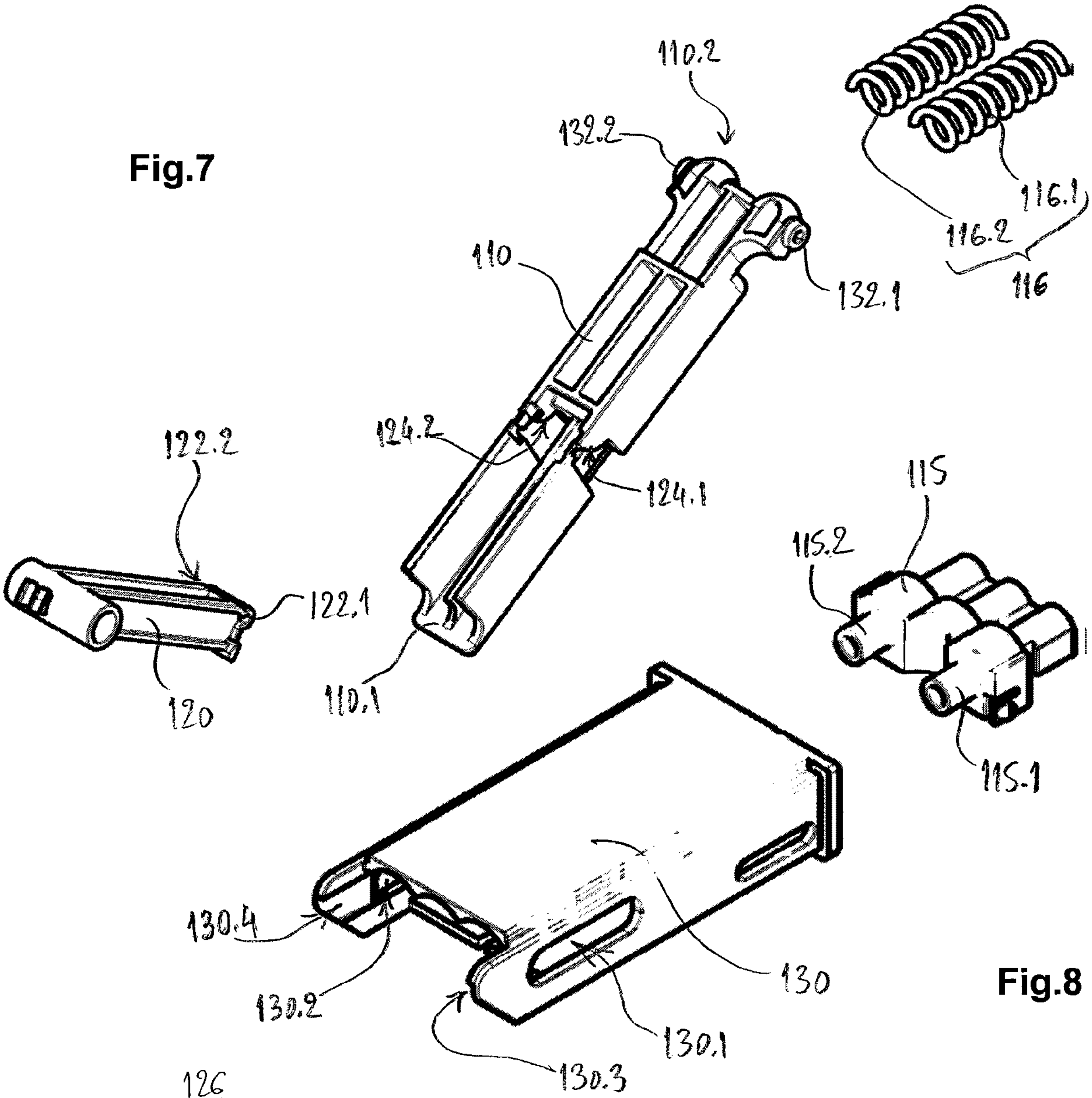


Fig.7

Fig.8

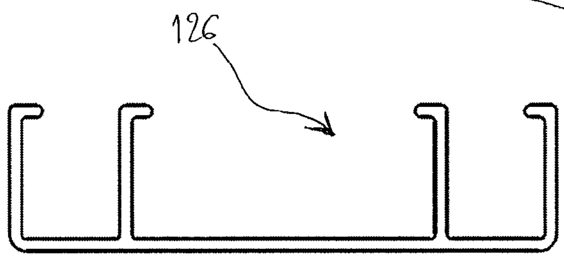


Fig.11

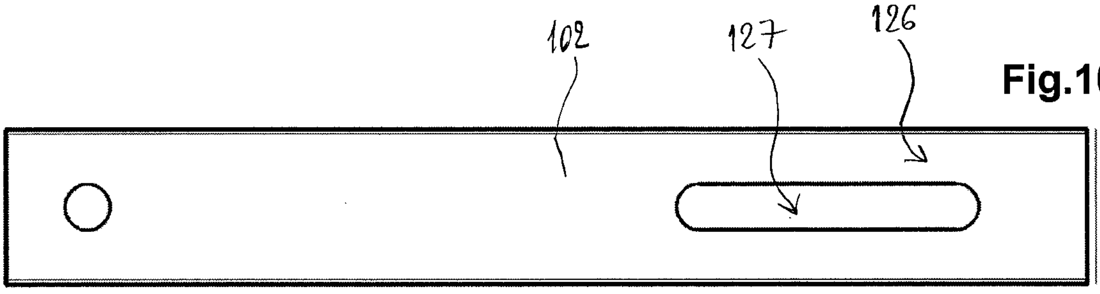
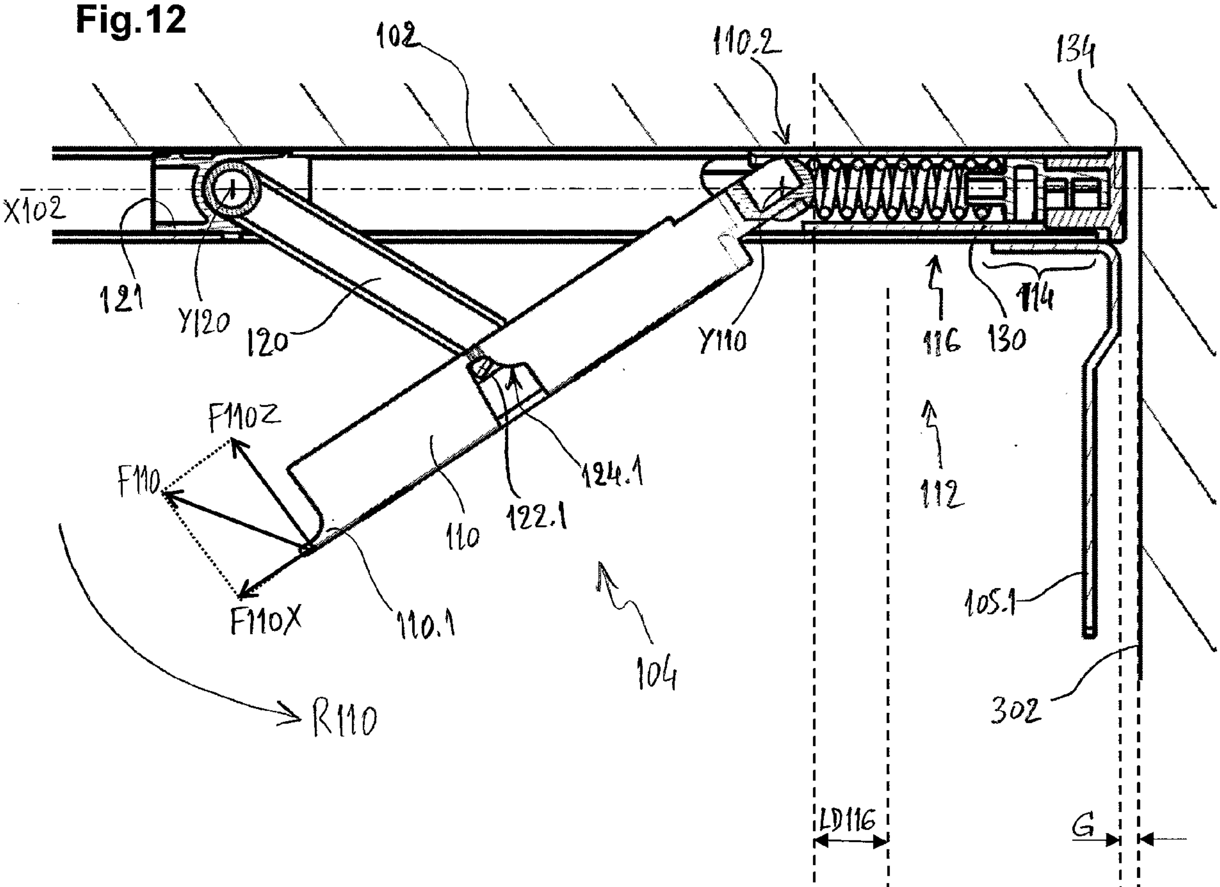


Fig.10

Fig.12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R110
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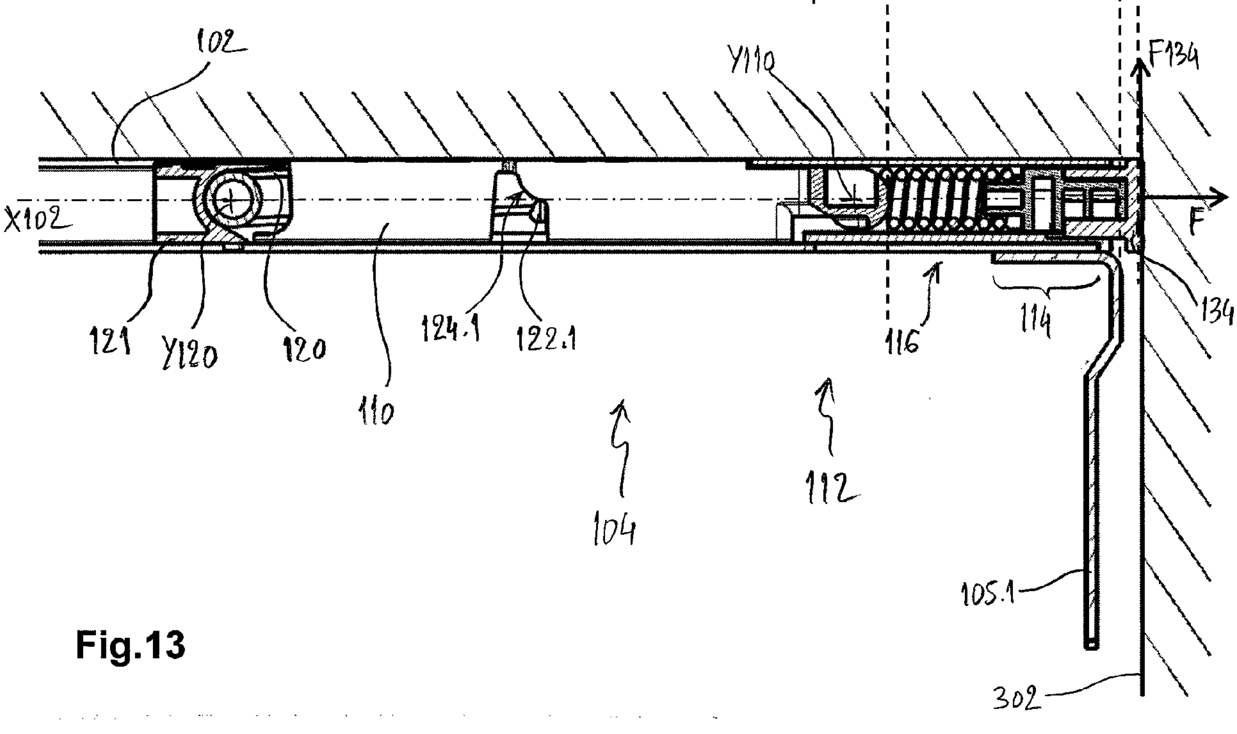
G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105.1
302

Fig.13

Fig.14

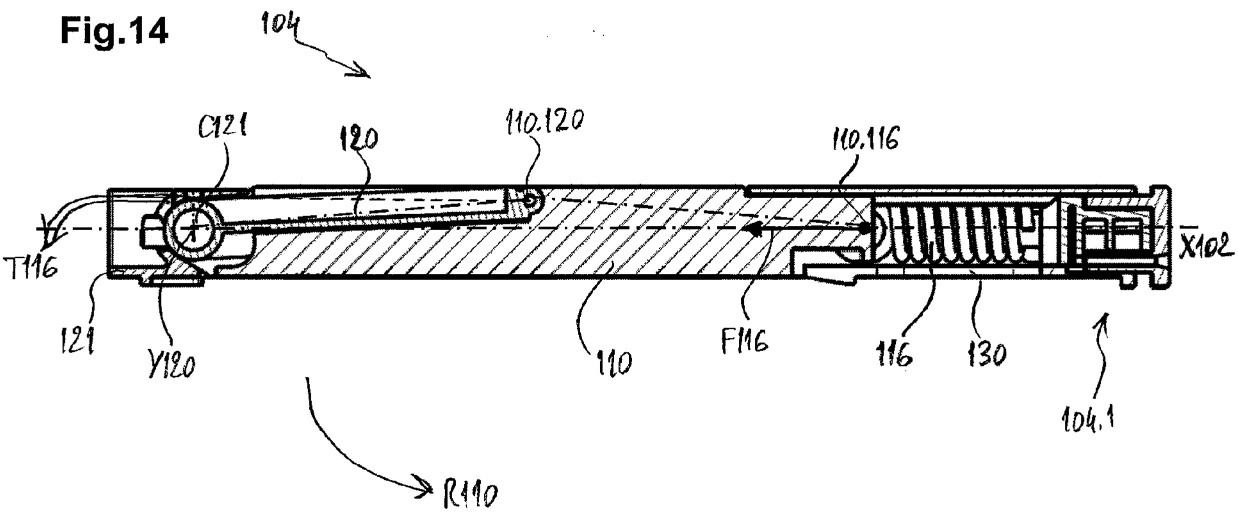


Fig.15

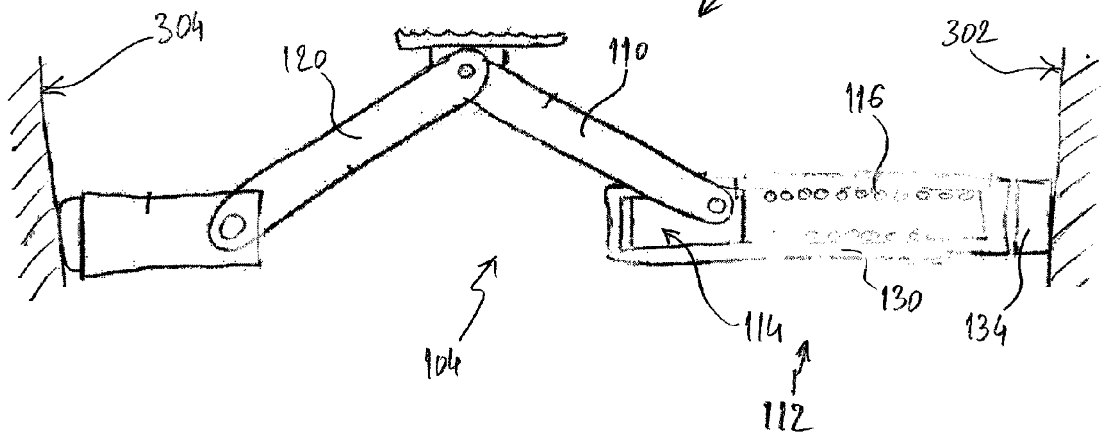


Fig.16

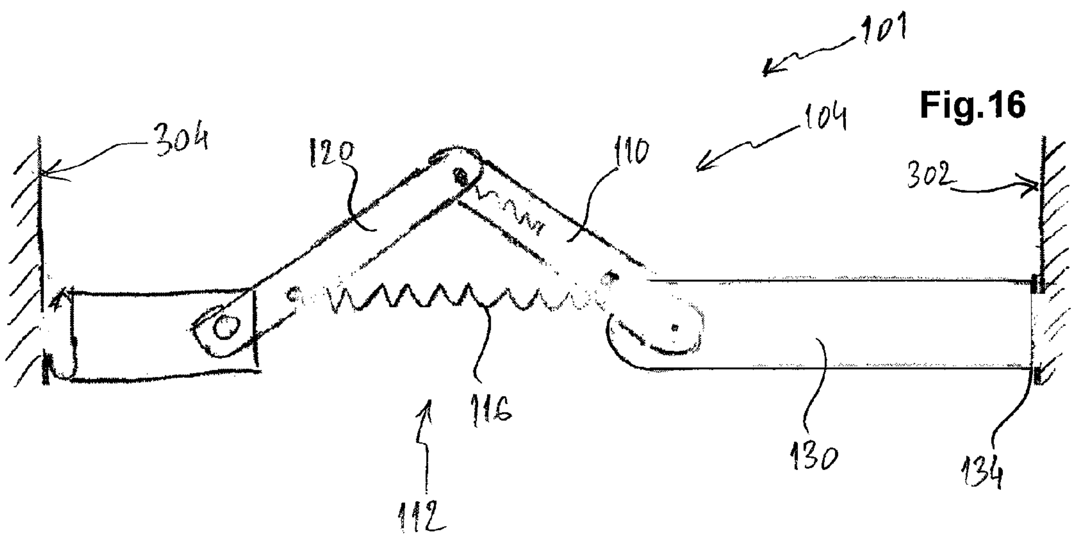
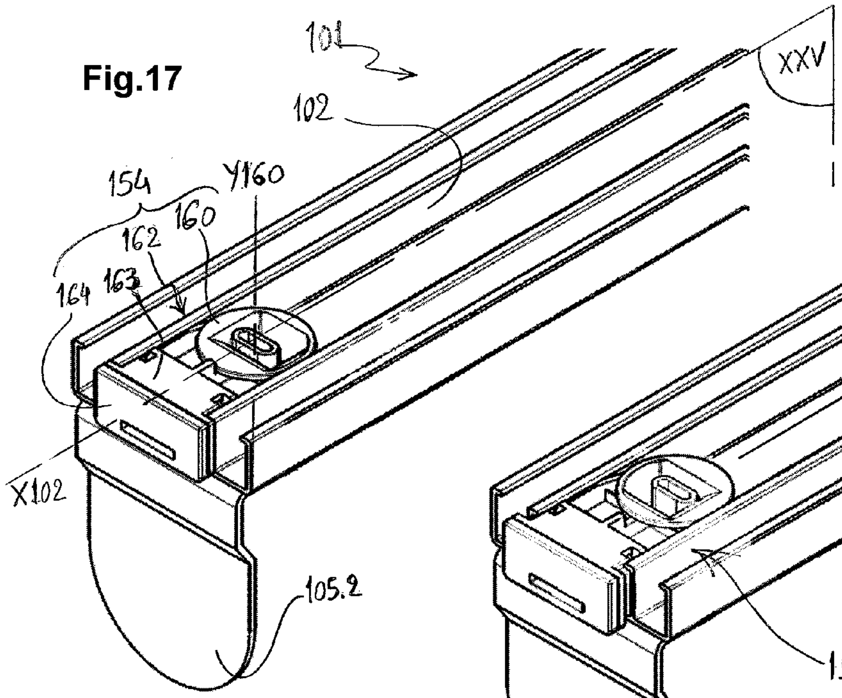


Fig.17



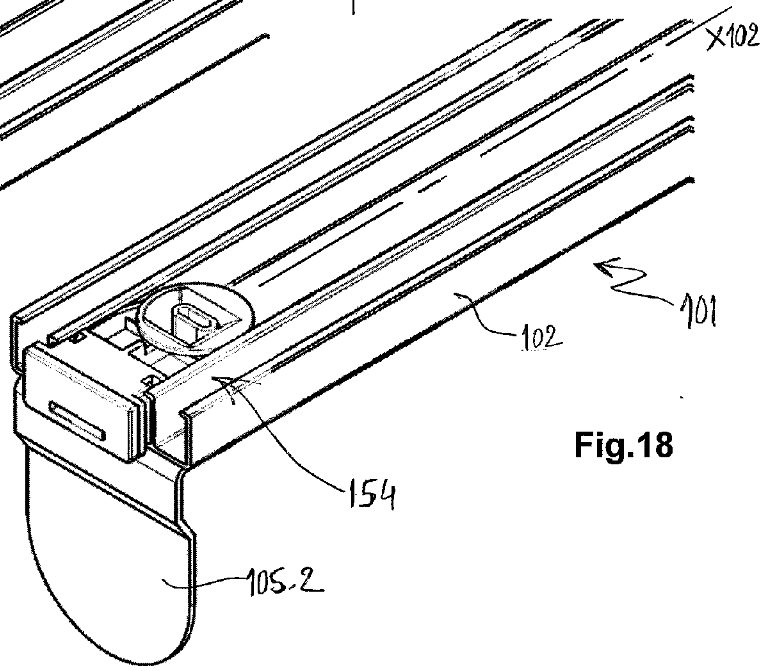
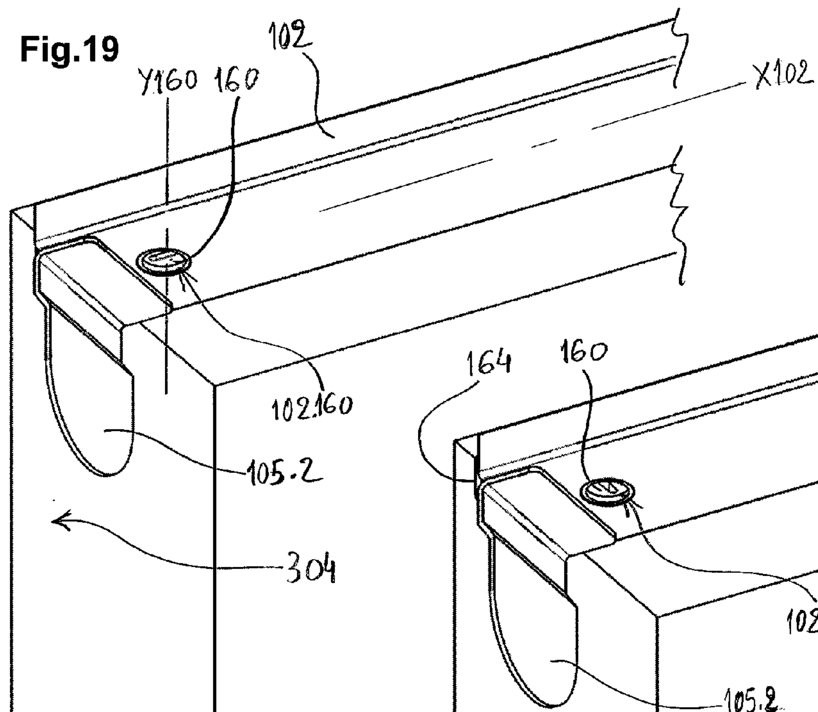


Fig.18

Fig.19



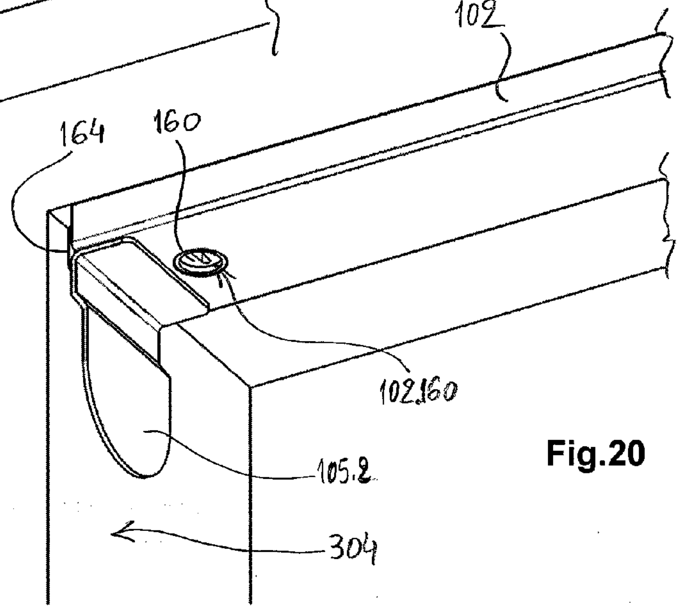


Fig.20

Fig.21

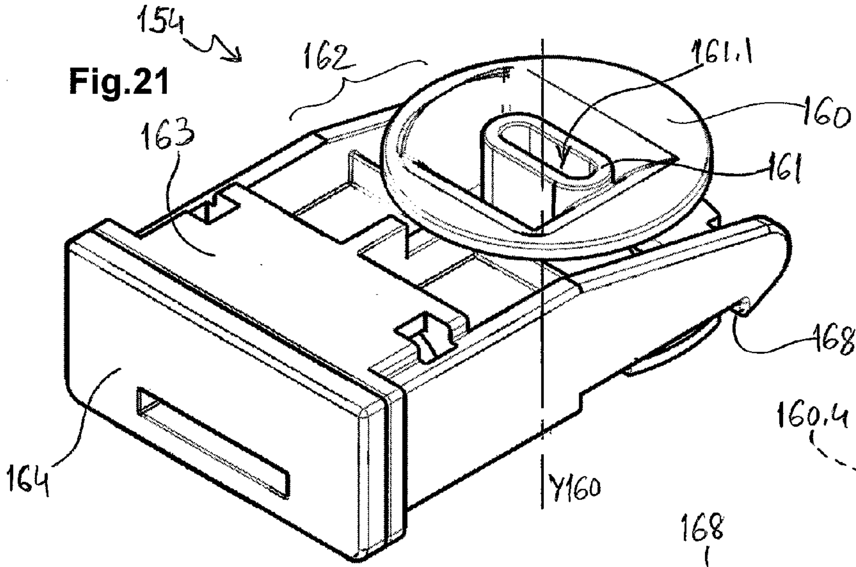
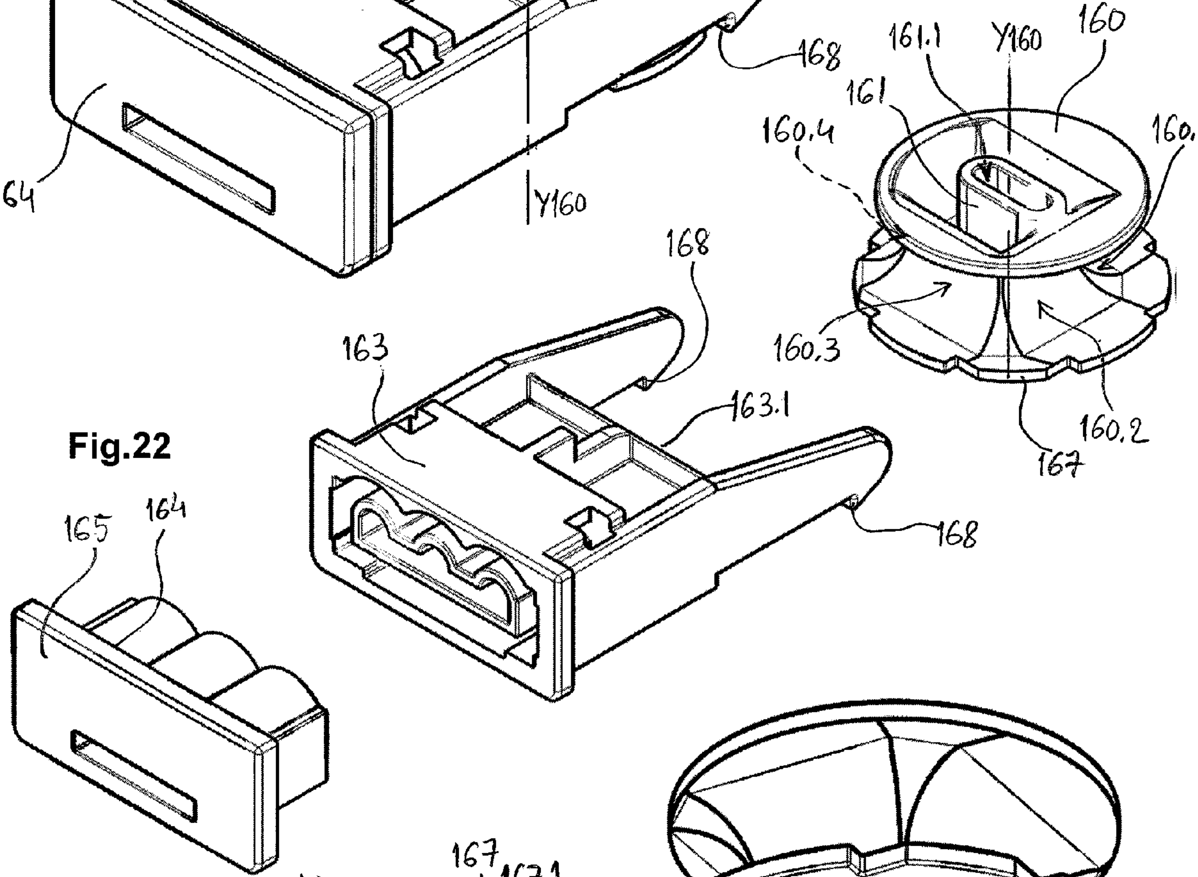
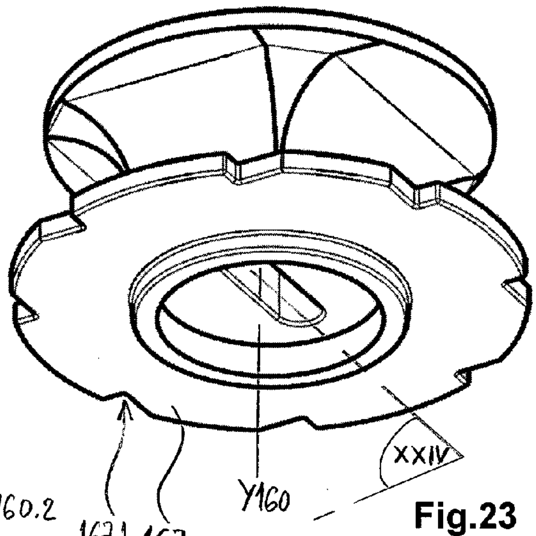


Fig.22





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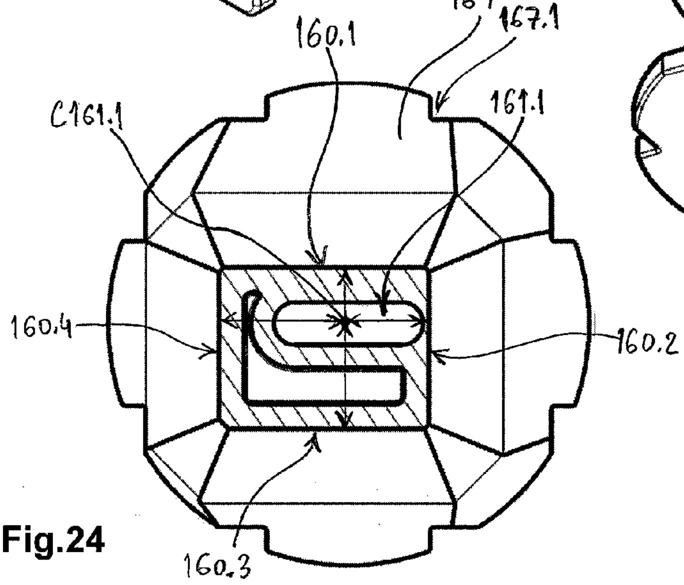


Fig.24

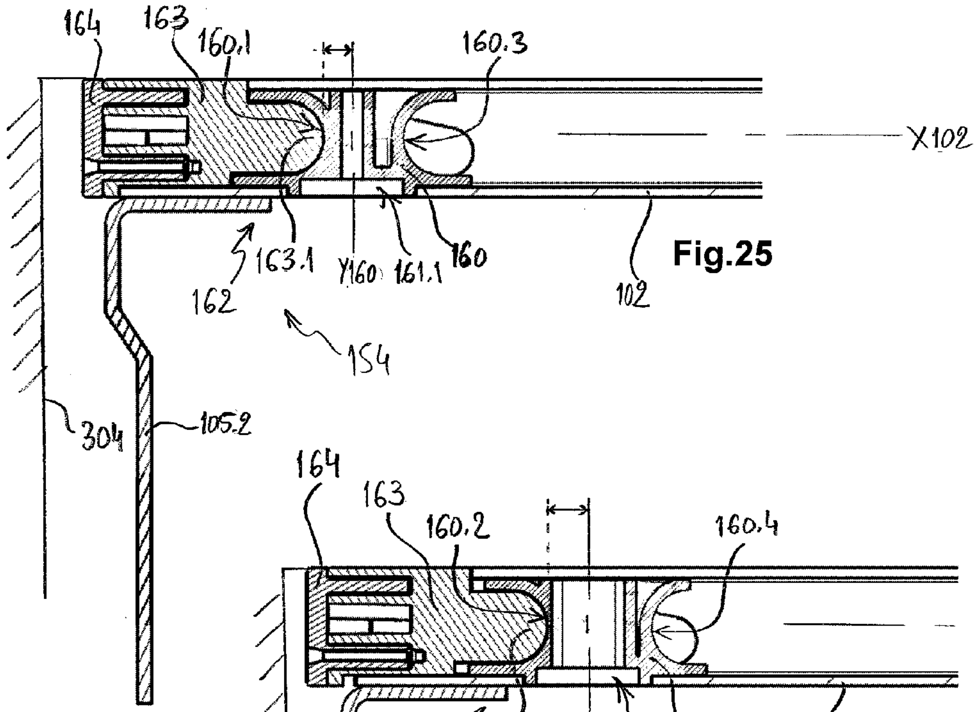


Fig.25

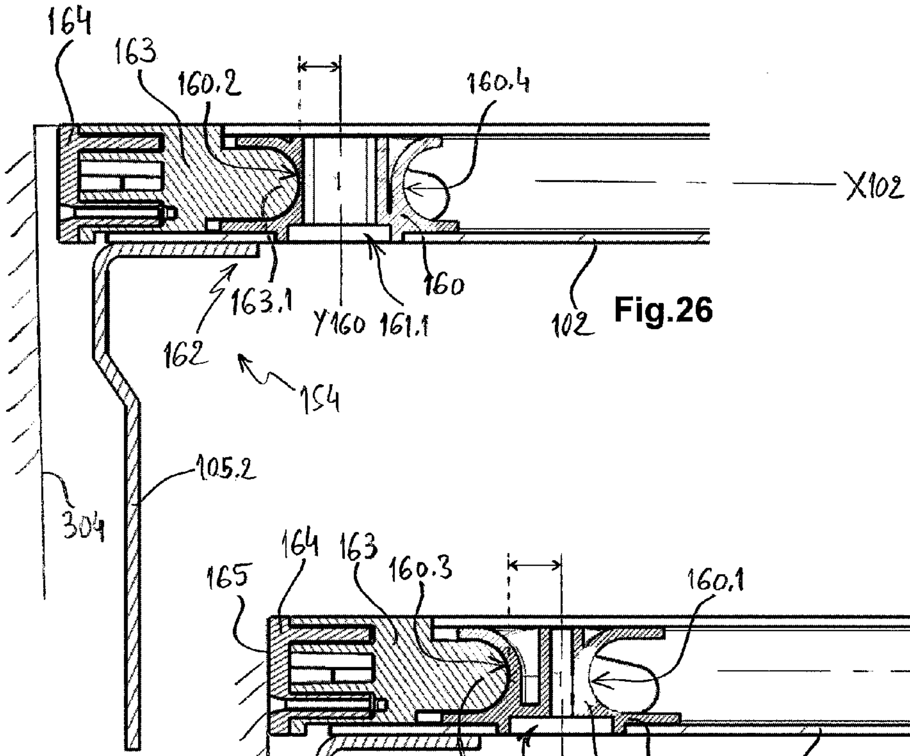


Fig.26

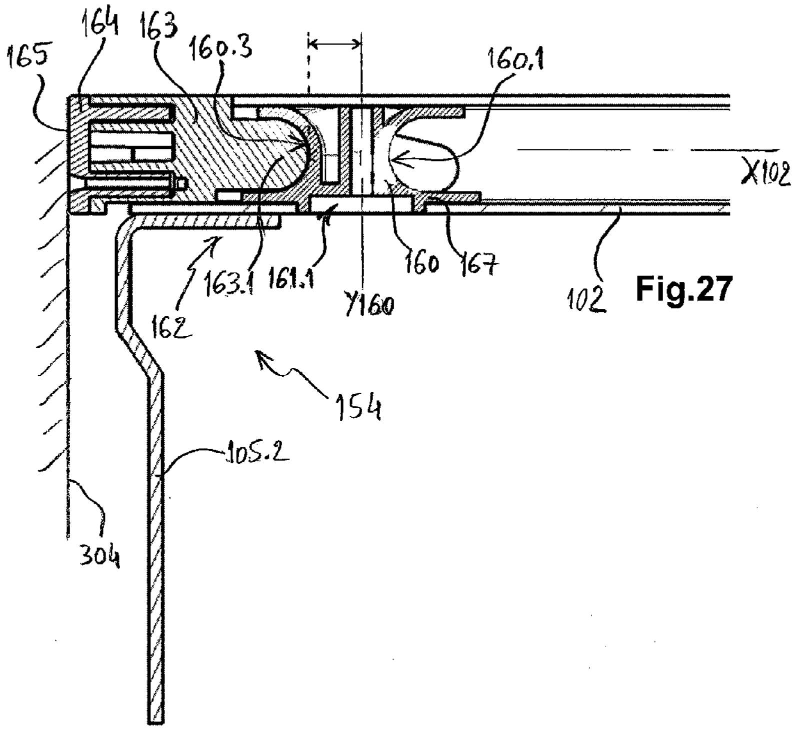
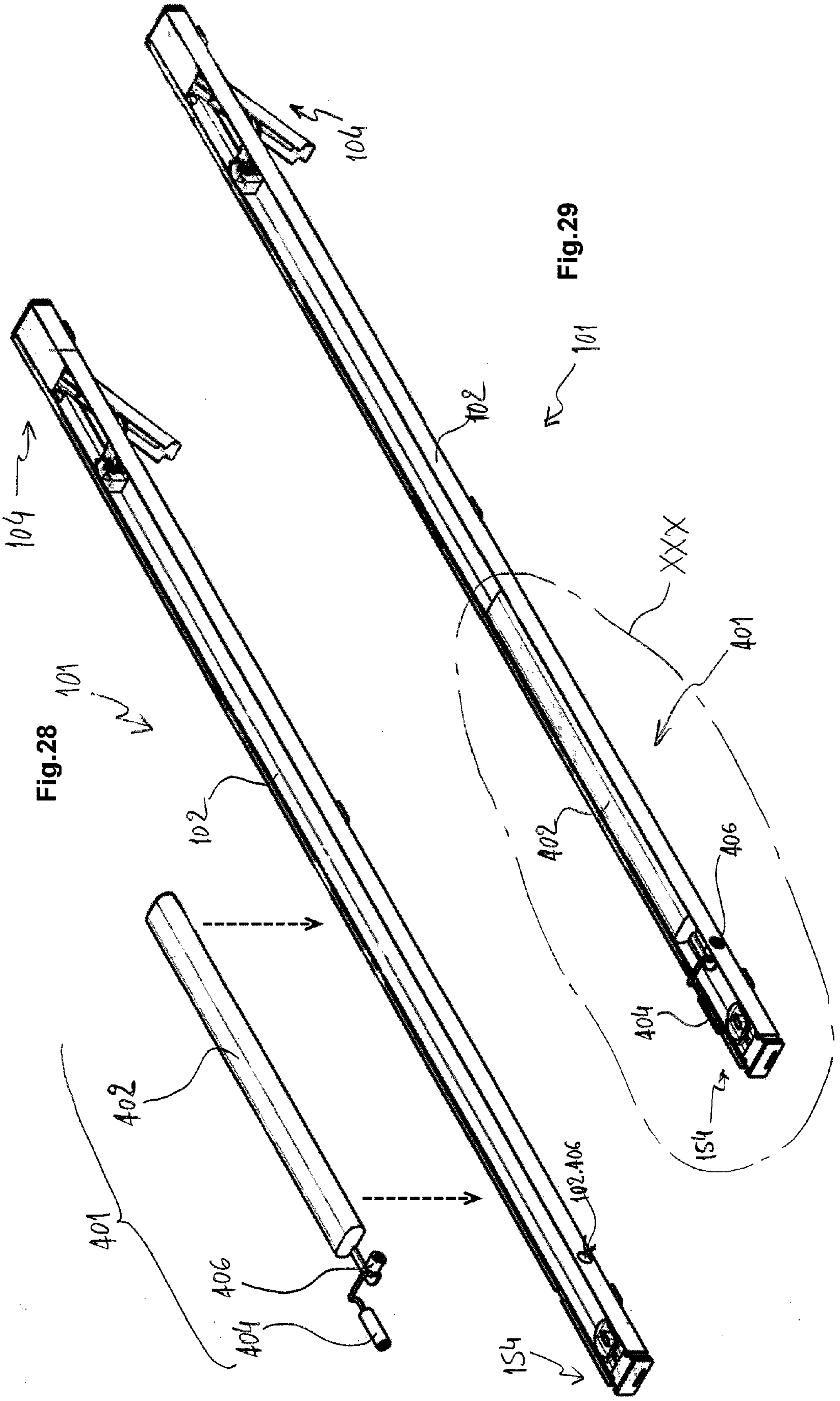


Fig.27


104
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154
Fig.28
Fig.29

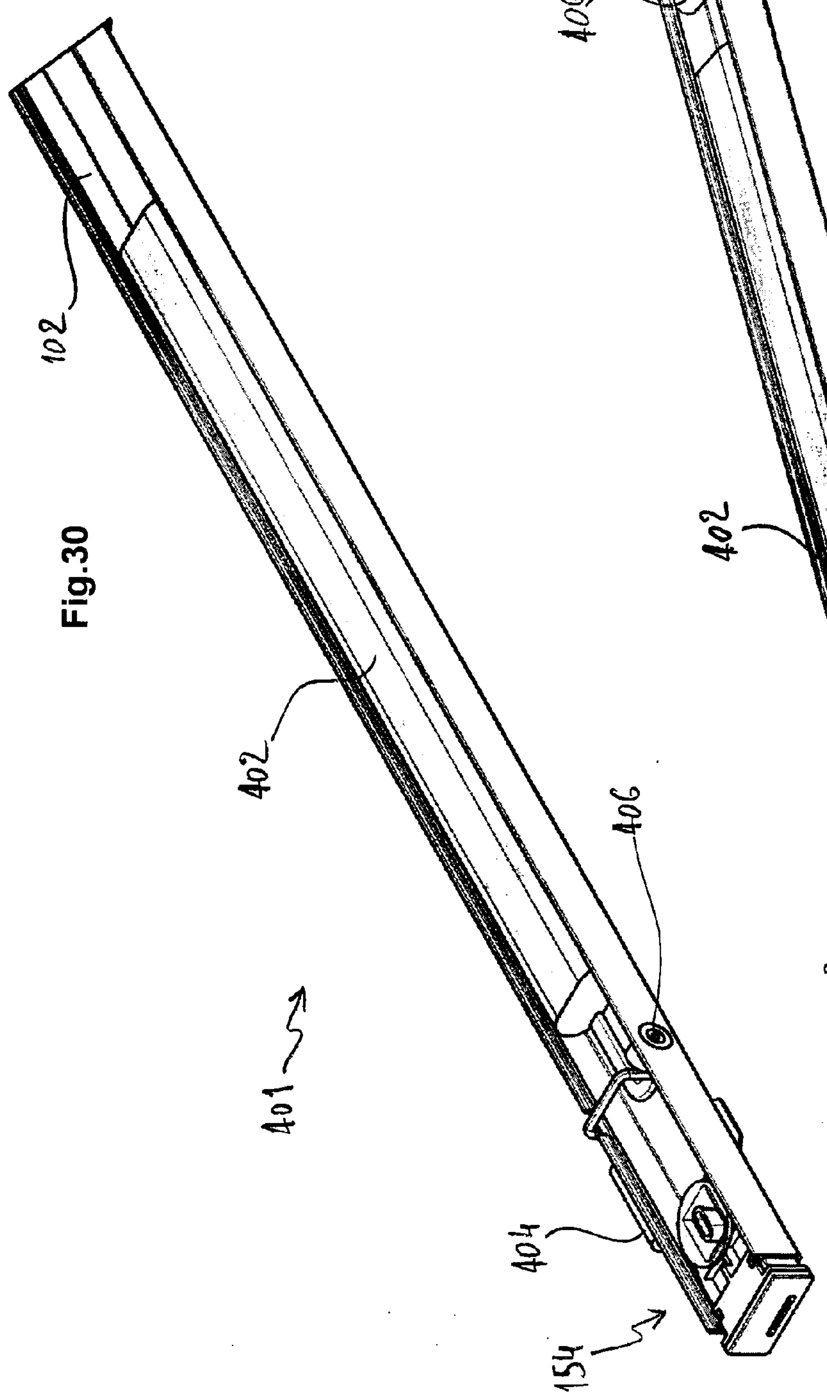

Fig.30

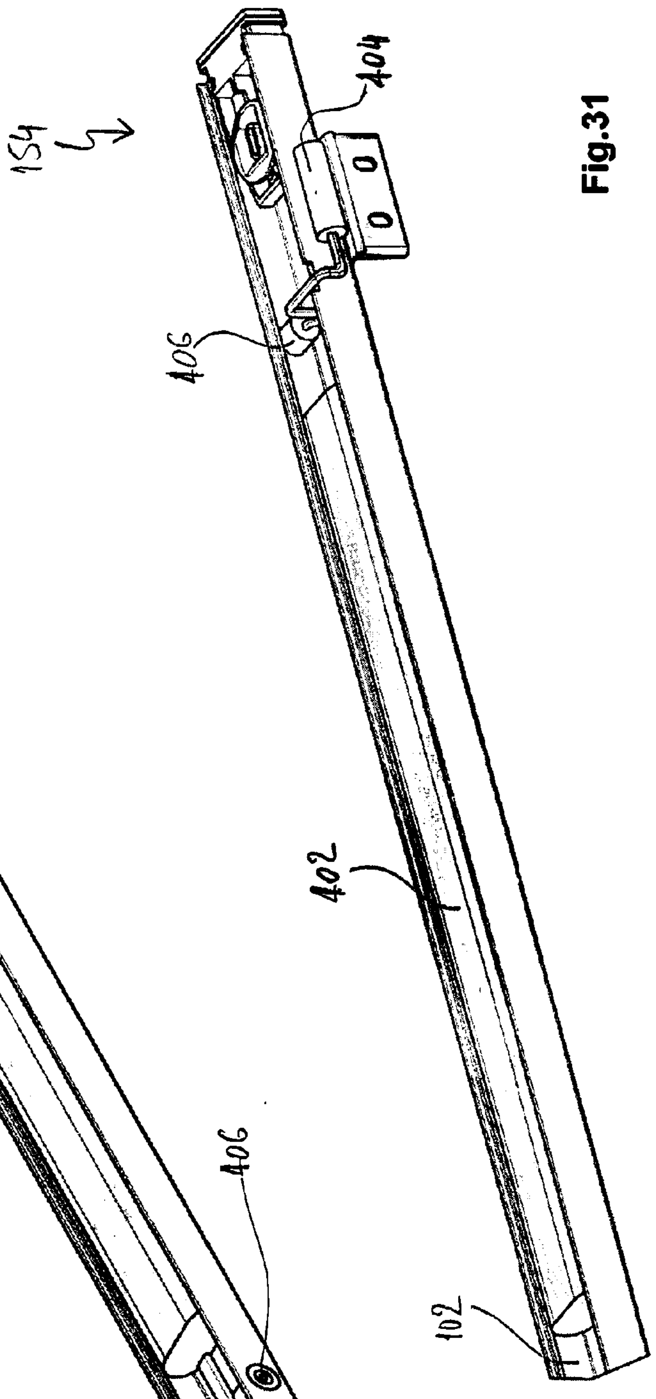

Fig.31

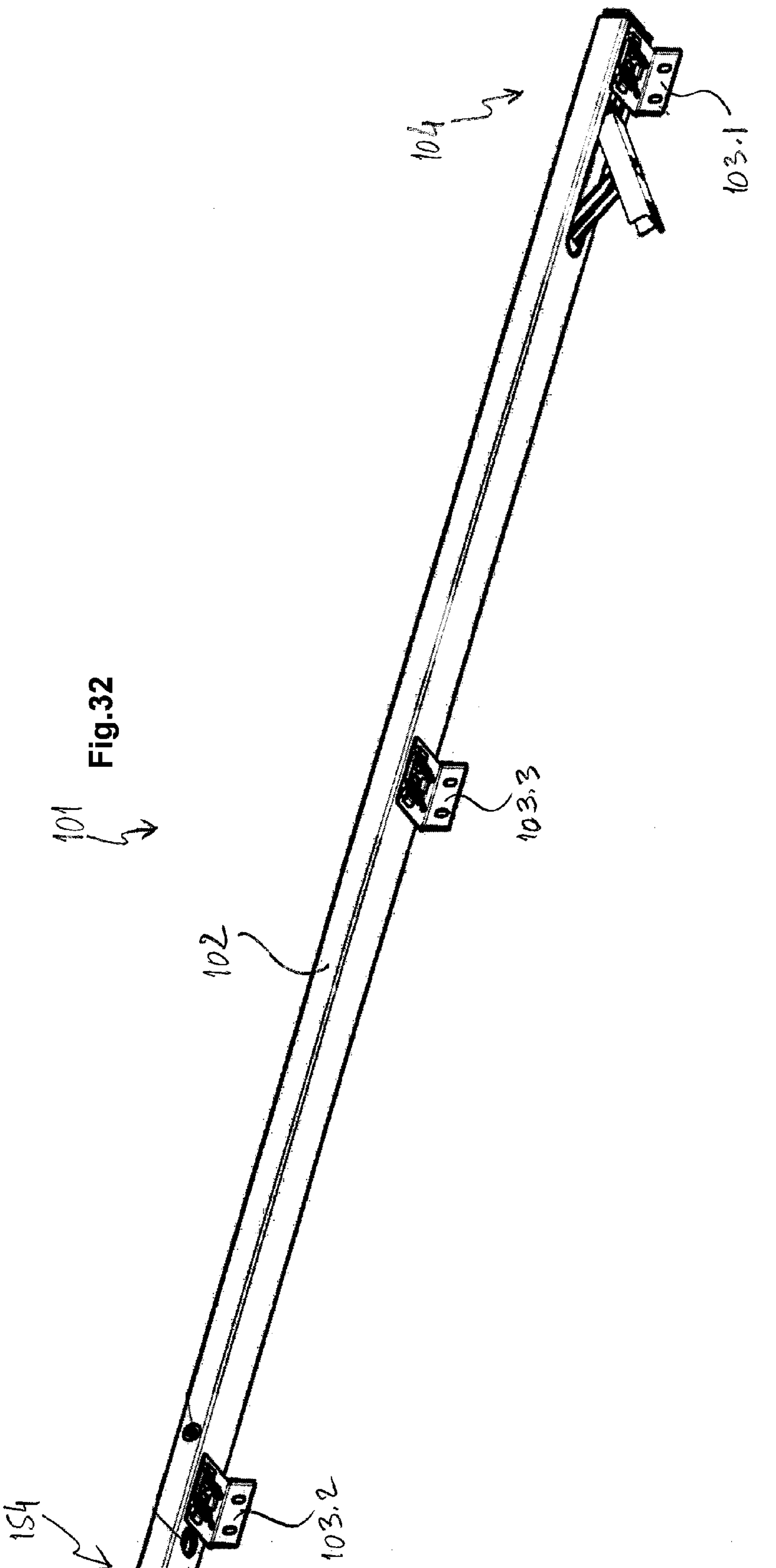

Fig.32

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EUROPEAN SEARCH REPORT

Application Number
EP 17 15 9407

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	US 2009/242143 A1 (PHAM DUNG VIET [CA]) 1 October 2009 (2009-10-01) * abstract; figures 2,3 * * paragraph [0020] *	1-4, 10-15 5-9	INV. E06B9/42 E06B9/323 A47H27/00
X	US 4 782 882 A (AMEDEO JOSEPH [US] ET AL) 8 November 1988 (1988-11-08) * abstract; figures 2,3,5 *	1,2,4, 11-15	

TECHNICAL FIELDS SEARCHED (IPC)
E06B
A47H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 June 2017	Cornu, Olivier

2

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30-06-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009242143 A1	01-10-2009	NONE	
US 4782882 A	08-11-1988	NONE	

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Patent documents cited in the description

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