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(54) **Outwardly opening window or door assembly**

Nach Außen öffnende Fenster- oder Türanordnung

Ensemble de fenêtre ou porte ouvrant vers l'extérieur

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(73) Proprietor: **VKR Holding A/S**
2970 Hørsholm (DK)

(72) Inventors:
• **Mikkelsen, Søren Martin**
6950, Ringkøbing (DK)
• **Christensen, Niels Peter**
6950, Ringkøbing (DK)

(74) Representative: **Olsen, Lau Lund**
Zacco Denmark A/S
Hans Bekkevolds Allé 7
2900 Hellerup (DK)

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Description

[0001] The present invention relates to an outwardly opening window or door assembly comprising a frame and a sash carrying a window pane or door leaf and being mounted in the frame movable between an open position, a ventilation position and a closed position, a locking device being mounted in a cavity of a sash member of the sash, the locking device comprising at least one displaceable locking element in the form of an espagnolette bolt extending along an outer edge of the sash member comprising the locking device, and the locking device comprising a handle adapted to displace the locking element between a locked position, in which an engagement portion of the espagnolette bolt engages a corner striking plate of the window or door assembly mounted at a corresponding corner of the frame, and an unlocked position, in which the engagement portion of the espagnolette bolt is disengaged from the corner striking plate, the corner striking plate comprising a first recess adapted for engagement with the engagement portion of the espagnolette bolt in the ventilation position of the window or door assembly and a second recess being adapted for engagement with the engagement portion of the espagnolette bolt in the closed position of the window or door assembly.

[0002] In known outwardly opening window or door assemblies, a ventilation position of the window or door is obtained by providing a striking plate with a first and a second recess, so that an espagnolette bolt may engage the first recess in the ventilation position and the second recess in the closed position. However, especially in the case of a slim frame and sash construction, the space available for the striking plate may be limited and therefore result in a weak construction. Consequently, it may be difficult to obtain the required strength against an attempted break-in.

[0003] GB 2 439 212 A discloses a window or door assembly according to the preamble of claim 1 comprising an espagnolette locking system with deadbolt. The system may be provided with a so-called night-vent plate providing a ventilating position for the window or door.

[0004] The object of the present invention is to provide an outwardly opening window or door assembly with a ventilation position, whereby improved strength against break-in is provided.

[0005] In view of this object, the engagement portion of the espagnolette bolt is split up into a first and a second end bolt spaced in a direction perpendicular to a general plane of the window pane or door leaf, so that, in the closed position of the window or door assembly, the first end bolt may engage the first recess of the corner striking plate, and the second end bolt may engage the second recess of the corner striking plate, and so that, in the ventilation position of the window or door assembly, the second end bolt may engage the first recess of the corner striking plate.

[0006] Thereby, in the closed position of the window

or door assembly, an improved strength of the engagement between the espagnolette bolt and the corner striking plate may be obtained in that two separate end bolts each engages a corresponding recess of the corner striking plate.

[0007] In an embodiment, the first and the second end bolts of the engagement portion of the espagnolette bolt, in the locked position, extend through an opening formed by a separate cover bracket mounted on the sash. Thereby, improved strength against break-in may be provided, as the separate cover bracket may reinforce the first and the second end bolts of the engagement portion in the closed position of the window.

[0008] In a structurally advantageous embodiment, the first and the second end bolts are guided by the separate cover bracket. Thereby, improved functionality may be obtained.

[0009] In an embodiment, a separate corner bracket is mounted at a corner of the sash, and the separate corner bracket has a recess that is suitable for guiding a flexible band connecting the espagnolette bolt and an actuation arm, such as a brake actuation arm, arranged displaceably along an outer edge of a sash member that, at the corner of the sash, is connected to the sash member that comprises the locking device. Thereby, a displacement of the espagnolette bolt may be transferred around the corner to an actuation arm, even though little space may be available.

[0010] In an embodiment, an actuation arm, such as a brake actuation arm, is arranged displaceably along an outer edge of a sash member that, at a corner of the sash, is connected to the sash member that comprises the locking device, and a flexible band connecting the espagnolette bolt and the actuation arm is arranged between the first and the second end bolts of the engagement portion of the espagnolette bolt. Thereby, a displacement of the espagnolette bolt may be transferred around the corner to an actuation arm, even though very little space may be available. By arranging the flexible band between the first and the second end bolts of the engagement portion of the espagnolette bolt, the flexible band may bend around the corner at a suitably large radius in order to provide for a smooth operation of the locking device.

[0011] In a structurally advantageous embodiment, the engagement portion of the espagnolette bolt has the form of a fork head composed by the first and the second end bolts and a connecting piece connecting the first and the second end bolts, and the flexible band is connected to the connecting piece.

[0012] In an embodiment, a first end of the flexible band is connected to the connecting piece by abutting a side of the connecting piece facing away from the window pane or door leaf. Thereby, the flexible band may bend around the corner at a suitably even larger radius in order to provide for a smooth operation of the locking device.

[0013] In a structurally advantageous embodiment easy to assemble, the first end of the flexible band is

provided with a through hole in which a protrusion on the connecting piece is engaged.

[0014] In an embodiment, a second end of the flexible band is connected to the actuation arm by abutting a side of the actuation arm facing away from the window pane or door leaf. Thereby, the flexible band may bend around the corner at a suitably even larger radius in order to provide for a smooth operation of the locking device.

[0015] In a structurally advantageous embodiment easy to assemble, the second end of the flexible band is preferably provided with a through hole in which a protrusion on the actuation arm is engaged.

[0016] In a structurally advantageous embodiment, the flexible band is guided around the corner of the window sash by means of a separate guide piece mounted on the sash, and the separate guide piece forms a smoothly curved path for the flexible band. Thereby, a displacement of the espagnolette bolt may be transferred smoothly around the corner to the actuation arm, even though little space may be available.

[0017] In a structurally advantageous embodiment easy to assemble, the separate guide piece has the form of a substantially L-shaped element provided with a smoothly curved recess forming a part of the smoothly curved path, the smoothly curved recess being formed where the legs of the substantially L-shaped element meet each other, in the outward facing sides of the legs, and a covering element is preferably provided that fits into the smoothly curved recess in order to form another part of the smoothly curved path and in order to cover the flexible band. Thereby, a displacement of the espagnolette bolt may be transferred smoothly around the corner to the actuation arm, even though little space may be available.

[0018] In a structurally advantageous embodiment easy to assemble, the flexible band is provided with an elongated hole through which a bolt or the like extends and connects the covering element to a bottom of the smoothly curved recess of the substantially L-shaped element.

[0019] In an embodiment easy to manufacture and easy to assemble, the separate guide piece has the form of two abutting, symmetrically formed parts that are closed around the flexible band, and the two symmetrically formed parts are preferably injection moulded and preferably mutually connected by means of a film hinge.

[0020] In an embodiment easy to assemble, the engagement portion of the espagnolette bolt has the form of a separate element connected to the espagnolette bolt by means of a click-lock mechanism.

[0021] In a structurally advantageous embodiment easy to assemble, the click-lock mechanism is composed by means of a first substantially mushroom-like part and a second part having a first and a second leg, and at least one of the legs of the second part is provided with a protrusion adapted to grip under a head of the mushroom-like part.

[0022] In an embodiment, only the first leg of the sec-

ond part is provided with a protrusion adapted to grip under the head of the mushroom-like part. Thereby, the engagement portion may be snap-connected to the espagnolette bolt even though it may be located in a narrow groove of the window or door sash, because with a protrusion on only the first leg, less lateral displacement of the legs is required during the snap-connection operation.

[0023] In an embodiment, the cross section of the espagnolette bolt has a rectangular shape with one dimension being larger than the other dimension, so that the larger dimension of the cross section is arranged perpendicular to the general plane of the window pane or door leaf. In this way, the bolts do not protrude out from the sash very much. Furthermore, since the large dimension of the cross section of the bolts is arranged perpendicular to the general plane of the window or door assembly, the strength of the bolt in the direction which would be exposed to large forces during an attempted break-in will be very large.

[0024] In a structurally advantageous embodiment easy to assemble, the espagnolette bolt is guided along the sash member by means of at least one bolt mounted in the sash member, the bolt extends through an elongated hole in the espagnolette bolt, and the bolt is provided with a head having a larger diameter than the width of the elongated hole.

[0025] In an embodiment, the corner striking plate comprises a first flange comprising the first and the second recess for engagement with the engagement portion of the espagnolette bolt and a second flange being mounted to a surface of both frame members connected at the corner. As the corner striking plate is attached to both frame members at the corner, the strength of the joint is increased, and the forces applied to the striking plate are allowed to be split between the two frame members.

[0026] In an embodiment, the second flange comprises a first and a second plate member arranged at right angles to each other and being fixed to separate frame members, respectively. Due to the arrangement of the corner striking plate, in the case where the window or door assembly is attempted to be forced open, the corner striking plate may bend such that it is even more locked.

[0027] The invention will now be explained in more detail below by means of examples of embodiments with reference to the very schematic drawing, in which

Fig. 1 show perspective illustrations of a window or door assembly according to the current invention, whereby Fig. 1A is a small-scale figure indicating the complete window or door assembly, and Fig. 1B is a large-scale figure showing the fittings only, and whereby the locking device is in the locked position.

Fig. 2 shows a perspective view of the upper corner striking plate shown in Fig. 1,

Fig. 3 shows a perspective view of the lower corner striking plate shown in Fig. 1,

Figs. 4 shows a perspective view of a detail illustrating the first and the second end bolts of the engagement portion of the upper espagnolette bolt in the unlocked position,

Figs. 5 shows a perspective view of a detail illustrating the first and the second end bolts of the engagement portion of the upper espagnolette bolt in the locked position shown in Fig. 1,

Fig. 6 shows a perspective view of an embodiment of a part of the sash and fittings of the window or door assembly according to the invention,

Fig. 7 shows a perspective view of part of the upper espagnolette bolt and fittings of the embodiment shown in Fig. 6, whereby the sash has been removed,

Fig. 8 shows a perspective, partly exploded view of part of the upper espagnolette bolt and fittings of the embodiment shown in Fig. 6, whereby the sash has been removed,

Fig. 9 shows a perspective view of a cover bracket in the form of a separate guide piece of the embodiment shown in Fig. 6, seen from above,

Fig. 10 shows a perspective view the cover bracket in Fig. 9, seen from below,

Fig. 11 shows a perspective view of another embodiment of the sash and fittings of the window or door assembly according to the invention,

Fig. 12 shows a perspective view of the espagnolette bolts and fittings of the embodiment shown in Fig. 11, whereby the sash has been removed,

Fig. 13 shows a front view of a detail of the snap-connection between the espagnolette bolt and its engagement portion,

Fig. 14 shows a side view of the espagnolette bolts and fittings of the embodiment shown in Fig. 11, whereby a separate cover bracket and a separate guide piece have been removed,

Fig. 15 shows a front view of the espagnolette bolts and fittings in Fig. 14,

Fig. 16 shows a perspective, partly exploded view of the espagnolette bolts and fittings of the embodiment shown in Fig. 12,

Fig. 17 shows a perspective view of a separate guide piece of the embodiment shown in Fig. 12,

Fig. 18 shows a front view of the separate guide piece shown in Fig. 17, before assembly,

Fig. 19 shows a perspective view of the separate guide piece shown in Fig. 18, before assembly, and

Fig. 20 shows a perspective view of a separate cover bracket of the espagnolette bolts and fittings in Fig. 12.

Fig. 1 shows an outwardly opening side hinged window assembly 1 according to the current invention. However, the invention is likewise applicable to a door assembly. The window or door assembly comprises a frame 2 made up of four frame elements or members 2a, 2b, 2c, 2d connected together with mitre joints, a sash 3 made up of four sash elements 3a, 3b, 3c, 3d connected together with mitre joints and a triple glazed pane of glass 4 arranged inside the sash 3. Two corner hinges 5 and a centre hinge 6 connect the sash 3 to the frame 2.

[0028] A locking device 7 forming part of an espagnolette mechanism is mounted in a cavity of a sash member of the sash and is used to lock the sash in a closed position or in a ventilation position, respectively. Furthermore, the locking device may activate a window brake in order to maintain the sash in an open position. The locking device 7 is adapted to displace two displaceable locking elements in the form espagnolette bolts 8a, 8b outwards in opposite directions such that they protrude from the outer edges of the sash. The locking device 7 also comprises two mushroom cams 9 which are also displaced outwards in opposite directions when the locking device is locked. The espagnolette bolts 8a, 8b engage with corner striking plates 10, which are mounted at the corners of the frame, when the window or door assembly is closed or brought to the ventilation position, and the locking device is in its locked position, and the mushroom cams 9 engage with a centre striking plate 11 mounted at the centre of a frame element 2b when the window or door assembly is closed and the locking device is in its locked position. In this way, the window or door can be locked in a slightly open position or it can be locked in a fully closed position. Fig. 1 shows the window assembly in its open position and the locking device in its locked position.

[0029] The locking device 7 comprises a handle 13 adapted to displace the espagnolette bolts 8a, 8b between the locked position, in which an engagement portion 14 of the espagnolette bolt 8a, 8b engages the corner striking plate 10 mounted at a corresponding corner of the frame 2, and an unlocked position, in which the engagement portion of the espagnolette bolt is disengaged from the corner striking plate.

[0030] As it may be seen for instance in Figs. 1 to 3 and 6, the corner striking plate 10 comprises a first recess 15 and a second recess 16 being spaced in a direction perpendicular to a general plane of the window frame 2. Correspondingly, the engagement portion 14 of the espagnolette bolt 8a, 8b is split up into a first end bolt 17 and a second end bolt 18 spaced in a direction perpendicular to the general plane of the window pane 4 or door leaf. Thereby, in the closed position of the window or door assembly, the first end bolt 17 may engage the first recess 15 of the corner striking plate 10, and the second end bolt 18 may engage the second recess 16 of the corner striking plate, and in the ventilation position of the window or door assembly, the second end bolt 18 may engage the first recess 15 of the corner striking plate 10. It should be noted that in the present context, the expression a first recess 15 and a second recess 16 of the corner striking plate should mean any corner striking plate or the like having two distinct engagement positions each adapted to go into engagement with an end bolt. Therefore, although the first recess 15 and the second recess 16 are shown in the figures as being separated holes, they could just as well be separate indents in the edge of one single hole or opening that may, for instance be only partly surrounded by material of the striking plate or the like. Each recess 15, 16 may even be just any kind of stop suitable for engaging an end bolt.

[0031] As it may be seen for instance in Figs. 4 and 5, 6 to 12, 16 and 20, the first and the second end bolts 17, 18 of the engagement portion 14 of the espagnolette bolt 8a, 8b, in the locked position, extend through an opening 19 formed by a separate cover bracket 20 mounted on the sash 3. The first and the second end bolts 17, 18 are preferably guided by the separate cover bracket 20.

[0032] A window or door brake device 12 is mounted on the top sash element 3a and is activated by the displacement of the upper espagnolette bolt 8a of the espagnolette mechanism. The window or door brake device 12 is arranged such that the window or door is held in the open position when the locking device 7 is in the locked position. When the locking device 7 is put into its unlocked position, the window or door brake device 12 allows the sash 3 to freely open and close.

[0033] In the embodiments shown in Figs. 1 to 10, the separate cover bracket 20 has the form of a separate corner bracket 21 that is mounted at a corner of the sash 3 and has a recess 22 that is suitable for guiding a flexible band 23 connecting the espagnolette bolt 8a and an actuation arm, such as a brake actuation arm 24, arranged displaceably along an outer edge of a sash member 3a that, at the corner of the sash, is connected to the sash member 3d that comprises the locking device 7. In the unlocked position shown in Fig. 4, it may be seen that an impression 25 of the brake actuation arm 24 is at a first position near the separate corner bracket 21, and in the locked position shown in Fig. 5, it may be seen that the impression 25 of the brake actuation arm 24 is at a second position further away from the separate corner bracket

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[0034] The flexible band 23 connecting the espagnolette bolt and the brake actuation arm is arranged between the first and the second end bolts 17, 18 of the engagement portion 14 of the espagnolette bolt 8a.

[0035] The engagement portion 14 of the espagnolette bolt has the form of a fork head 26 composed by the first and the second end bolts 17, 18 and a connecting piece 27 connecting the first and the second end bolts, and the flexible band 23 is connected to the connecting piece 27.

[0036] As it is illustrated in Fig. 7 and Figs. 14 to 16, respectively, a first end 28 of the flexible band 23 is connected to the connecting piece 27 by abutting a side 29 of the connecting piece facing away from the window pane 4 or door leaf, and the first end 28 of the flexible band 23 is provided with a through hole 30 in which a protrusion 31 on the connecting piece is engaged. A second end 32 of the flexible band 23 is connected to the brake actuation arm 24 by abutting a side 33 of the actuation arm facing away from the window pane 4 or door leaf, and the second end 32 of the flexible band 23 is provided with a through hole 34 in which a protrusion 35 on the actuation arm 24 is engaged. In the embodiment shown in Figs. 11 to 20, the protrusion 31 on the connecting piece 27 has the form of a bolt.

[0037] As illustrated in Figs. 4 and 5, Figs. 6 to 10, Figs. 11, 12 and Figs. 16 to 19, the flexible band 23 is guided around the corner of the window sash 3 by means of a separate guide piece 36 that is mounted on the sash 3 and forms a smoothly curved path 37 for the flexible band 23.

[0038] In an embodiment of the invention shown in Figs. 4 and 5 and Figs. 6 to 10, the separate guide piece 36 is the same element as the earlier mentioned separate cover bracket 20 and the further mentioned separate corner bracket 21 and has the form of a substantially L-shaped element provided with a smoothly curved recess 38 that forms a part of the smoothly curved path 37 and is formed where the legs of the substantially L-shaped element meet each other, in the outward facing sides of the legs. In the embodiment shown in Figs. 6 to 10, further a covering element 39 is provided that fits into the smoothly curved recess 38 in order to form another part of the smoothly curved path 37 and in order to cover the flexible band 23.

[0039] In another embodiment of the invention shown in Figs. 11 to 20, the separate guide piece 36 has the form of two abutting, symmetrically formed parts 40 that are closed around the flexible band 23. The two symmetrically formed parts 40 are preferably injection moulded and preferably mutually connected by means of a film hinge 41.

[0040] In the embodiment shown in Figs. 11 to 20, the engagement portion 14 of the espagnolette bolt 8a, 8b has the form of a separate element connected to the espagnolette bolt by means of a click-lock mechanism 42, see especially Fig. 13. In this way, the engagement portion 14 could be made from metal and the espagnolette

bolt 8a, 8b could for instance be made from a composite material. The click-lock mechanism 42 is composed by means of a first substantially mushroom-like part 43 and a second part 44 having a first and a second leg 45, 46. Only the first leg 45 of the second part 44 is provided with a protrusion 47 adapted to grip under a head 48 of the mushroom-like part 43. The espagnolette bolt 8a, 8b and the click-lock mechanism 42 is located in a groove 58 of the window sash 3d, and consequently limited space is available for the first 45 and second legs 46 to flex away from each other, when the protrusion 47 is to grip under the head 48. Both legs 45, 46 could be provided with protrusions 47; however, in certain case where the groove 58 is narrower than shown in Fig. 13, this would result in very small protrusions being prone to break off as a result of a rust attack. Therefore, it may be preferred to employ one larger protrusion 47 on only one of the legs. It should be noted that during the snap-connection procedure, the espagnolette bolt 8a, 8b shown in Fig. 13 may be displaced slightly to the left in the figure in order to give place for the larger protrusion 47 to hop over the head 48.

[0041] As can be seen from for instance Figs. 6 and 7, the espagnolette bolts 8a, 8b are arranged as rods having a rectangular cross section. As can be seen the longitudinal axes of the bolts are arranged along the outer edge of the sash element. In the particular embodiment shown in Figs. 6 to 10, the bolts 8a, 8b are arranged visibly on the outer edge of the sash element, whereas in the particular embodiment shown in Figs. 11 to 20, they are integrated inside the sash element covered by a plate member 59. In the case where the bolts are visible, they could be made from the same material as the sash element. This will give a good visual impression.

[0042] The espagnolette bolts 8a, 8b are also arranged such that the cross section of the bolts has a rectangular shape with one dimension being larger than the other dimension, see for instance Figs. 6 and 7. The larger dimension is arranged perpendicular to the general plane of the window or door assembly, and the smaller dimension is arranged parallel to the general plane of the window or door assembly. In this way, the espagnolette bolt does not protrude out from the sash very much. Furthermore, since the large dimension of the cross section of the bolt is arranged perpendicular to the plane of the window or door assembly, the strength of the bolt in the direction which would be exposed to large forces during an attempted break-in will be very large.

[0043] The corner striking plate 10 shown in Figs. 1, 2 and 3 is arranged at the corner of the frame of the window or door assembly. As with the corner hinges, the corner striking plate is also attached to both frame members at the corner via not shown screws. This increases the strength of the joint and allows the forces applied to the corner striking plate to be split between the two frame members. The corner striking plate is also arranged such that if force is applied during a break in attempt, the corner striking plate will bend approximately about a line L ex-

tending between a first flange 49 and a second flange 50 of the corner striking plate 10, and the first flange 49 will bend into an even more locked position, that is a position closer to the sash.

[0044] The first flange 49 of the corner striking plate 10 comprises the first and the second recesses 15, 16 for engagement with the engagement portion 14 of the espagnolette bolt 8a, 8b and the second flange 50 is mounted to a surface of both frame members 2a, 2b, 2c connected at the corner. The second flange 50 comprises a first and a second plate member 51, 52 arranged at right angles to each other and being fixed to separate frame members, respectively, by means of not shown mounting screws inserted through mounting holes 53, 54, respectively.

[0045] In the embodiment shown in Figs. 6 to 10, the espagnolette bolt 8a, 8b is guided along the sash member 3d by means of at least one bolt 55 mounted in the sash member and extending through an elongated hole 56 in the espagnolette bolt 8a, 8b. The bolt 55 is provided with a head 57 having a larger diameter than the width of the elongated hole 56.

[0046] In the embodiment illustrated in Fig. 1, only the upper part of the sash 3 is provided with a brake 12 and consequently the flexible band 23 and related features are omitted at the lower corner of the frame connecting the sash elements 3d, 3c. Other features, such as the end bolts 17, 18 and the separate cover bracket 20 are preferably similar to the corresponding parts at the top of the sash. However, features that are only necessary for the brake system may be omitted at the lower corner of the sash, such as for instance the recess 22 for the flexible band 23.

[0047] It should be noted that the embodiment of the invention illustrated in the Figs. 6 to 10 has the form of a window assembly having sash and frame members made of pultruded or extruded profiles, for instance made of fibre reinforced composite materials or from plastic materials. Further, the embodiment of the invention illustrated in the Figs. 11 to 20 has the form of a window assembly having sash and frame members made wooden profiles. However, the skilled person will understand that features of these embodiments can be interchanged or combined in different ways. For instance, the snap-connection shown in Fig. 13 may just as well be employed in the embodiment of the invention shown in Figs. 6 to 10. Similarly, the injection moulded separate guide piece 36 shown in Figs. 17 to 18 may just as well be employed in the embodiment of the invention shown in Figs. 1 to 10. The skilled person will understand that the fact that different kinds of sash and frame members may have different dimensions may, for a certain window assembly, render features of a certain embodiment shown preferable over features shown in another embodiment. However, in general, every feature shown in the different embodiments is interchangeable with a similar feature of another shown embodiment, without departing from the scope of the invention as defined by the appended

claims.

Claims

1. An outwardly opening window or door assembly (1) comprising a frame (2) and a sash (3) carrying a window pane (4) or door leaf and being mounted in the frame (2) movable between an open position, a ventilation position and a closed position, a locking device (7) being mounted in a cavity of a sash member (3d) of the sash (3), the locking device (7) comprising at least one displaceable locking element in the form of an espagnolette bolt (8a, 8b) extending along an outer edge of the sash member (3d) comprising the locking device (7), and the locking device (7) comprising a handle (13) adapted to displace the locking element between a locked position, in which an engagement portion (14) of the espagnolette bolt (8a, 8b) engages a corner striking plate (10) of the window or door assembly (1) mounted at a corresponding corner of the frame (2), and an unlocked position, in which the engagement portion (14) of the espagnolette bolt (8a, 8b) is disengaged from the corner striking plate (10), the corner striking plate (10) comprising a first recess (15) adapted for engagement with the engagement portion (14) of the espagnolette bolt (8a, 8b) in the ventilation position of the window or door assembly and a second recess (16) being adapted for engagement with the engagement portion (14) of the espagnolette bolt (8a, 8b) in the closed position of the window or door assembly, **characterized in that** the engagement portion (14) of the espagnolette bolt (8a, 8b) is split up into a first and a second end bolt (17, 18) spaced in a direction perpendicular to a general plane of the window pane (4) or door leaf, so that, in the closed position of the window or door assembly (1), the first end bolt (17) may engage the first recess (15) of the corner striking plate (10), and the second end bolt (18) may engage the second recess (16) of the corner striking plate (10), and so that, in the ventilation position of the window or door assembly, the second end bolt (18) may engage the first recess (15) of the corner striking plate (10).
2. An outwardly opening window or door assembly (1) according to claim 1, **characterized in that** the first and the second end bolts (17, 18) of the engagement portion (14) of the espagnolette bolt (8a, 8b), in the locked position, extend through an opening (19) formed by a separate cover bracket (20) mounted on the sash (3), and **in that** the first and the second end bolts (17, 18) are preferably guided by the separate cover bracket (20).
3. An outwardly opening window or door assembly (1) according to claim 1 or 2, **characterized in that** a separate corner bracket (21) is mounted at a corner of the sash (3), and **in that** the separate corner bracket (21) has a recess (38) that is suitable for guiding a flexible band (23) connecting the espagnolette bolt (8a) and an actuation arm, such as a brake actuation arm (24), arranged displaceably along an outer edge of a sash member (3a) that, at the corner of the sash (3), is connected to the sash member (3d) that comprises the locking device (7).
4. An outwardly opening window or door assembly (1) according to any one of the preceding claims, **characterized in that** an actuation arm, such as a brake actuation arm (24), is arranged displaceably along an outer edge of a sash member (3a) that, at a corner of the sash, is connected to the sash member (3d) that comprises the locking device (7), and **in that** a flexible band (23) connecting the espagnolette bolt (8a) and the actuation arm (24) is arranged between the first and the second end bolts (17, 18) of the engagement portion (14) of the espagnolette bolt (8a).
5. An outwardly opening window or door assembly (1) according to claim 4, **characterized in that** the engagement portion (14) of the espagnolette bolt (8a, 8b) has the form of a fork head (26) composed by the first and the second end bolts (17, 18) and a connecting piece (27) connecting the first and the second end bolts (17, 18), and **in that** the flexible band (23) is connected to the connecting piece (27).
6. An outwardly opening window or door assembly (1) according to claim 5, **characterized in that** a first end (28) of the flexible band (23) is connected to the connecting piece (27) by abutting a side (29) of the connecting piece facing away from the window pane (4) or door leaf, and **in that** the first end (28) of the flexible band (23) is preferably provided with a through hole (30) in which a protrusion (31) on the connecting piece (27) is engaged.
7. An outwardly opening window or door assembly (1) according to any one of the claims 4 to 6, **characterized in that** a second end (32) of the flexible band (23) is connected to the actuation arm (24) by abutting a side (33) of the actuation arm (24) facing away from the window pane (4) or door leaf, and **in that** the second end (32) of the flexible band (23) is preferably provided with a through hole (34) in which a protrusion (35) on the actuation arm (24) is engaged.
8. An outwardly opening window or door assembly (1) according to any one of the claims 4 to 7, **characterized in that** the flexible band (23) is guided around the corner of the window sash (3) by means of a separate guide piece (36) mounted on the sash, and **in that** the separate guide piece (36) forms a

smoothly curved path (37) for the flexible band (23).

9. An outwardly opening window or door assembly according to claim 8, **characterized in that** the separate guide piece (36) has the form of a substantially L-shaped element provided with a smoothly curved recess (38) forming a part of the smoothly curved path (37), the smoothly curved recess (38) being formed where the legs of the substantially L-shaped element meet each other, in the outward facing sides of the legs, and **in that** a covering element (39) is preferably provided that fits into the smoothly curved recess (38) in order to form another part of the smoothly curved path (37) and in order to cover the flexible band (23).
10. An outwardly opening window or door assembly according to claim 8, **characterized in that** the separate guide piece (36) has the form of two abutting, symmetrically formed parts (40) that are closed around the flexible band (23), and **in that** the two symmetrically formed parts (40) are preferably injection moulded and preferably mutually connected by means of a film hinge (41).
11. An outwardly opening window or door assembly (1) according to any one of the preceding claims, **characterized in that** the engagement portion (14) of the espagnolette bolt (8a, 8b) has the form of a separate element connected to the espagnolette bolt by means of a click-lock mechanism (42).
12. An outwardly opening window or door assembly according to claim 11, **characterized in that** the click-lock mechanism (42) is composed by means of a first substantially mushroom-like part (43) and a second part (44) having a first and a second leg (45, 46), and **in that** at least one of the legs of the second part (44) is provided with a protrusion (47) adapted to grip under a head (48) of the mushroom-like part (43).
13. An outwardly opening window or door assembly according to claim 12, **characterized in that** only the first leg (45) of the second part (44) is provided with a protrusion (47) adapted to grip under the head (48) of the mushroom-like part (43).
14. An outwardly opening window or door assembly according to any one of the preceding claims, **characterized in that** the cross section of the espagnolette bolt (8a, 8b) has a rectangular shape with one dimension being larger than the other dimension, so that the larger dimension of the cross section is arranged perpendicular to the general plane of the window pane (4) or door leaf.
15. An outwardly opening window or door assembly ac-

cording to claim 14, **characterized in that** the espagnolette bolt (8a, 8b) is guided along the sash member (3d) by means of at least one bolt (55) mounted in the sash member, **in that** the bolt (55) extends through an elongated hole (56) in the espagnolette bolt, and **in that** the bolt (55) is provided with a head (57) having a larger diameter than the width of the elongated hole (56).

16. An outwardly opening window or door assembly according to any one of the preceding claims, **characterized in that** the corner striking plate (10) comprises a first flange (49) comprising the first and the second recess (15, 16) for engagement with the engagement portion (14) of the espagnolette bolt (8a, 8b) and a second flange (50) being mounted to a surface of both frame members (2a, 2b, 2c) connected at the corner.
17. An outwardly opening window or door assembly according to claim 16, **characterized in that** the second flange (50) comprises a first and a second plate member (51, 52) arranged at right angles to each other and being fixed to separate frame members, respectively.

Patentansprüche

1. Nach außen öffnende Fenster- oder Türanordnung (1) umfassend einen Rahmen (2) und einen eine Fensterscheibe (4) oder ein Türblatt tragenden Flügelrahmen (3), welche Fenster- oder Türanordnung in dem Rahmen (2) befestigt und zwischen einer offenen Stellung, einer Lüftungsstellung und einer geschlossenen Stellung beweglich ist, eine in einer Aussparung eines Flügelrahmenelements (3d) des Flügelrahmens (3) befestigte Verschlussanordnung (7), welche Verschlussanordnung (7) mindestens ein versetzbare Verschlusselement in Form eines sich entlang von einem äußeren Rand des die Verschlussanordnung (7) aufweisenden Flügelrahmenelements (3d) erstreckenden Treibriegels (8a, 8b) umfasst, und wobei die Verschlussanordnung (7) einen Handgriff (13) umfasst, welcher dazu ausgebildet ist, das Verschlusselement zwischen einer verschlossenen Stellung, in welcher ein Eingriffsteil (14) des Treibriegels (8a, 8b) mit einem in einer entsprechenden Ecke des Rahmens (2) befestigten Eck-schließblech (10) der Fensteroder Türanordnung (1) in Eingriff gelangt, und einer nicht verschlossenen Stellung, in welcher der Eingriffsteils (14) des Treibriegels (8a, 8b) mit dem Eck-schließblech (10) außer Eingriff gelangt, zu versetzen, wobei das Eck-schließblech (10) eine erste Aussparung (15) umfasst, welche zum Eingriff mit dem Eingriffsteil (14) des Treibriegels (8a, 8b) in der Lüftungsstellung der Fenster- oder Türanordnung ausgebildet ist, und ei-

- ne zweite Aussparung (16) umfasst, welche zum Eingriff mit dem Eingriffsteil (14) des Treibriegels (8a, 8b) in der geschlossenen Stellung der Fenster- oder Türanordnung ausgebildet ist, **dadurch gekennzeichnet, dass** der Eingriffsteil (14) des Treibriegels (8a, 8b) in einen ersten und einen zweiten Endbolzen (17, 18) eingeteilt ist, welche in einer zu einer allgemeinen Ebene der Fensterscheibe (4) oder des Türblatts senkrechten Richtung derart beabstandet angeordnet sind, dass, in der geschlossenen Position der Fenster- oder Türanordnung (1), der erste Endbolzen (17) mit der ersten Aussparung (15) des Eckschließbleches (10) in Eingriff gelangen kann, und der zweite Endbolzen (18) mit der zweiten Aussparung (16) des Eckschließbleches (10) in Eingriff gelangen kann, und derart, dass, in der Lüftungsstellung der Fenster- oder Türanordnung, der zweite Endbolzen (18) mit der ersten Aussparung (15) des Eckschließbleches (10) in Eingriff gelangen kann.
2. Nach außen öffnende Fenster- oder Türanordnung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** sich der erste und der zweite Endbolzen (17, 18) des Eingriffsteils (14) des Treibriegels (8a, 8b) in der verschlossenen Position durch eine durch einen gesonderten, an dem Flügelrahmen (3) befestigten Abdeckbeschlag (20) gebildete Öffnung (19) hindurch erstrecken, und dass der erste und der zweite Endbolzen (17, 18) vorzugsweise von dem gesonderten Abdeckbeschlag (20) geführt sind.
3. Nach außen öffnende Fenster- oder Türanordnung (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** ein gesonderter Eckbeschlag (21) an einer Ecke des Flügelrahmens (3) befestigt ist, und dass der gesonderte Eckbeschlag (21) eine Aussparung (38) aufweist, welche zur Führung eines flexiblen Bandes (23) geeignet ist, welches den Treibriegel (8a) und einen Betätigungsarm, wie beispielsweise einen Bremsbetätigungsarm (24), verbindet, welche entlang von einem äußeren Rand eines an der Ecke des Flügelrahmens (3) mit dem die Verschlussanordnung (7) aufweisenden Flügelrahmenelement (3d) verbundenen Flügelrahmenelementes (3a) versetzt angeordnet ist.
4. Nach außen öffnende Fenster- oder Türanordnung (1) nach einem der vorgehenden Ansprüche, **dadurch gekennzeichnet, dass** ein Betätigungsarm, wie beispielsweise ein Bremsbetätigungsarm (24), entlang von einem äußeren Rand eines an einer Ecke des Flügelrahmens (3) mit dem die Verschlussanordnung (7) aufweisenden Flügelrahmenelement (3d) verbundenen Flügelrahmenelementes (3a) versetzt angeordnet ist, und dass ein den Treibriegel (8a) und den Betätigungsarm (24) verbindendes, flexibles Band (23) zwischen dem ersten und dem zweiten Endbolzen (17, 18) des Eingriffsteils (14) des Treibriegels (8a) angeordnet ist.
5. Nach außen öffnende Fenster- oder Türanordnung (1) nach Anspruch 4, **dadurch gekennzeichnet, dass** der Eingriffsteil (14) des Treibriegels (8a, 8b) die Form eines Gabelkopfes (26) aufweist, welcher sich durch den ersten und den zweiten Endbolzen (17, 18) und ein den ersten und den zweiten Endbolzen (17, 18) verbindendes Verbindungsstück (27) zusammensetzt, und dass das flexible Band (23) mit dem Verbindungsstück (27) verbunden ist.
6. Nach außen öffnende Fenster- oder Türanordnung (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** ein erstes Ende (28) des flexiblen Bandes (23) durch das Anliegen an einer Seite (29) der Fensterscheibe (4) oder dem Türblatt abgewandten Verbindungsstücks mit dem Verbindungsstück (27) verbunden ist, und dass das erste Ende (28) des flexiblen Bandes (23) vorzugsweise mit einem Durchgangsloch (30) versehen ist, in welchem sich ein Vorsprung (31) an dem Verbindungsstück (27) in Eingriff befindet.
7. Nach außen öffnende Fenster- oder Türanordnung (1) nach einem der Ansprüche 4 bis 6, **dadurch gekennzeichnet, dass** ein zweites Ende (32) des flexiblen Bandes (23) durch das Anliegen an einer Seite (33) der Fensterscheibe (4) oder dem Türblatt abgewandten Betätigungsarm (24) mit dem Betätigungsarm (24) verbunden ist, und dass das zweite Ende (32) des flexiblen Bandes (23) vorzugsweise mit einem Durchgangsloch (34) versehen ist, in welchem sich ein Vorsprung (35) an dem Betätigungsarm (24) in Eingriff befindet.
8. Nach außen öffnende Fenster- oder Türanordnung (1) nach einem der Ansprüche 4 bis 7, **dadurch gekennzeichnet, dass** das flexible Band (23) mittels eines an dem Flügelrahmen befestigten gesonderten Führungsstücks (36) um die Ecke des Fensterflügelrahmens herum geführt ist, und dass das gesonderte Führungsstück (36) eine leicht gebogene Bahn (37) für das flexible Band (23) bildet.
9. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 8, **dadurch gekennzeichnet, dass** das gesonderte Führungsstück (36) die Form eines im Wesentlichen L-förmigen Elements aufweist, welches mit einer leicht gebogenen Aussparung (38) versehen ist, welche einen Teil der leicht gebogenen Bahn (37) bildet, wobei die leicht gebogene Aussparung (38) dort ausgebildet ist, wo die Schenkel des im Wesentlichen L-förmigen Elements aufeinander treffen, in den nach außen gewandten Seiten der Schenkel, und dass vorzugsweise ein Abdeckelement (39) vorgesehen ist, welches in die leicht ge-

bogene Aussparung (38) hineinpasst, um einen anderen Teil der leicht gebogenen Bahn (37) zu bilden und um das flexible Band (23) zu überdecken.

10. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 8, **dadurch gekennzeichnet, dass** das gesonderte Führungsstück (36) die Form von zwei anliegenden, symmetrisch gebildeten Teilen (40) aufweist, welche um das flexible Band (23) geschlossen sind, und dass die beiden symmetrisch gebildeten Teile (40) bevorzugt spritzgegossen und bevorzugt mittels eines Filmscharniers (41) miteinander verbunden sind. 5 10
11. Nach außen öffnende Fenster- oder Türanordnung (1) nach einem der vorgehenden Ansprüche, **dadurch gekennzeichnet, dass** der Eingriffsteil (14) des Treibriegels (8a, 8b) die Form eines gesonderten Elements aufweist, welches mittels eines Klickverschlussmechanismus (42) mit dem Treibriegel verbunden ist. 15 20
12. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 11, **dadurch gekennzeichnet, dass** sich der Klickverschlussmechanismus (42) durch einen ersten, im Wesentlichen pilzartigen Teil (43) und einen zweiten Teil (44) mit einem ersten und einem zweiten Schenkel (45, 46) zusammensetzt, und dass mindestens einer der Schenkel des zweiten Teils (44) mit einem Vorsprung (47) versehen ist, welcher zum Hintergreifen an einem Kopf (48) des pilzartigen Teils (43) ausgebildet ist. 25 30
13. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 12, **dadurch gekennzeichnet, dass** nur der erste Schenkel (45) des zweiten Teils (44) mit einem zum Hintergreifen am Kopf (48) des pilzartigen Teils (43) ausgebildeten Vorsprung (47) versehen ist. 35 40
14. Nach außen öffnende Fenster- oder Türanordnung nach einem der vorgehenden Ansprüche, **dadurch gekennzeichnet, dass** der Querschnitt des Treibriegels (8a, 8b) eine rechteckige Form mit einer Dimension ausweist, welche größer ist als die andere Dimension, so dass die größere Dimension des Querschnitts senkrecht zur allgemeinen Ebene der Fensterscheibe (4) oder des Türblatts angeordnet ist. 45 50
15. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 14, **dadurch gekennzeichnet, dass** der Treibriegel (8a, 8b) mittels mindestens eines in dem Flügelrahmenelement angeordneten Bolzens (55) entlang von dem Flügelrahmenelement (3d) geführt ist, dass sich der Bolzen (55) durch ein Langloch (56) im Treibriegel hindurch erstreckt, und dass der Bolzen (55) mit einem Kopf (57) mit einem 55

größeren Durchmesser als der Breite des Langlochs (56) versehen ist.

16. Nach außen öffnende Fenster- oder Türanordnung nach einem der vorgehenden Ansprüche, **dadurch gekennzeichnet, dass** das Eckschließblech (10) einen ersten Flansch (49) umfassend die erste und die zweite Aussparung (15, 16) zum Eingriff mit dem Eingriffsteil (14) des Treibriegels (8a, 8b) und einen zweiten, an einer Oberfläche der beiden an der Ecke verbundenen Rahmenelemente (2a, 2b, 2c) befestigten Flansch (50) umfasst.
17. Nach außen öffnende Fenster- oder Türanordnung nach Anspruch 16, **dadurch gekennzeichnet, dass** der zweite Flansch (50) ein erstes und ein zweites Plattenelement (51, 52) umfasst, welche zueinander rechtwinklig angeordnet bzw. an gesonderten Rahmenelementen fixiert sind.

Revendications

1. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1), comprenant un cadre (2) et un ouvrant (3) portant une vitre de fenêtre (4) ou vantail de porte et étant monté dans le cadre (2) qui peut se déplacer entre une position ouverte, une position de ventilation et une position fermée, un dispositif de verrouillage (7) étant monté dans une cavité d'un élément d'ouvrant (3d) de l'ouvrant (3), le dispositif de verrouillage (7) comprenant au moins un élément de verrouillage mobile dans la forme d'une espagnolette (8a, 8b) s'étendant le long d'un arête extérieure de l'élément d'ouvrant (3d) comprenant le dispositif de verrouillage (7), et le dispositif de verrouillage (7) comprenant une poignée (13) adaptée pour déplacer l'élément de verrouillage entre une position verrouillée, dans laquelle une partie d'engagement (14) de l'espagnolette (8a, 8b) est en prise avec une plaque de coin de frappe (10) de l'ensemble de fenêtre ou de porte (1) montée à un coin correspondant du cadre (2), et une position déverrouillée, dans laquelle la partie d'engagement (14) de l'espagnolette (8a, 8b) est désengagée de la plaque de coin de frappe (10), la plaque de coin de frappe (10) comprenant un premier évidement (15) adapté pour venir en prise avec la partie d'engagement (14) de l'espagnolette (8a, 8b) dans la position de ventilation de l'ensemble de fenêtre ou de porte, et un deuxième évidement (16) étant adapté pour venir en prise avec la partie d'engagement (14) de l'espagnolette (8a, 8b) dans la position fermée de l'ensemble de fenêtre ou de porte, **caractérisé en ce que** la partie d'engagement (14) de l'espagnolette (8a, 8b) est subdivisée dans un premier et un deuxième boulon d'extrémité (11, 18) espacés dans une direction perpendiculaire à un plan général de la vitre de fenêtre (4) ou du 50

vantail de porte, si bien que, dans la position fermée de l'ensemble de fenêtre ou de porte (1), le premier boulon d'extrémité (17) peut engager le premier évidement (15) de la plaque de coin de frappe (10), et le deuxième boulon d'extrémité (18) peut engager le deuxième évidement (16) de la plaque de coin de frappe (10), et si bien que, dans la position de ventilation de l'ensemble de fenêtre ou de porte, le deuxième boulon d'extrémité (18) peut engager le premier évidement (15) de la plaque de coin de frappe (10).

2. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon la revendication 1, **caractérisé en ce que** le premier et le deuxième boulon d'extrémité (17, 18) de la partie d'engagement (14) de l'espagnolette (8a, 8b), dans la position verrouillée, s'étendent à travers une ouverture (19) formée par une console de couvrement (20) séparée montée sur l'ouvrant (3), et **en ce que** le premier et le deuxième boulon d'extrémité (17, 18) sont de préférence guidés par la console de couvrement séparée (20).
3. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon la revendication 1 ou 2, **caractérisé en ce qu'une** console d'angle séparée (21) est montée à un coin de l'ouvrant (3), et **en ce que** la console d'angle séparée (21) présente un évidement (38) qui est approprié pour guider une bande flexible (23) reliant l'espagnolette (8a) et un bras d'actionnement, tel qu'un bras d'actionnement de frein (24), agencé de manière mobile le long d'un bord extérieur d'un élément d'ouvrant (3a) qui, au coin de l'ouvrant (3), est relié à l'élément d'ouvrant (3d) qui comprend le dispositif de verrouillage (7).
4. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'un** bras d'actionnement, tel qu'un bras d'actionnement de frein (24), est disposé de manière mobile le long d'un bord extérieur d'un élément d'ouvrant (3a) qui, à un coin de l'ouvrant, est relié à l'élément d'ouvrant (3d) qui comprend le dispositif de verrouillage (7), et **en ce qu'une** bande flexible (23) reliant l'espagnolette (8a) et le bras d'actionnement (24) est disposée entre le premier et le deuxième boulon d'extrémité (17, 18) de la partie d'engagement (14) de l'espagnolette (8a).
5. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon la revendication 4, **caractérisé en ce que** la partie d'engagement (14) de l'espagnolette (8a, 8b) présente la forme d'une tête de fourche (26) composée par le premier et le deuxième boulon d'extrémité (17, 18) et une pièce de raccordement (27) reliant le premier et le deuxième boulon d'extrémité (17, 18), et **en ce que** la bande flexible (23)

est reliée à la pièce de raccordement (27).

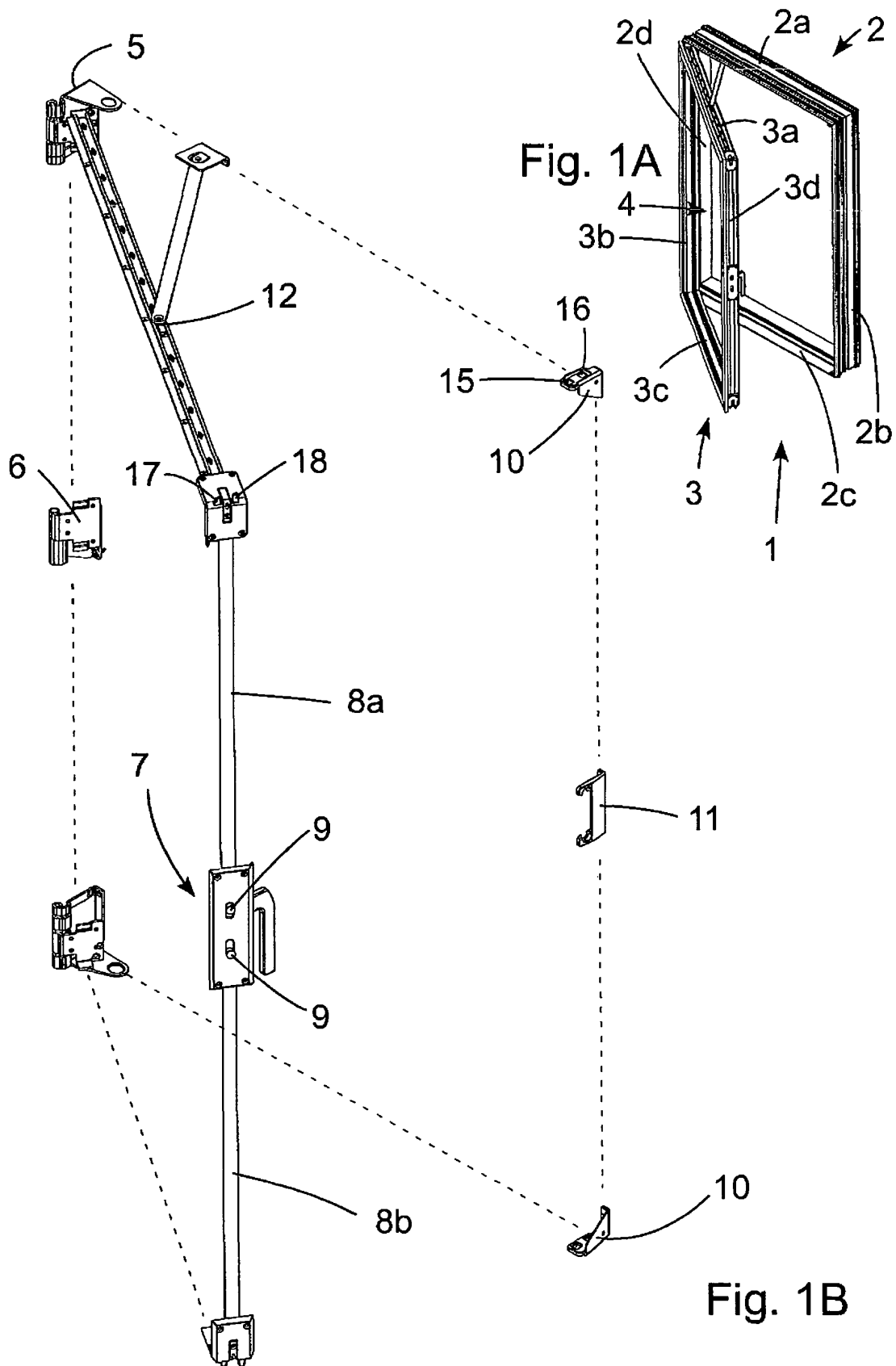
6. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon la revendication 5, **caractérisé en ce qu'une** première extrémité (28) de la bande flexible (23) est reliée à la pièce de raccordement (27) en venant en butée d'un côté (29) de la pièce de raccordement détournée de la vitre de fenêtre (4) ou du vantail de porte, et **en ce que** la première extrémité (28) de la bande flexible (23) est de préférence pourvue d'un trou traversant (30) dans lequel une saillie (31) sur la pièce de raccordement (27) est engagée.
7. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon l'une quelconque des revendications 4 à 6, **caractérisé en ce qu'une** deuxième extrémité (32) de la bande flexible (23) est reliée au bras d'actionnement (24) en venant en butée d'un côté (33) du bras d'actionnement (24) détourné de la vitre de fenêtre (4) ou du vantail de porte, et en ce que la deuxième extrémité (32) de la bande flexible (23) est de préférence pourvue d'un trou traversant (34) dans lequel une saillie (35) sur le bras d'actionnement (24) est engagée.
8. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon l'une quelconque des revendications 4 à 7, **caractérisé en ce que** la bande flexible (23) est guidée autour du coin de l'ouvrant de fenêtre (3) au moyen d'un élément de guidage séparé (36) monté sur l'ouvrant, et **en ce que** l'élément de guidage séparé (36) forme un trajet régulièrement courbé (37) pour la bande flexible (23).
9. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 8, **caractérisé en ce que** l'élément de guidage séparé (36) présente la forme d'un élément sensiblement en forme de L pourvu d'un évidement régulièrement courbé (38) formant une partie du trajet régulièrement courbé (37), l'évidement régulièrement courbé (38) étant formé lorsque les jambes de l'élément sensiblement en forme de L se rencontrent, dans les côtés orientés vers l'extérieur des jambes, et **en ce qu'un** élément de recouvrement (39) est de préférence prévu qui s'insère dans l'évidement régulièrement courbé (38) afin de former une autre partie du trajet régulièrement courbé (37) et afin de couvrir la bande flexible (23).
10. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 8, **caractérisé en ce que** l'élément de guidage séparé (36) présente la forme de deux pièces aboutissantes, formées symétriquement (40) qui sont fermées autour de la bande flexible (23), et **en ce que** les deux pièces formées symétriquement (40) sont de préférence moulées

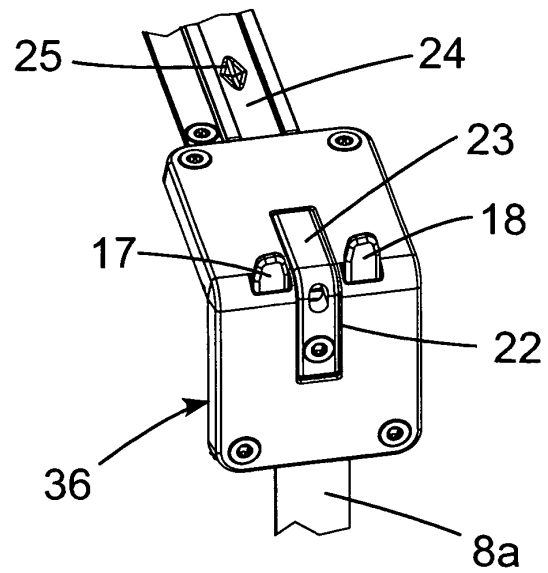
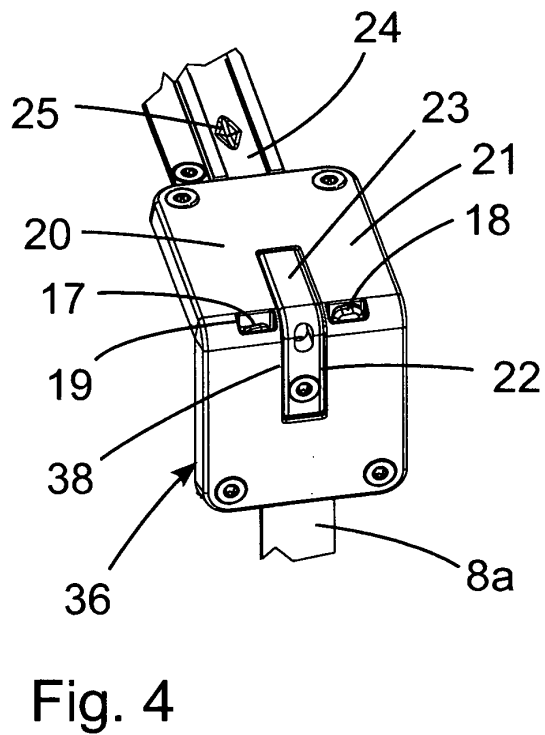
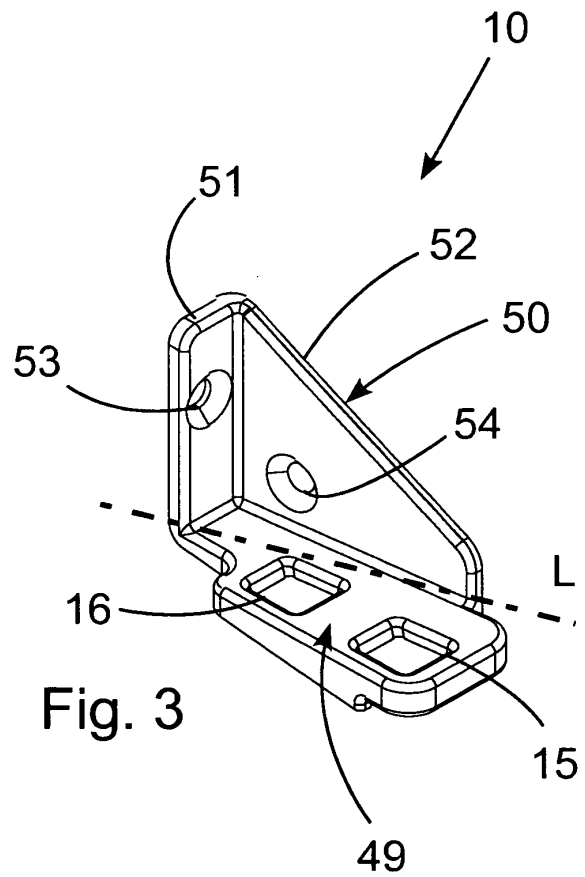
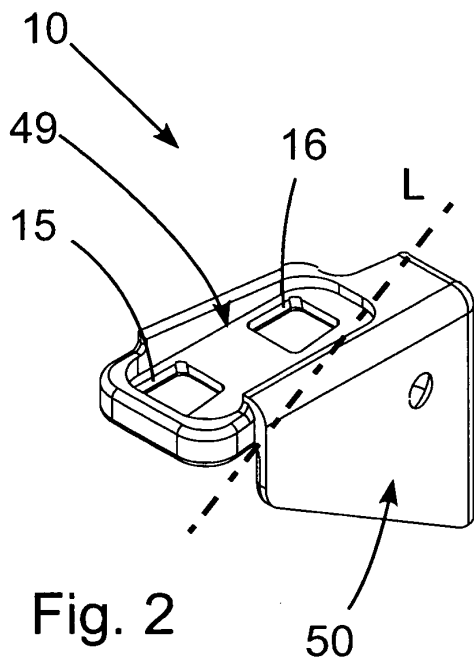
par injection et de préférence reliées entre elles par une charnière de film (41).

11. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la partie d'engagement (14) de l'espagnolette (8a, 8b) présente la forme d'un élément séparé relié à l'espagnolette au moyen d'un mécanisme de l'encliquetage (42). 5 10
12. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 11, **caractérisé en ce que** le mécanisme de l'encliquetage (42) est composé au moyen d'une première portion sensiblement en forme de champignon (43) et d'une deuxième portion (44) ayant une première et une deuxième branche (45, 46), et **en ce qu'**au moins l'une des branches de la deuxième portion (44) est pourvue d'une saillie (47) adaptée pour saisir sous une tête (48) de la portion en forme de champignon (43). 15 20
13. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 12, **caractérisé en ce que** seule la première branche (45) de la deuxième portion (44) est pourvue d'une saillie (47) adaptée pour saisir sous la tête (48) de la portion en forme de champignon (43). 25
14. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la coupe transversale de l'espagnolette (8a, 8b) présente une forme rectangulaire avec une dimension étant supérieure à l'autre dimension, si bien que la plus grande dimension de la coupe transversale est perpendiculaire au plan général de la vitre de fenêtre (4) ou du vantail de porte. 30 35
15. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 14, **caractérisé en ce que** l'espagnolette (8a, 8b) est guidée le long de l'élément d'ouvrant (3d) au moyen d'au moins un boulon (55) monté dans l'élément d'ouvrant, **en ce que** le boulon (55) s'étend à travers un trou oblong (56) dans l'espagnolette, et **en ce que** le boulon (55) est pourvu d'une tête (57) ayant un diamètre supérieur à la largeur du trou oblong (56). 40 45
16. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la plaque de coin de frappe (10) comprend une première bride (49) comprenant le premier et le deuxième évidement (15, 16) pour venir en prise avec la partie d'engagement (14) de l'espagnolette (8a, 8b) et une deuxième bride (50) étant montée sur une surface des deux éléments de cadre (2a, 2b, 2c) reliés au 50 55

coin.

17. Ensemble de fenêtre ou de porte ouvrant vers l'extérieur selon la revendication 16, **caractérisé en ce que** la deuxième bride (50) comprend un premier et un deuxième élément de plaque (51, 52) étant respectivement disposés l'un perpendiculairement par rapport à l'autre et fixés à des éléments de cadre séparés.





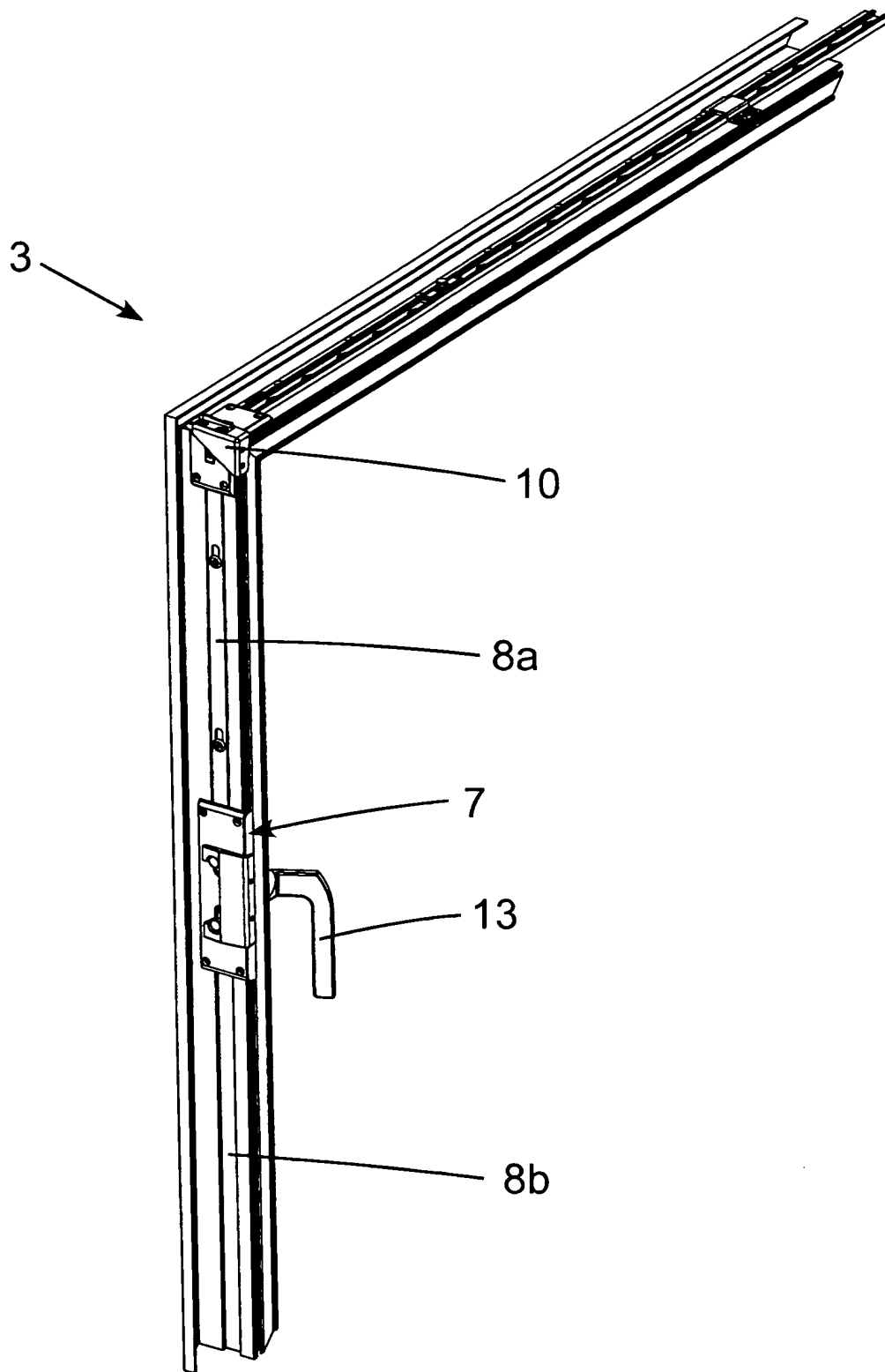


Fig. 6

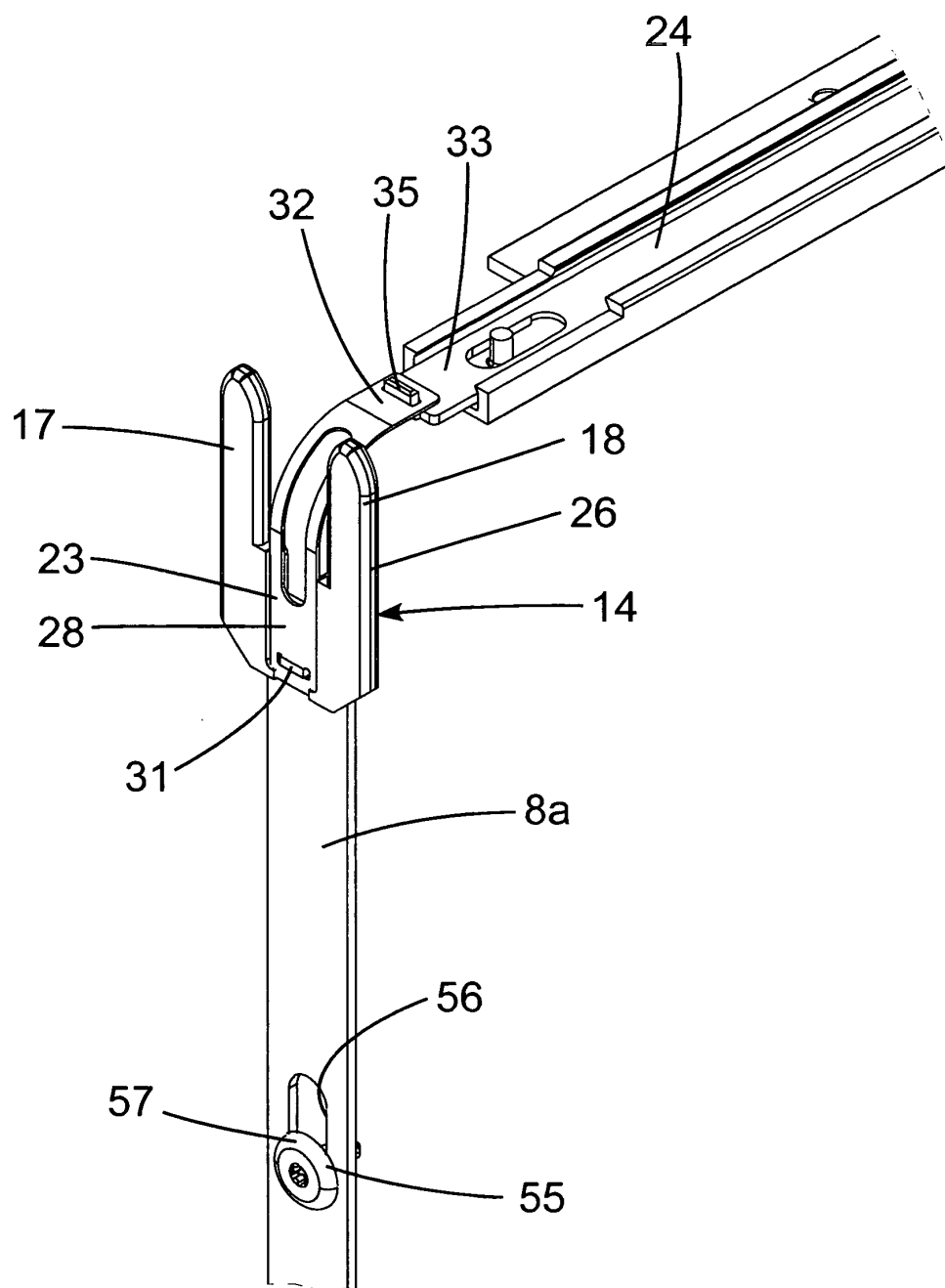


Fig. 7

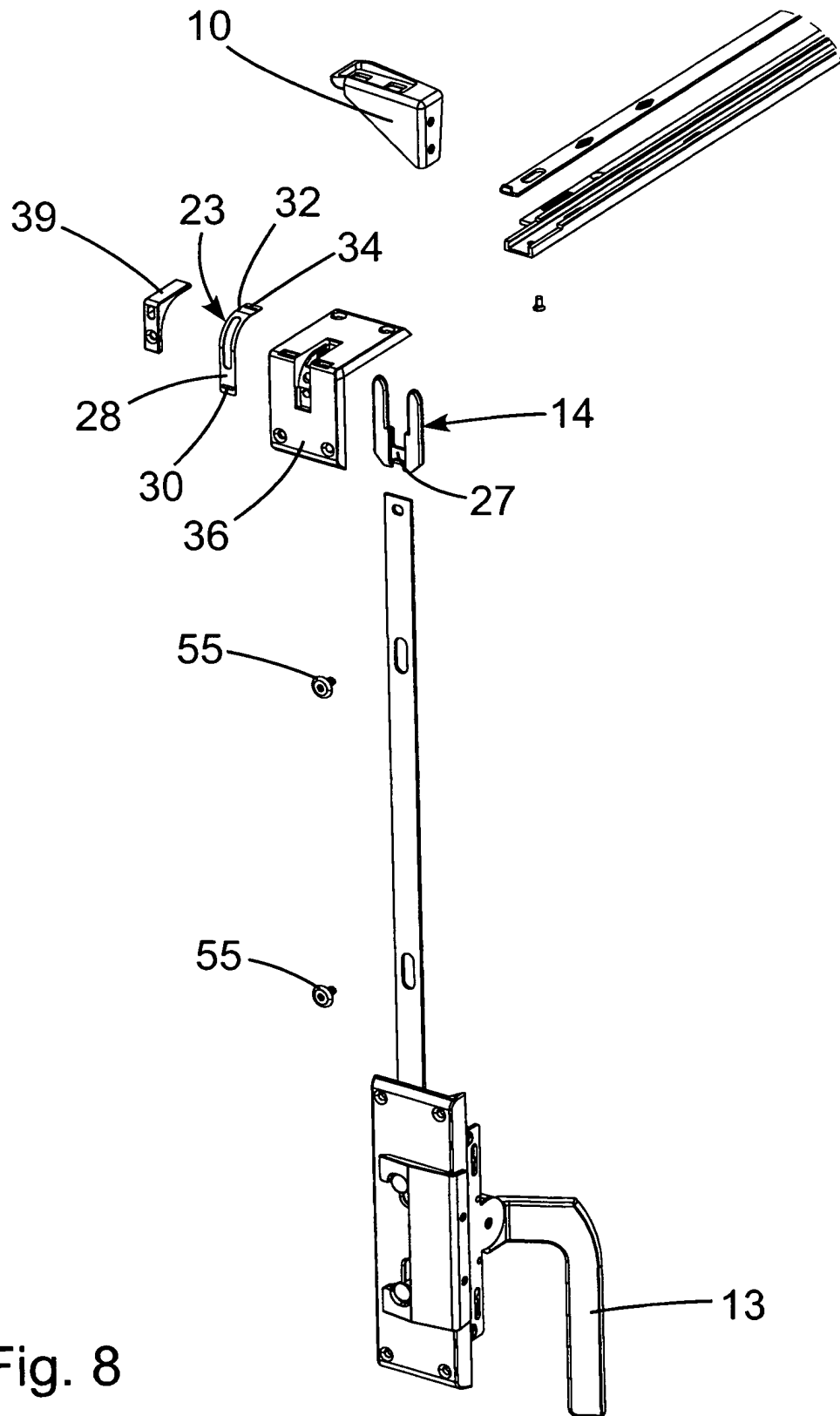


Fig. 8

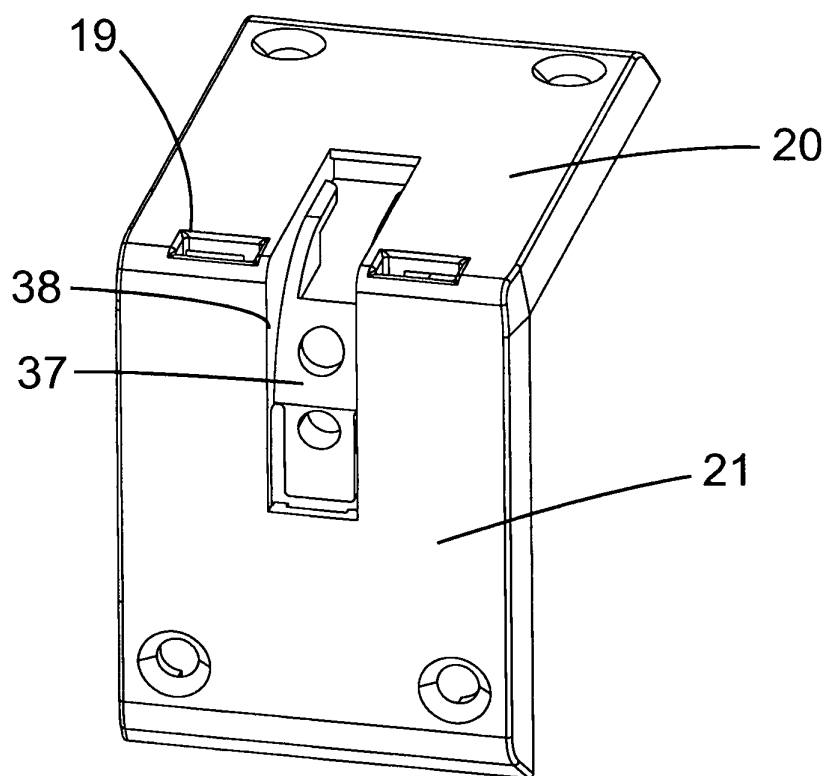


Fig. 9

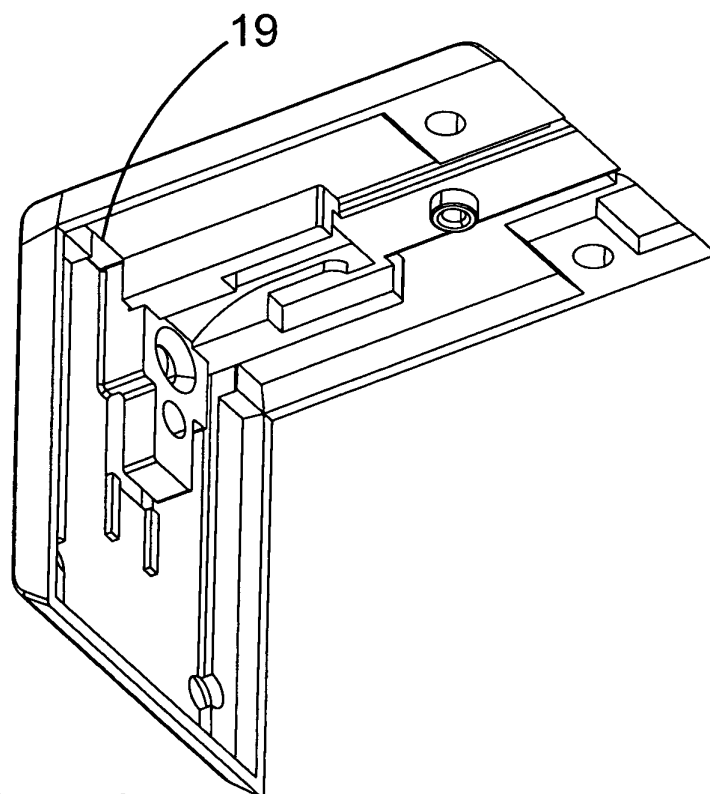


Fig. 10

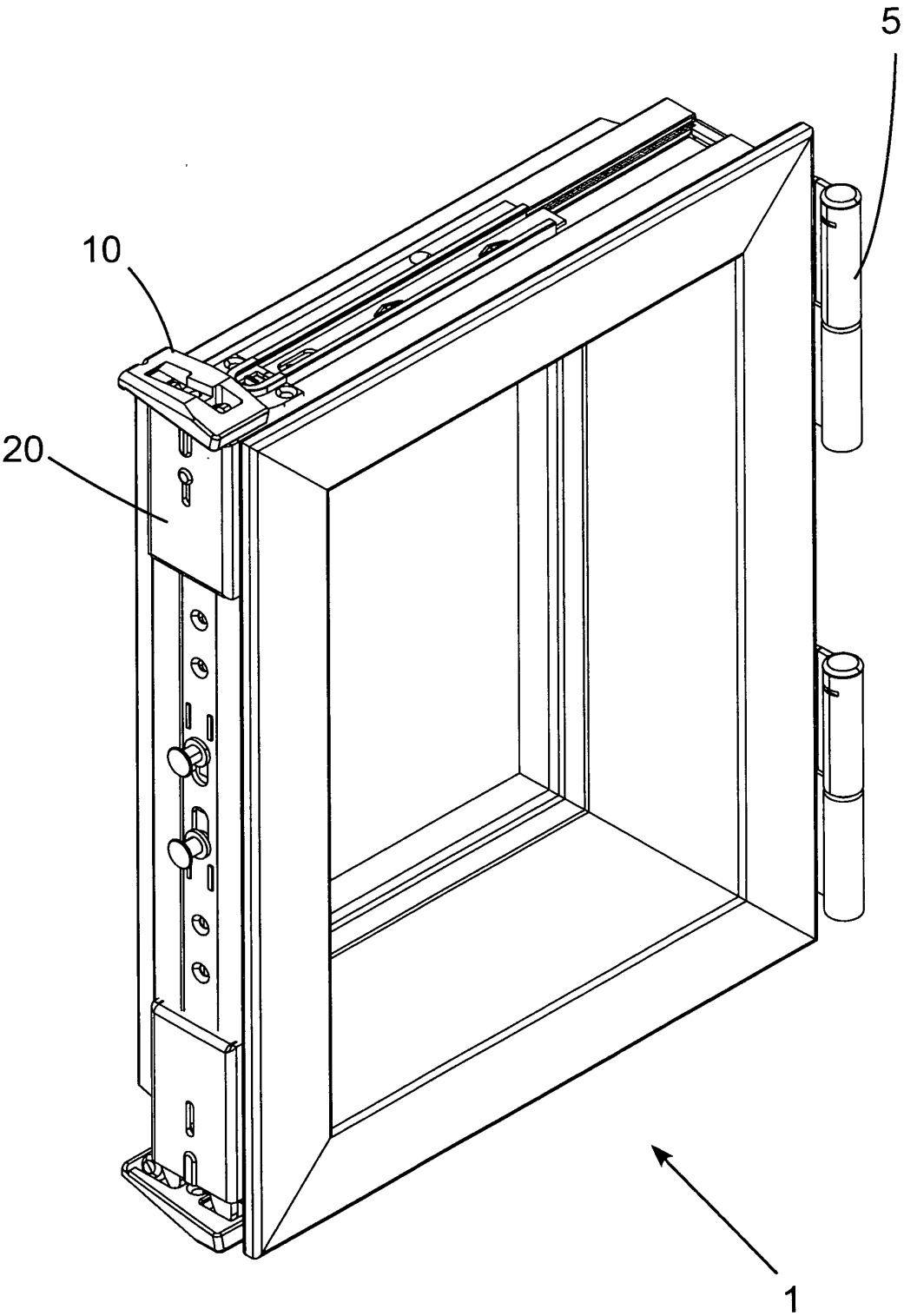


Fig. 11

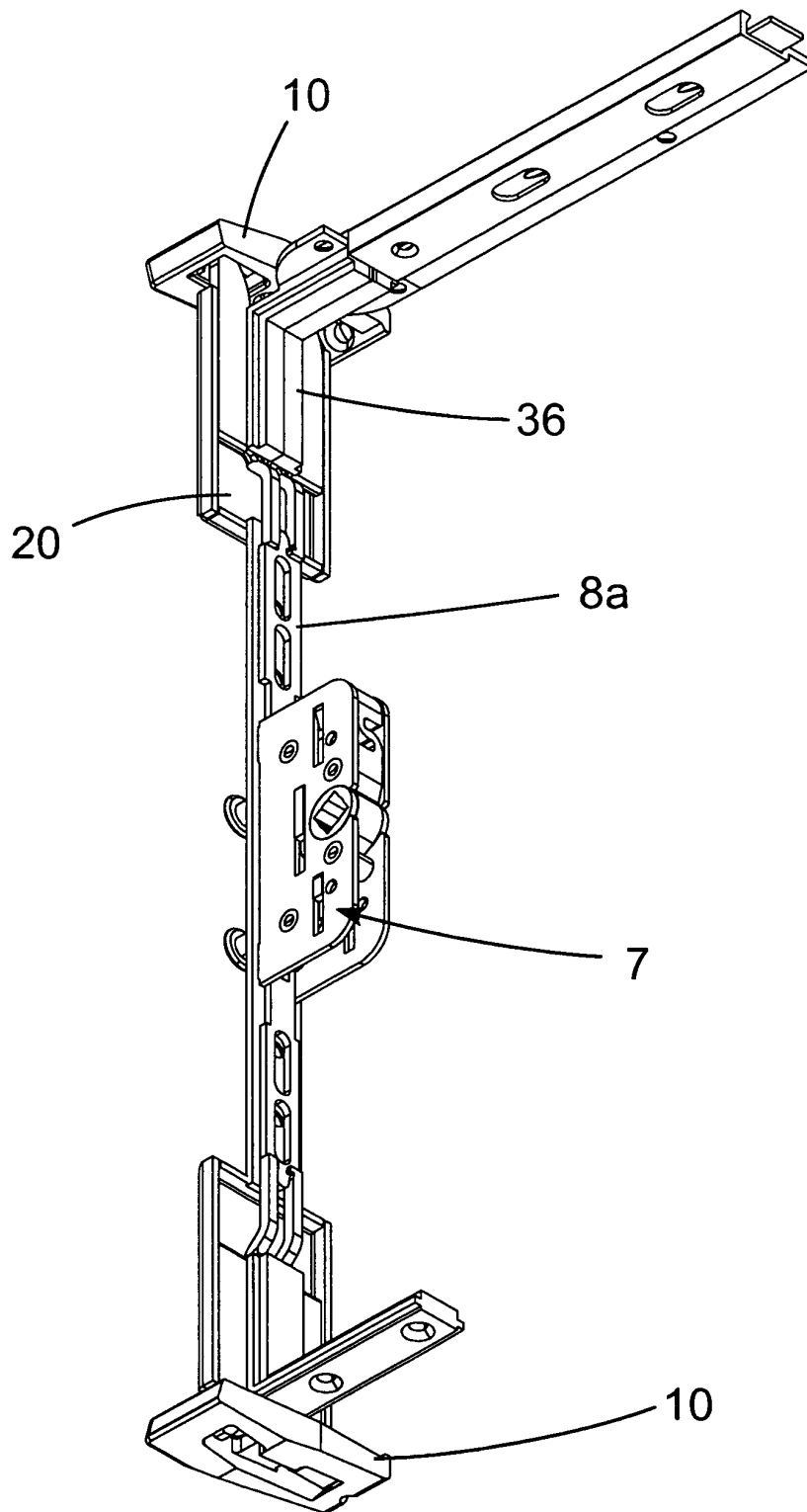


Fig. 12

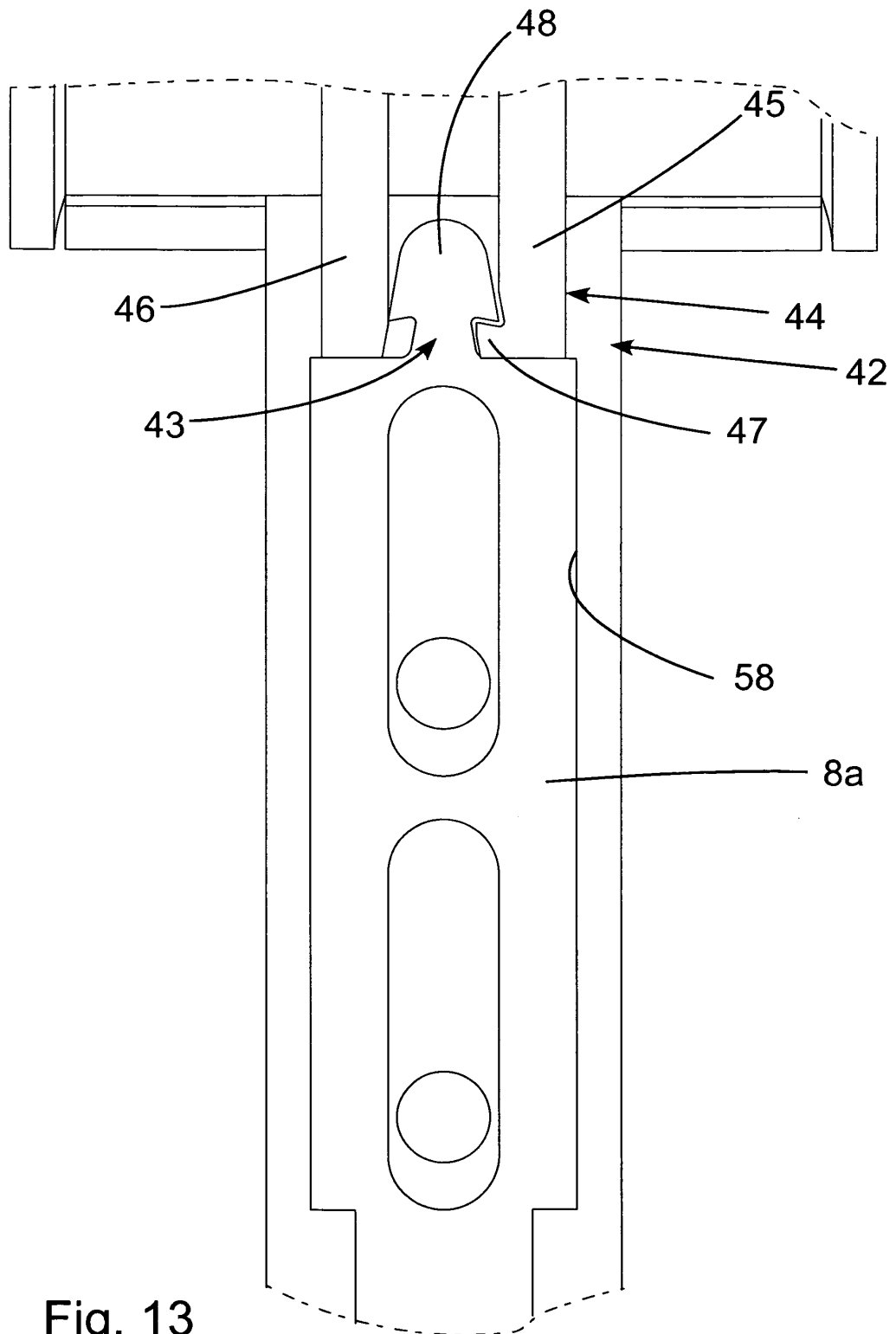


Fig. 13

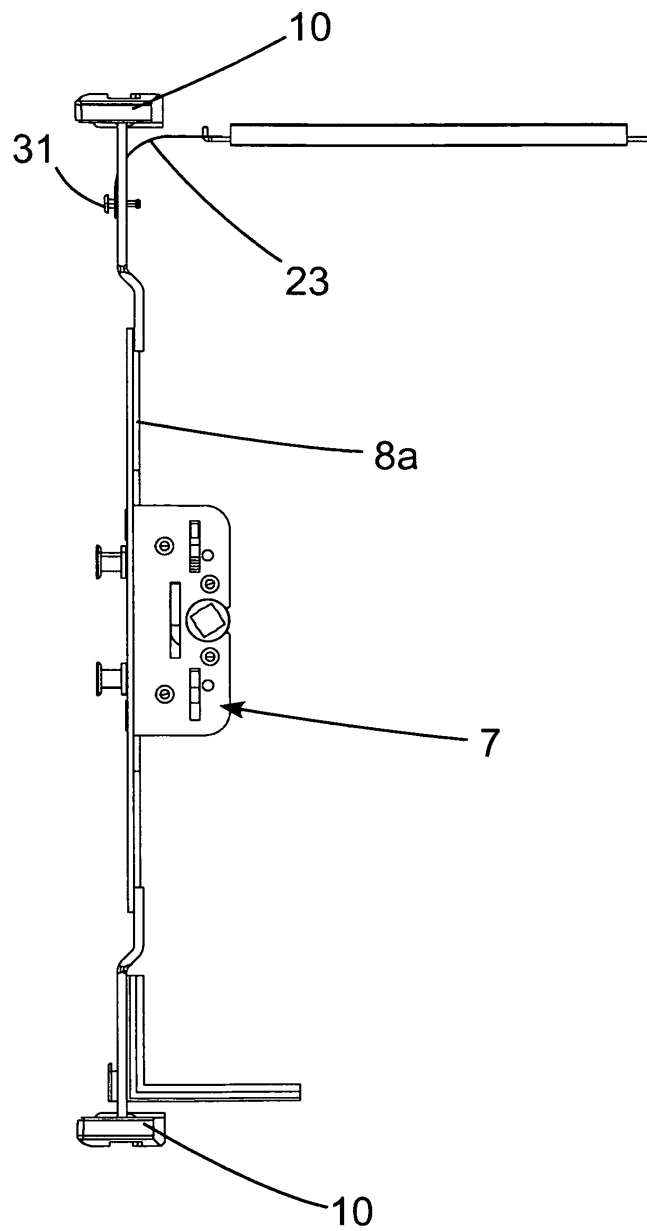


Fig. 14

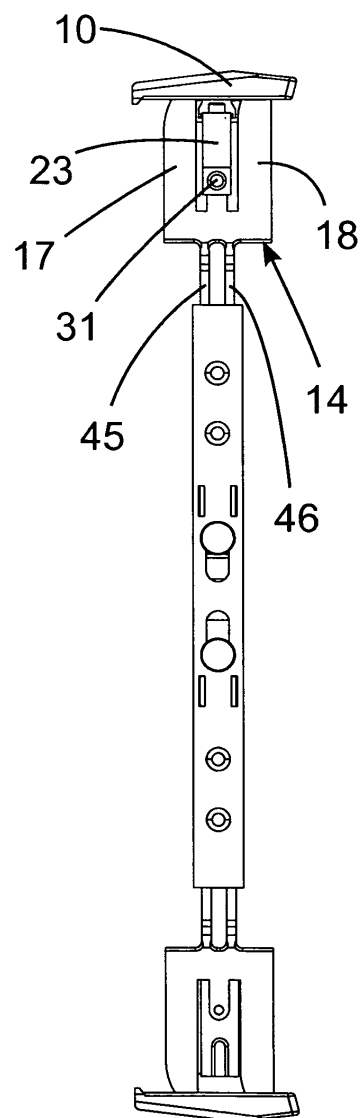


Fig. 15

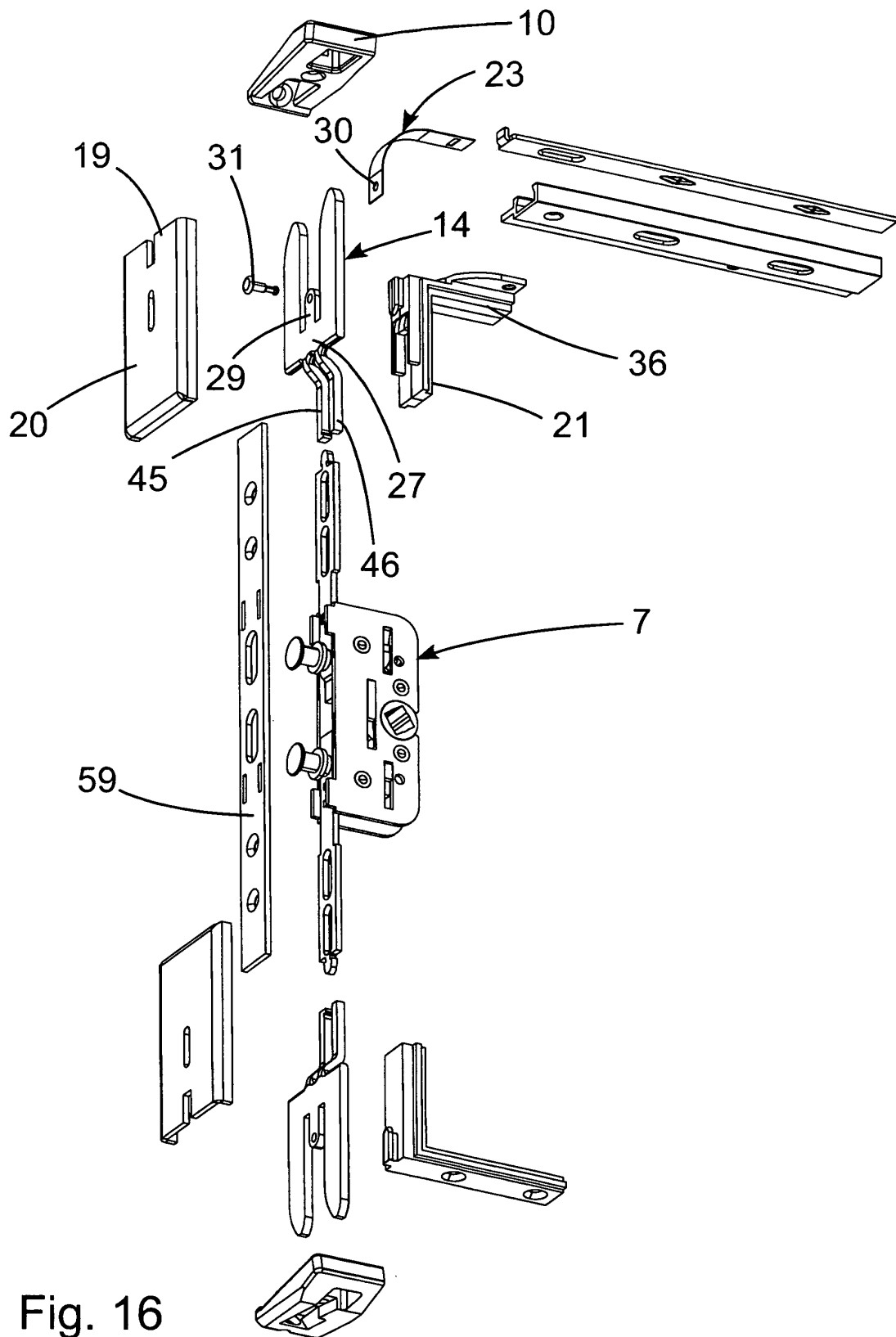
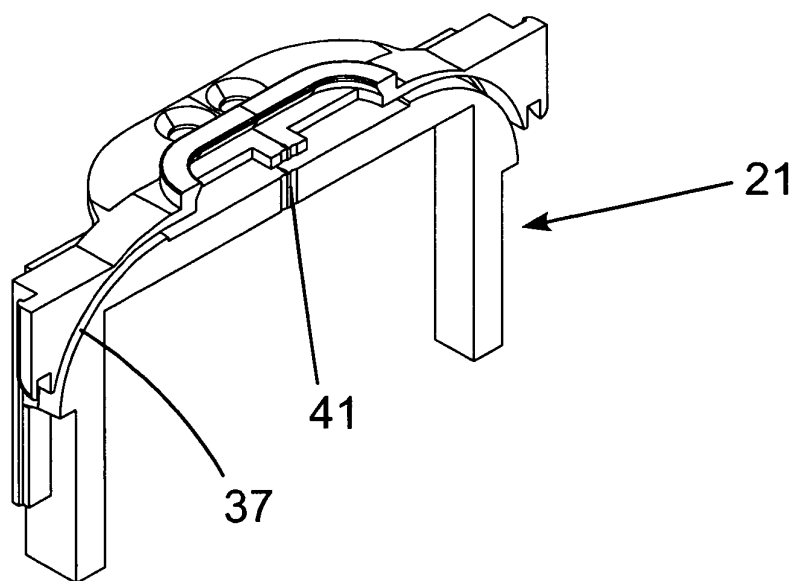
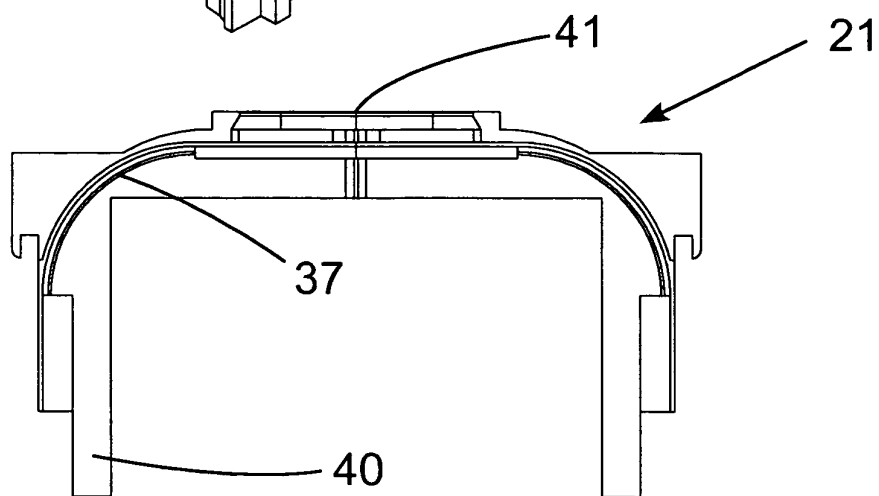
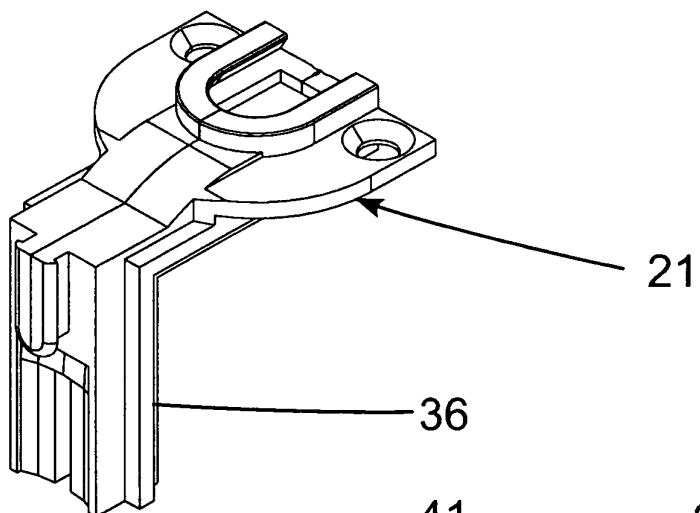


Fig. 16



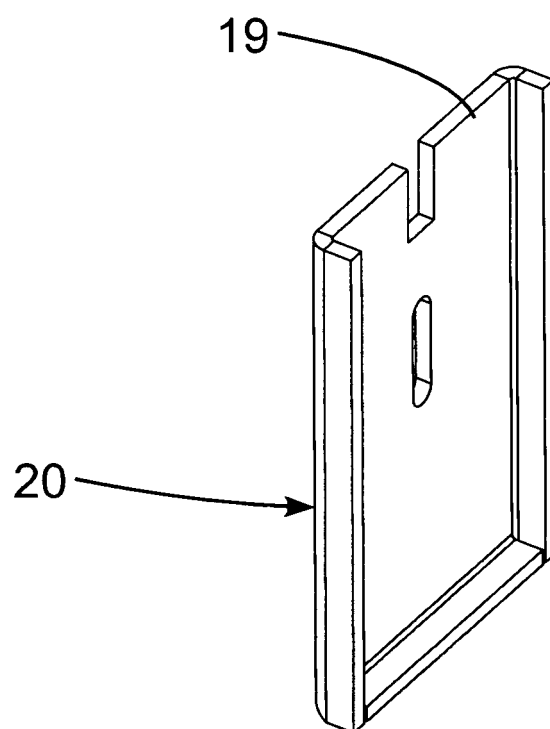


Fig. 20

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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