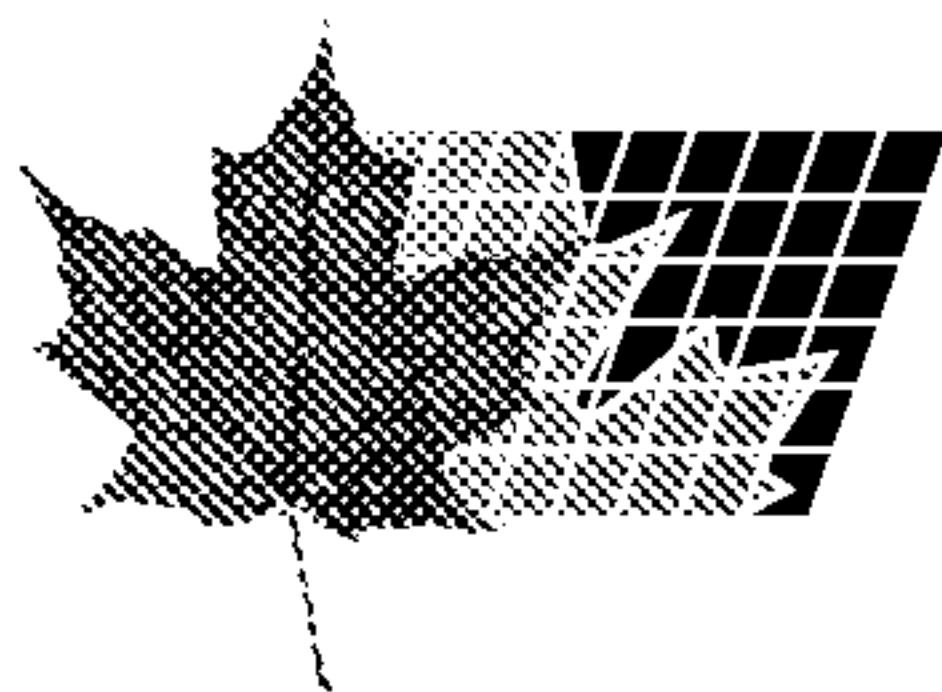




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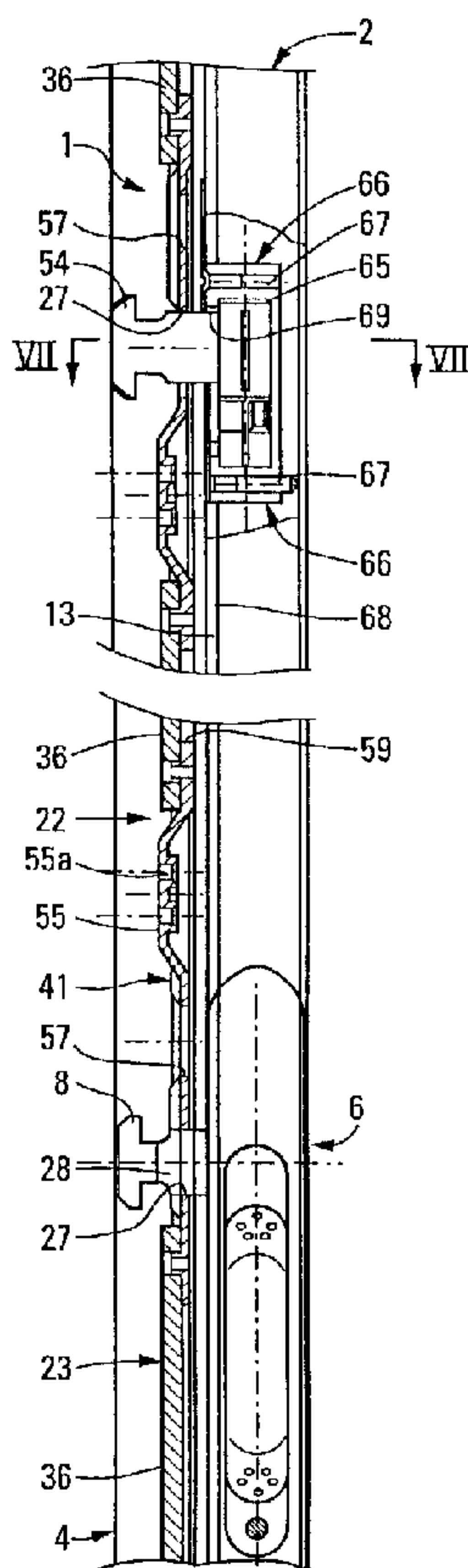
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(54) **FONDEMENT DE L'INVENTION D'UN DISPOSITIF DE
VERROUILLAGE POUR PORTES COULISSANTES,
FENETRES ET ARTICLES SEMBLABLES**

(54) **LOCKING DEVICE FOR SLIDING DOORS, WINDOWS AND
THE LIKE BACKGROUND OF THE INVENTION**



(57) In a locking device for a sliding door, window or the like, an operating rod is slidingly surface-mounted on the leading edge of the door, window or the like. An entrainment member for the operating rod moves with the rod and bears on the back and the rims of a groove on the leading edge of the door, window or the like to guide the rod inside a passage on the leading edge of the door, window or the like. The entrainment member has a matching opening through which the body of a main bolt can pass so that the main bolt entrains the entrainment member when it is moved by an actuator mechanism of the device.

ABSTRACT OF THE DISCLOSURE

In a locking device for a sliding door, window or the like, an operating rod is slidably surface-mounted on the leading edge of the door, window or the like. An
5 entrainment member for the operating rod moves with the rod and bears on the back and the rims of a groove on the leading edge of the door, window or the like to guide the rod inside a passage on the leading edge of the door, window or the like. The entrainment member has a
10 matching opening through which the body of a main bolt can pass so that the main bolt entrains the entrainment member when it is moved by an actuator mechanism of the device.

LOCKING DEVICE FOR SLIDING DOORS, WINDOWS AND THE LIKE
BACKGROUND OF THE INVENTION

Field of the invention

The invention concerns a locking device for a
5 sliding door, window or the like equipped with a lock
fitting having an actuator mechanism adapted to operate
on a locking member, more particularly a hooked bolt
projecting from the leading edge of said sliding door,
window or the like to cooperate with a keeper disposed in
10 corresponding relationship thereto on the frame, said
locking member being moved by the actuator mechanism
parallel to said upright of the sliding door, window or
the like.

The present invention has applications in the field
15 of fittings for buildings and is more particularly
concerned with locking devices for sliding doors, windows
and the like.

Description of the prior art

Lock fittings for sliding doors, windows and the
20 like include those which are surface-mounted on the door,
window or the like and those which are embedded in the
leading upright thereof.

A lock fitting of either type is usually adapted to
operate on a single locking member, more particularly a
25 hooked bolt, adapted to cooperate with a keeper disposed
on the corresponding upright of the frame.

The sliding door, window or the like is frequently
an assembly of metal or man-made material sections which
usually delimit a tubular internal chamber that has
30 already been used for multiple point locking by lock
fittings such as those described above.

Document FR-A-2 632 343 describes a lock fitting
for a sliding door, window or the like comprising a
cartridge surface-mounted on the inside face of the
35 leading upright of said sliding door, window or the like

and accommodating a hooked bolt. The bolt can be operated either from outside using a key or from inside using a slide operated by a holding member.

5 The lock fitting as described in the above prior art document includes an operating rod extending above and/or below the aforementioned cartridge and sliding in a plate accommodated in the tubular leading upright of the sliding door, window or the like. Finally, the actuator mechanism of the above lock fitting operates the
10 hooked bolt and said operating rod simultaneously, the operating rod including means for cooperating with immobilizing members attached to the frame.

Obviously, a lock fitting of the above kind with multipoint locking cannot be fitted to a sliding door,
15 window or the like which does not have them without profoundly modifying it. Moreover, in such an eventuality, it is not feasible to re-use the single hooked bolt lock fitting that an existing sliding door, window or the like usually incorporates.

20 The same drawbacks are encountered in the case of the multipoint lock fitting described in document EP-A-0 757 146. The actuator mechanism is surface-mounted on the sliding door, window or the like, more particularly on its leading upright, which is in the form
25 of a section delimiting an internal tubular chamber. The actuator mechanism operates on a rod which can move vertically inside the tubular chamber to operate on locking members in the form of hooked bolts accommodated in cartridges which are also inside the tubular chamber
30 of the section. A hooked bolt of the above kind projects from the leading edge of the sliding door, window or the like through an opening formed in it.

On the leading edge of sliding doors, windows or the like of the above kind in which the leading upright
35 is a section with a tubular internal chamber, the section

further defines an approximately U-shaped groove in the bottom of which are openings for the hooked bolt(s) to pass through. A U-shaped groove of the above kind enables the sliding door, window or the like, once closed against the frame, to cover the keepers that are generally surface-mounted on the frame.

Finally, document EP-A-0 566 447 describes a lock fitting for a sliding door, window or the like including a central actuator mechanism designed to be enclosed in the tubular chamber delimited by the section defining the leading upright of the sliding door, window or the like. An assembly is surface-mounted in the bottom of the U-shaped groove on the leading edge of said door, window or the like and comprises an operating rod and plate receiving, along its length, locking members in the form of hooked bolts or the like adapted to cooperate with keepers in corresponding relationship on the frame.

The problem again arises of transmitting the action applied to the central actuator mechanism to the surface-mounted operating rod(s) in the groove on the leading edge of the sliding door, window or the like.

More particularly, if the sliding door, window or the like is already fitted with a single locking point type lock fitting, this must be removed from its housing and replaced with a fitting with multiple locking points, as described in document EP-A-0 566 447. This solution is therefore far from economical.

The present invention proposes a simple and inexpensive solution which, with minimum adaptation, instantaneously converts a standard lock fitting with a single hooked bolt type locking member into a multipoint lock fitting having all the advantages of and a similar degree of security to, if not greater than, fittings with multiple locking points like those described in the above summary of the prior art.

SUMMARY OF THE INVENTION

To this end, the invention consists in a locking device for a sliding door, window or the like the leading upright of which is a section defining, at the leading edge of the sliding door, window or the like, a U-shaped groove delimited by a bottom and two lateral walls having on their inside and at their free end at least one rim delimiting a passage, the leading upright being fitted with a lock fitting including an actuator mechanism adapted to operate on a main locking member, more particularly a hooked bolt, projecting from the leading edge of the sliding door, window or the like to cooperate with a keeper in corresponding relationship to it on the frame, the locking member being moved vertically by the actuator mechanism parallel to the leading edge of the sliding door, window or the like, the device including means for slidably surface-mounting an operating rod on the leading edge of the sliding door, window or the like, means being provided for simultaneously entraining the main locking member and the operating rod which includes means for entraining at least one auxiliary locking member, such as a hooked bolt or the like, adapted to cooperate with a keeper in corresponding relationship to it on the frame, wherein the means for slidably surface-mounting the operating rod on the leading edge of the sliding door, window or the like consist in means for guiding the operating rod moving with the rod and adapted to bear on the bottom and the rims to guide the rod in the passage and wherein the guide means include or the rod includes a matching opening through which the body of the main bolt passes so that the main bolt entrains the guide means and/or the rod when it is moved by the actuator mechanism of the fitting.

The essential advantage of the present invention is that the locking device can be fitted to virtually any

type of sliding door, window or the like including a single point lock fitting. The locking device transmits the impulsion communicated to the single locking point through the actuator mechanism, via an operating rod, to
5 other locking members adapted to secure further the sliding door, window or the like.

As will emerge hereinafter, the locking device can be adapted to the configuration of the section usually constituting the leading upright of such sliding doors,
10 windows or the like in order to integrate it therein subject to a limited number of modifications to the sliding door, window or the like.

In fact, the present invention provides a total response to current requirements in the field of locking
15 sliding doors, windows or the like.

Other aims and advantages of the present invention will become apparent in the course of the following description referring to embodiments of the invention by way of illustrative and non-limiting example only.

20 BRIEF DESCRIPTION OF THE DRAWINGS

An understanding of the description will be facilitated by referring to the accompanying drawings, in which:

- figure 1 is a view in elevation and longitudinal
25 section of one embodiment of a locking device in accordance with the invention;

- figure 2 is a diagrammatic sectional view of a section constituting the leading upright of a sliding door, window or the like, which section accommodates the
30 locking device in accordance with the invention;

- figure 3 is a view similar to figure 2 but corresponding to a different embodiment of the invention;

- figure 4 is a view similar to figure 1 showing a different embodiment of the present invention in which
35 the auxiliary bolt is a fixed bolt;

- figure 5 is a view similar to figure 4 of a variant of the figure 4 embodiment of the invention in which the auxiliary bolt is adjustable from the outside;

- figure 6 is a view similar to figure 4 of another
5 embodiment of the invention; and

- figure 7 is a view in section taken along the line VII-VII in figure 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in the accompanying drawings, the present
10 invention is more particularly concerned with a locking device 1 applicable to a sliding door, window or the like 2 of which only the leading upright 3 is shown, diagrammatically, in figure 1.

As shown in figures 2 and 3, the leading upright 3
15 of a sliding door, window or the like 2 is very frequently defined by a section 4 delimiting an internal tubular chamber 5.

This houses a lock fitting 6 which, in a cartridge 7 placed in the tubular chamber 5, includes an actuator
20 mechanism adapted to operate on a main locking member 8, usually in the form of a hooked main bolt. The bolt projects from the leading edge 9 of the sliding door, window or the like 2 so that it can cooperate with a striker 10 in corresponding relationship to it on the
25 upright 11 of the frame 12, also shown only in part and diagrammatically in figure 1. The actuator mechanism moves the locking member 8, to be more precise the hooked bolt, vertically, parallel to said upright 3 of the sliding door, window or the like 2, between a locked
30 position and an unlocked position.

The hooked bolt 8 frequently projects from the bottom 13 of a U-shaped groove which is also defined by the section 4 along the leading edge 9 of the sliding door, window or the like 2. When the sliding door,
35 window or the like 2 is closed, a U-shaped groove like

the groove 14 encloses the keeper 10 that is generally surface-mounted on the upright 11 of the frame 12. A keeper 10 of the above kind can be placed in a U-shaped groove on the upright 11 of the frame 12 adapted to nest within the U-shaped groove 14 corresponding to the leading edge 9 of the sliding door, window or the like 2.

The lateral walls 15, 16 delimiting the U-shaped groove 14 with the bottom 13 frequently have on their inside 17 and at their free end 18 two parallel ribs 19, 20 defining a substantially T-shaped groove 21 for receiving brushes or seals (not shown).

The locking device in accordance with the invention includes means 22 for slidably surface-mounting an operating rod 23 on the leading edge 9 of the sliding door, window or the like 2. The operating rod 23, provided with one or more locking members 25 adapted to cooperate with keepers 26 in corresponding relationship to them on the frame 12, includes an opening 27 through which passes the locking member 8, to be more precise the hooked bolt of the lock fitting 6, so that said operating rod 23 and the locking member 8 move together.

The locking member, usually in the form of a hooked bolt, is often demountable, meaning that the body 28 of the locking member 8 can be extracted from the cartridge 7 corresponding to the lock fitting 6. This is often because the locking member 8 cooperates with means for adjusting its projecting part relative to the leading edge 9 of the sliding door, window or the like 2.

When mounting the rod 23 on the sliding door, window or the like 2, to be more precise in the U-shaped groove 14 defined by the section 4, the first step is to remove the locking member 8. The operating rod 23 is then fitted so that its opening 27 lines up with the opening in the bottom 13 of the U-shaped groove 14 through which the locking member 8 passes. At this stage

all that is required is to re-insert the body 28 of the latter into the cartridge 7. The opening 27 in the operating rod 23 can therefore be closely matched to the cross section of the body 28 of the locking member 8.

5 The means 22 for slidably surface-mounting the operating rod 23 on the leading edge 9 of the sliding door, window or the like 2 advantageously comprise means 29 for guiding the operating rod 23 inside the passage 30 delimited by the bottom 13 of the U-shaped groove 14, the
10 lateral walls 15, 16 and the first rims 19 on the inside 17 and at the free end 18 of said walls 15, 16.

In a simplified configuration, said guide means 29 merely consist in matching the thickness of the operating rod 23 to the depth 31 of the passage 30.

15 However, given that the depth 31 of the passage 30 can be relatively large and that, consequently, an operating rod 23 of matching thickness would be too heavy, said guide means 29 preferably consist in edges 32, 33 of the operating rods 23 shaped over all or part
20 of their length in order to be guided between the first rims 19 on the lateral walls 15, 16 of the U-shaped groove 14 and the bottom 13. To this end, such edges 32, 33 can be an integral part of the operating rod 23 (see figure 3) or portions of additional parts laterally
25 associated with said operating rod 23 defined by a simple flat metal strip (see figure 2).

Accordingly, as shown in figure 1, an operating rod 23 of the above kind can have crimped, riveted or otherwise attached to it over all of its length one or
30 more locking members 25, which here are also shown as hooked bolts. However, the present invention is not limited to this configuration of the locking members 25 which can be implemented differently and in particular in the form of a T-section stud adapted to cooperate with a
35 keeper 26 on the frame 12 in the manner of a buttonhole.

As just explained, the frame 12 receives keepers 10, 26 in corresponding relationship to the locking members 8, 25 and which, when the sliding door, window or the like 2 is closed, are inside the U-shaped groove 14 on the leading edge 9 of the door, window or the like.

The operating rod 23 normally reduces the depth 34 of the U-shaped groove 14 and so, in line with the keepers 10, 26, can have bends 35 limiting its overall size in the U-shaped groove 14 by positioning it nearer the bottom 13 in front of the keepers 10, 26.

The operating rod 23 can take the form of connecting rod portions 36 linking curved rod portions 37 receiving a locking member 25.

Where they join at 38, the connecting rod portions 36 and the curved rod portions 37 can overlap to produce an additional thickness 39 matched to the depth 31 of the passage 30 in the section 4 intended to receive the operating rod 23. This additional thickness 39, obtained by superposing connecting rod portions 36 with a curved rod portion 37, can in itself constitute the guide means 29.

In the embodiment shown in figures 4 and 5 means 41 are provided for guiding the operating rod 23 which move with the rod 23 and bear on the bottom 13 and the rims 19 of the groove 14 to guide the rod 23 inside the passage 30.

The mounting means 41 include a matching opening 27 through which the body 28 of the main bolt 8 passes so that the main bolt 8 entrains the mounting means 41 and the rod 23 when it is moved by the actuator mechanism of the fitting 6.

In the embodiment shown in figures 4 and 5, the operating rod 23 comprises at least one rod portion 36 connected at each end to an entrainment member 41 attached to the main bolt 8 or an auxiliary bolt 25, 54.

As shown in figures 7 to 9, each entrainment member 41, 41a has surfaces 42, 43 adapted to slide along the bottom 13 of the groove 14 and the inside faces 44 of the rims 19, and longitudinal lateral edges 45, 46; 48, 49 adapted to guide the entrainment member 41, 41a laterally inside the passage 30.

In the embodiment shown in figures 7 to 9, the lateral edges 45 and 46 of the entrainment member 41a extend in the lateral direction 52 between the bottom 13 and the faces 44 and have the surfaces 42 and 43 respectively adapted to come into contact with the bottom 13 and the inside faces 44 of the rims 19.

More particularly, and with the structure shown of the section 4, the surfaces 42 of the lateral edges 45, 46 are in fact in contact with shaped portions 50 of the section 4 projecting relative to the lateral walls 15 and 16 of said section 4.

In this example the entrainment member 41a has a central body 47 which projects between the ends 51 of the rims 19 and the longitudinal lateral edges 48, 49 of which respectively bear on the ends 51 of the rims 19 to guide the entrainment member laterally inside the passage 30.

The lateral edges 45, 46 could instead extend as far as the lateral walls 15 and 16 to provide this lateral guidance.

Each entrainment member 41, 41a includes an opening 27 through which passes the body 28 of a main bolt 8 or auxiliary bolt 54 of a predetermined type.

Each entrainment member 41, 41a further includes, where applicable means 55 for fixing to the drive member 41, 41a a non-adjustable bolt 25 and/or a matching opening 56 through which passes the body of an adjustable bolt (not shown) of another predetermined type and/or an opening 57 through which passes a feeler member of an

anti-misoperation unit of any type (not shown).

In the example shown in figures 8 and 9 the adjustable bolt (not shown) is, for example an adjustable bolt whose clamping screw passes through the lateral wall
5 15 or 16 of the section 4. It is a bolt of the type described in French patent application FR 97 04 068, for example.

Accordingly, the opening 56 is a rectangular opening the small thickness of which corresponds,
10 allowing for the necessary assembly clearance, to the thickness of the body of said bolt, i.e. substantially the thickness of the body 28 of the bolt 8.

In the example shown, the means 55 for fixing a non-adjustable bolt 25 comprise two substantially square
15 section holes 55a each adapted to receive a stud 58 of corresponding section attached to the bolt 25 for fixing said bolt 25 by crimping, riveting or like means.

The opening 27 through which the bolt 8, 54 passes is wide in the example shown so that it can receive a
20 bolt adjustable by means of an adjuster screw that is slightly offset laterally relative to said bolt and accessible via the edge 9 of the section 4 through said opening 27. The width of the opening 27 enables the adjuster screw to be moved at will either side of the
25 corresponding bolt, according to local conditions of installation of the sliding door, window or the like 2.

The opening 57 is designed to receive more than one type of feeler member of anti-misoperation units known
per se.

30 At each end the entrainment member 41, 41a has a lug 59 through which there is a hole 60 for fixing the edge of a rod 36, for example using a rivet 61.

The entrainment member 41, 41a can be designed and made without restrictions by disposing the means
35 described hereinabove in any manner provided that each of

the means can fulfil its function.

An entrainment member 41, 41a can therefore be provided with a single opening or with a plurality of openings so that the member 41, 41a can be used on a large number of existing sliding doors, windows or the like.

In the example shown in figures 8 and 9, the entrainment member 41a has a central body 47 projecting between the rims 19 of the groove 14 and consisting of the two end lugs 59 and the portion 47a carrying the means 55 for fixing a fixed bolt 25. The openings 27, 56 and 57 are substantially formed in a substantially plate-like portion 62 terminating in longitudinal lateral edges 45 and 46.

In the alternative embodiment shown in figures 4 and 5, the lugs 59 are in contact with the bottom 13 of the groove 14 and the entrainment member 41 includes a first opening 27 for any type of main or auxiliary bolt 8, 54, a second opening 57 for a feeler of an anti-misoperation unit, and means 55 for fixing a non-adjustable bolt 25. The lugs 59 are therefore wide enough and high enough to guide the entrainment member 41 between the bottom 13 and the rims 19.

Accordingly, each rod portion 36 fixed between the two entrainment members 41 or 41a can have dimensions such that it reliably fulfils its only function, which is to transmit the movement of the corresponding main bolt 8 to at least one auxiliary bolt 25, 54 or the like.

In the embodiment shown in figure 6, the operating rod 63 incorporates an opening 27 whose dimension in the longitudinal direction 64 of the section 4 and the rod 63 matches the corresponding dimension of the body 28 of the main bolt 8. This enables said body 28 to pass through the opening 27 so that said body 28 can entrain the rod 63 when the main bolt 8 is entrained by the actuator

mechanism of the lock fitting 6. The rod 63 also carries each non-adjustable auxiliary bolt 25 or additionally has a corresponding auxiliary opening 54a for each auxiliary bolt 54, the longitudinal dimension of which matches the corresponding dimension of the body of said auxiliary bolt 54. If the bolt is identical to the bolt 8, the opening 54a is identical to the opening 27. The various guide means 29 described hereinabove obviously apply to the rod 63.

10 Figures 4 to 7 show an auxiliary bolt 54 carried by an auxiliary bolt-carrier 65 mobile in the longitudinal direction 64 of the section 4 relative to an auxiliary cartridge 66 fixed by fixing means such as screws 67 to the inside face 68 of the wall forming the bottom 13 of
15 the groove 14.

The auxiliary cartridge is for example a cartridge as described in a French patent application filed the same day as that from which the present application claims priority.

20 We have generally described an entrainment member 37, 41, 41a such that a connecting rod portion 36 connected at each end to a drive member of the above kind is retained and guided inside the passage 30 of the U-shaped groove 14.

25 The entrainment member 37, 41, 41a can of course be inserted into the passage 30 from one end of the section 4. It can equally well be inserted into the passage 30 via cutouts (not shown) in the rims 19 in the portions of the section 4 far away from the main bolt 8 or auxiliary
30 bolts 25, 54, so as not to impede operation of the locking device 1.

If the auxiliary bolts are non-adjustable bolts 25, no other cutouts are needed.

If the auxiliary bolts are adjustable bolts 54, it
35 is necessary to provide in the wall constituting the

bottom 13 of the groove 14, for each auxiliary bolt 54, an opening 69 having sufficient dimensions in the longitudinal direction 64 and in the lateral direction 52 to enable longitudinal sliding and where applicable adjustment via said opening 69 of said auxiliary bolt 54.

The auxiliary cartridge 66 can also be inserted into the chamber 5 of the section 4 either from one end of the section or through a cutout (not shown) in the bottom 13 of the groove.

10 We have described a locking device suited to installing a multipoint locking system either when installing a new sliding door, window or the like or on converting an existing door, window or the like, such conversion being quick and easy.

15 The locking system with multiple bolts for a sliding door, window, patio door or the like 2 comprises a lock fitting 6 provided with an actuator mechanism adapted to operate a main bolt 8.

20 The locking system with a plurality of bolts in accordance with the invention, comprises at least one locking device 1 of the kind described hereinabove.

As emerges from the foregoing description, the locking device 1 in accordance with the invention provides an advantageous solution to the problem as stated, in that it allows conversion of a lock for sliding doors, windows or the like with a single locking point into a lock of the type with multiple locking points, without modifying said lock fitting 6 and, in some cases, without machining the leading edge 9 of the sliding door, window or the like 2.

30 Although the invention has been described with reference to particular embodiments, it is to be understood that it is in no way limited to those embodiments and that many modifications in terms of shapes, materials and combinations of the various

components can be made thereto without departing from the scope and spirit of the invention.

5 The entrainment member described hereinabove can of course be fitted with removable or modifiable edges for adapting said entrainment member to the exact dimensions of the rebate and the guide channel of the various kinds of section that are commercially available.

10 A standardized entrainment member can also be modified on site to match it to dimensions encountered locally. Because an entrainment member of the above kind is generally made of soft metal, for example zamac alloy, such adaptation can be carried out quickly, accurately and economically using simple and efficient portable electric tools.

THERE IS CLAIMED:

1. A locking device for a sliding door, window or the like the leading upright of which is a section defining, at the leading edge of the sliding door, window or the like, a U-shaped groove delimited by a bottom and two lateral walls having on their inside and at their free end at least one rim delimiting a passage, said leading upright being fitted with a lock fitting including an actuator mechanism adapted to operate on a main locking member, more particularly a hooked bolt, projecting from said leading edge of said sliding door, window or the like to cooperate with a keeper in corresponding relationship to it on the frame, said locking member being moved vertically by said actuator mechanism parallel to said leading edge of said sliding door, window or the like, said device including means for slidably surface-mounting an operating rod on said leading edge of said sliding door, window or the like, means being provided for simultaneously entraining said main locking member and said operating rod which includes means for entraining at least one auxiliary locking member, such as a hooked bolt or the like, adapted to cooperate with a keeper in corresponding relationship to it on said frame, wherein said means for slidably surface-mounting said operating rod on said leading edge of said sliding door, window or the like consist in means for guiding said operating rod moving with said rod and adapted to bear on said bottom and said rims to guide said rod in said passage and wherein said guide means include or said rod includes a matching opening through which the body of said main bolt passes so that said main bolt entrains said guide means and/or said rod when it is moved by said actuator mechanism of said fitting.

2. The locking device claimed in claim 1 wherein said guides are constituted by a thickness of said operating rod matching the depth of said passage.

3. The locking device claimed in claim 1 wherein said guide means consist in edges of said operating rod shaped over all or part of the length of said operating rod to assure guidance between said rims of said lateral walls and said bottom of said U-shaped groove.

4. The locking device claimed in claim 3 wherein said edges are in the form of portions of additional parts associated laterally with said operating rod.

5. The locking device claimed in claim 1 wherein said operating rod has bends to limit its overall size inside said U-shaped groove in front of said keepers on said frame and adapted to cooperate with locking members respectively corresponding to said operating rod and said lock fitting.

6. The locking device claimed in claim 1 wherein said operating rod comprises connecting rod portions linking curved rod portions provided with a locking member.

7. The locking device claimed in claim 6 wherein said guide means consist in an increased thickness, matching the depth of said passage, obtained by superposing connecting rod portions and curved rod portions where they join.

8. The locking device claimed in claim 1 wherein said operating rod includes an opening whose dimension in the longitudinal direction of said rod matches the corresponding dimension of said body of said main bolt to enable said body to pass through said opening and to enable said rod to be entrained by said body when said main bolt is entrained by said actuator mechanism of said lock fitting, and wherein said rod further includes means for fixing at least one non-adjustable auxiliary bolt or further comprises, for each adjustable auxiliary bolt, a corresponding auxiliary opening whose longitudinal dimension matches the corresponding dimension of said body of said auxiliary bolt.

9. The locking device claimed in claim 1 wherein said operating rod comprises at least one rod portion connected at each end to an entrainment member attached to said main bolt or an auxiliary bolt.

10. The locking device claimed in claim 9 wherein each entrainment member has surfaces respectively adapted to slide along said bottom of said groove and said inside faces of said rims, and longitudinal lateral edges adapted to guide said entrainment member laterally inside said passage.

11. The locking device claimed in claim 9 wherein each entrainment member includes a matching opening through which passes said body of a main bolt or an auxiliary bolt of a predetermined type and, where applicable, further comprises means for fixing to said entrainment member a non-adjustable bolt and/or a matching opening through which can pass the body of an adjustable bolt of another predetermined type and/or an opening through which can pass a feeler member of an anti-misoperation unit.

12. A locking system with a plurality of locking bolts for a sliding door, window or the like, comprising a lock fitting and at least one locking device as claimed in any one of claims 1 to 11.

Fig. 1

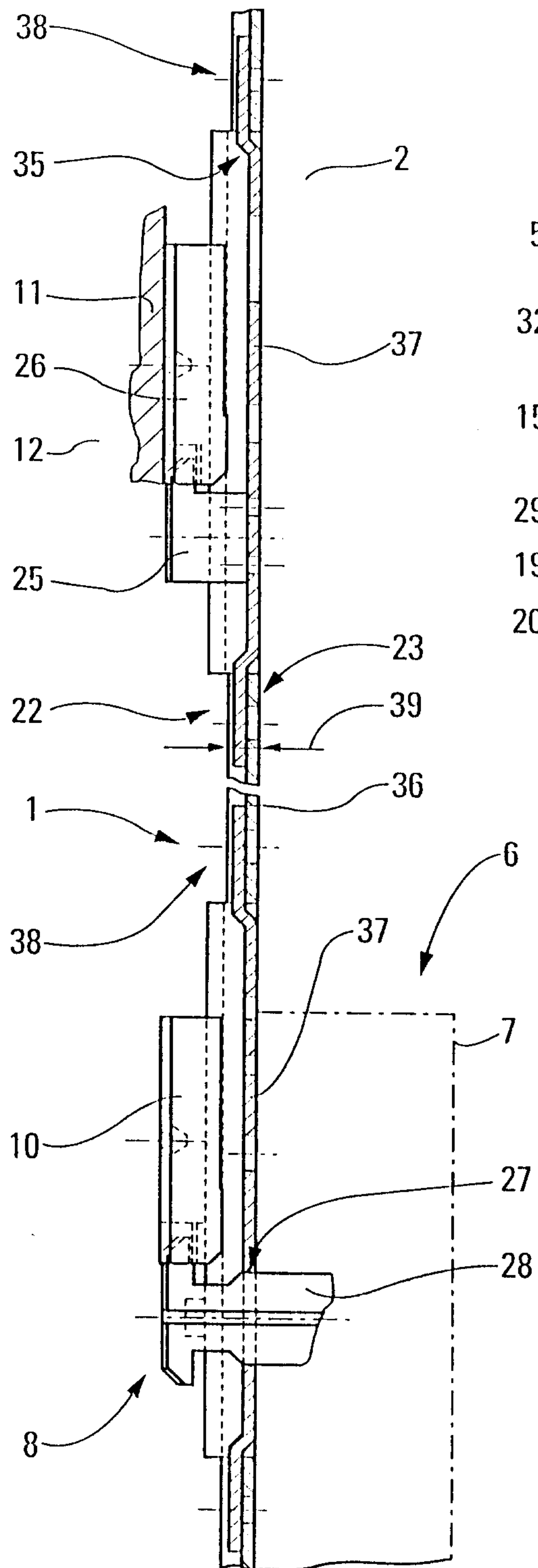


Fig. 2

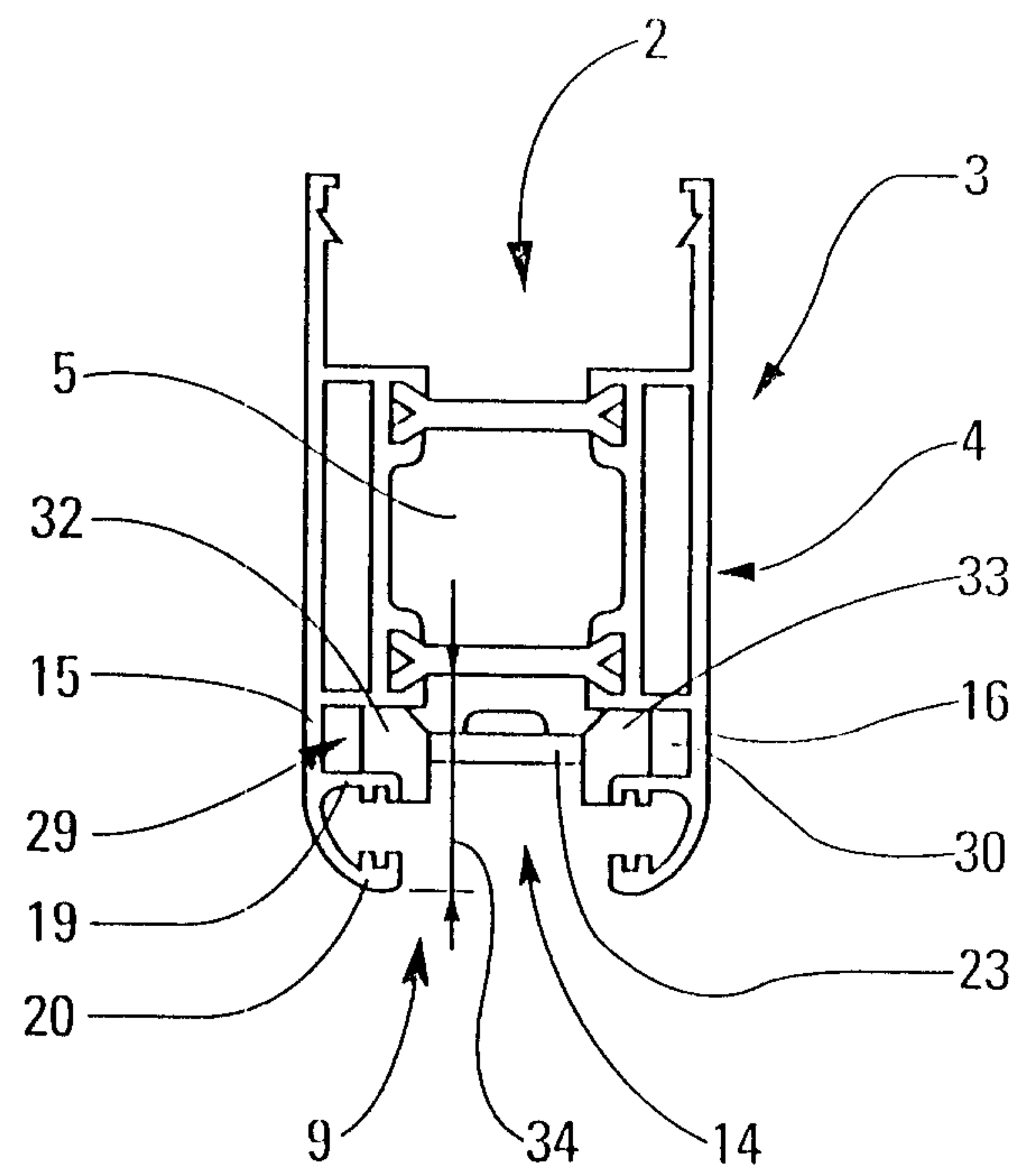
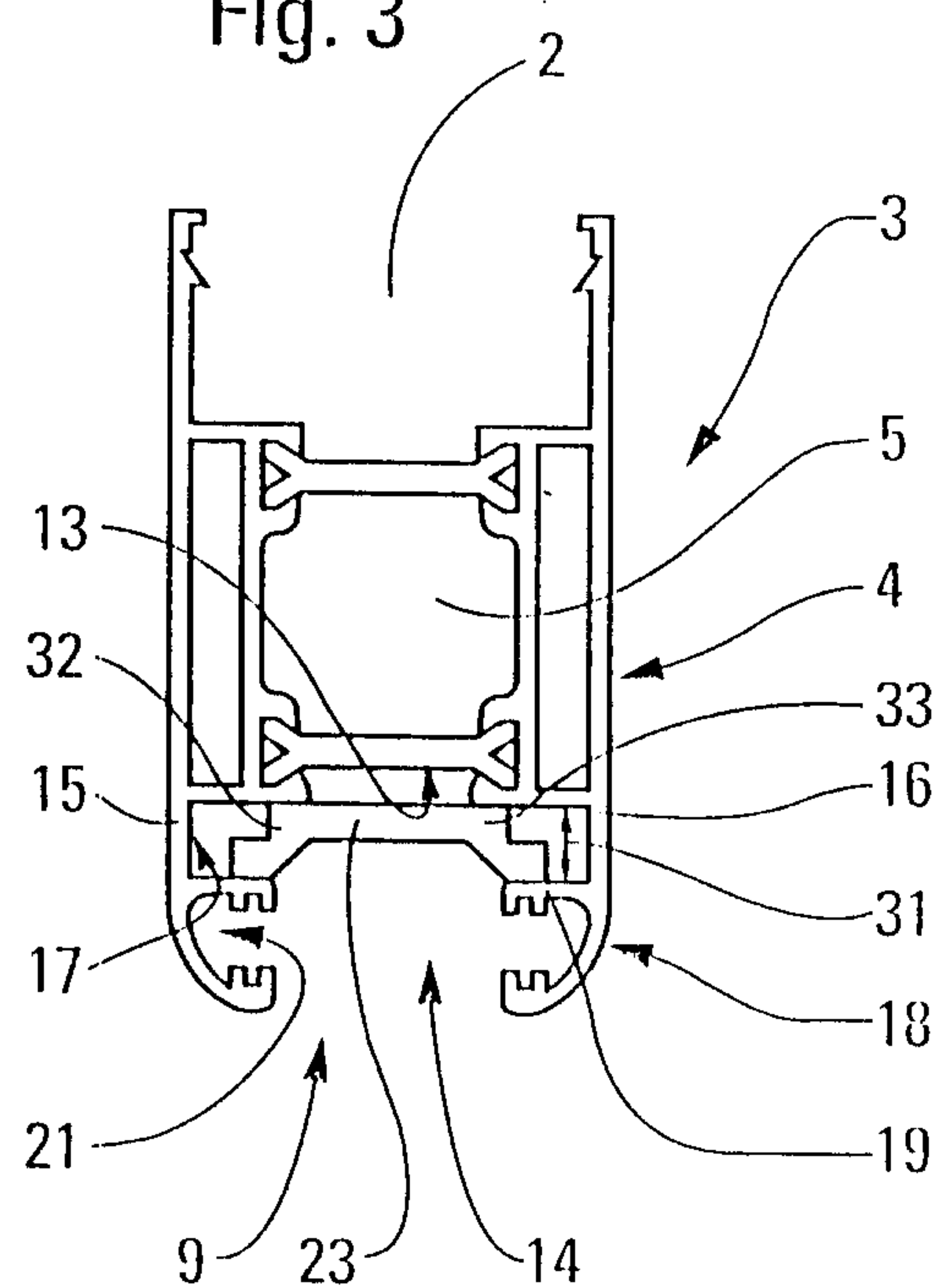
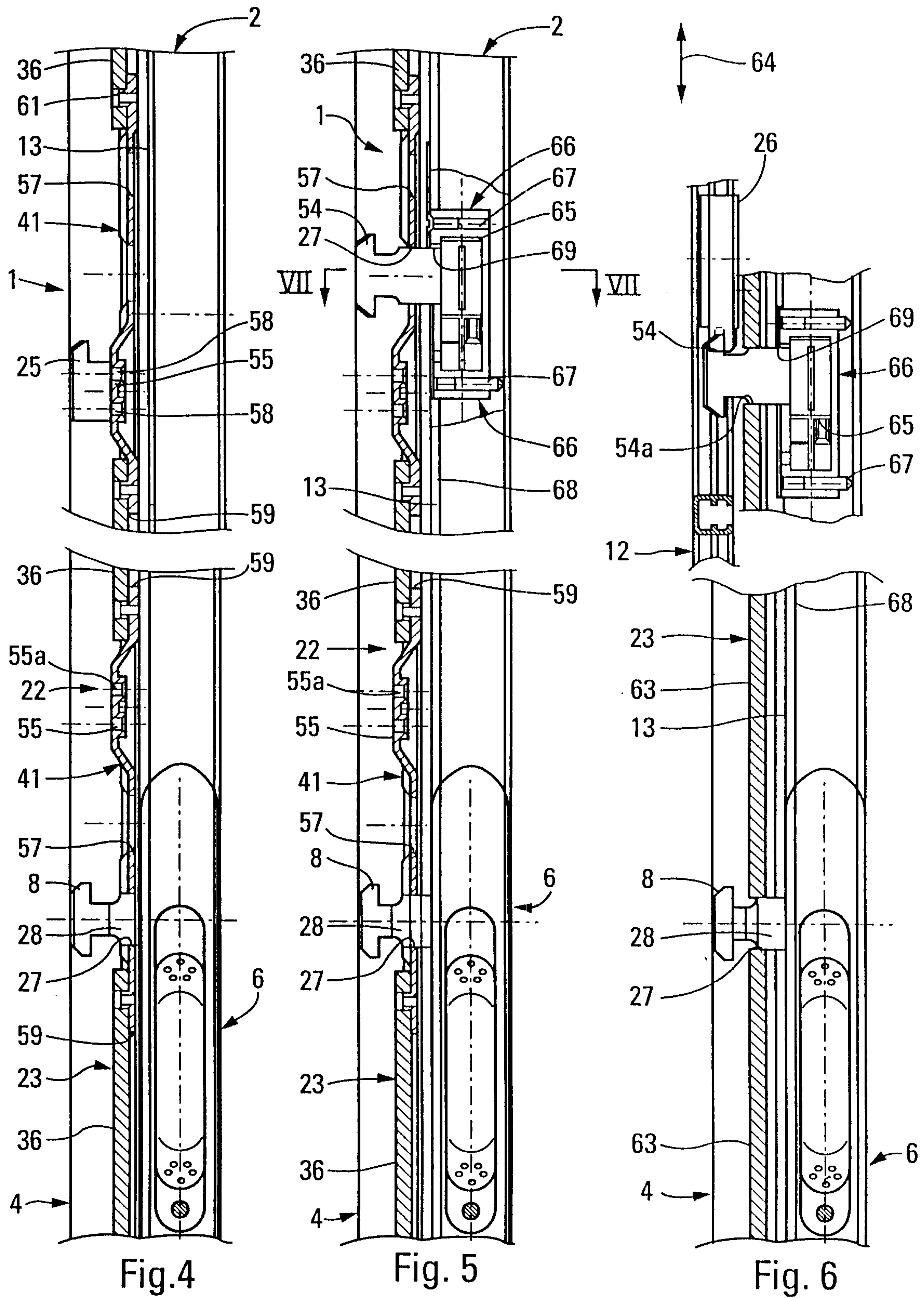


Fig. 3





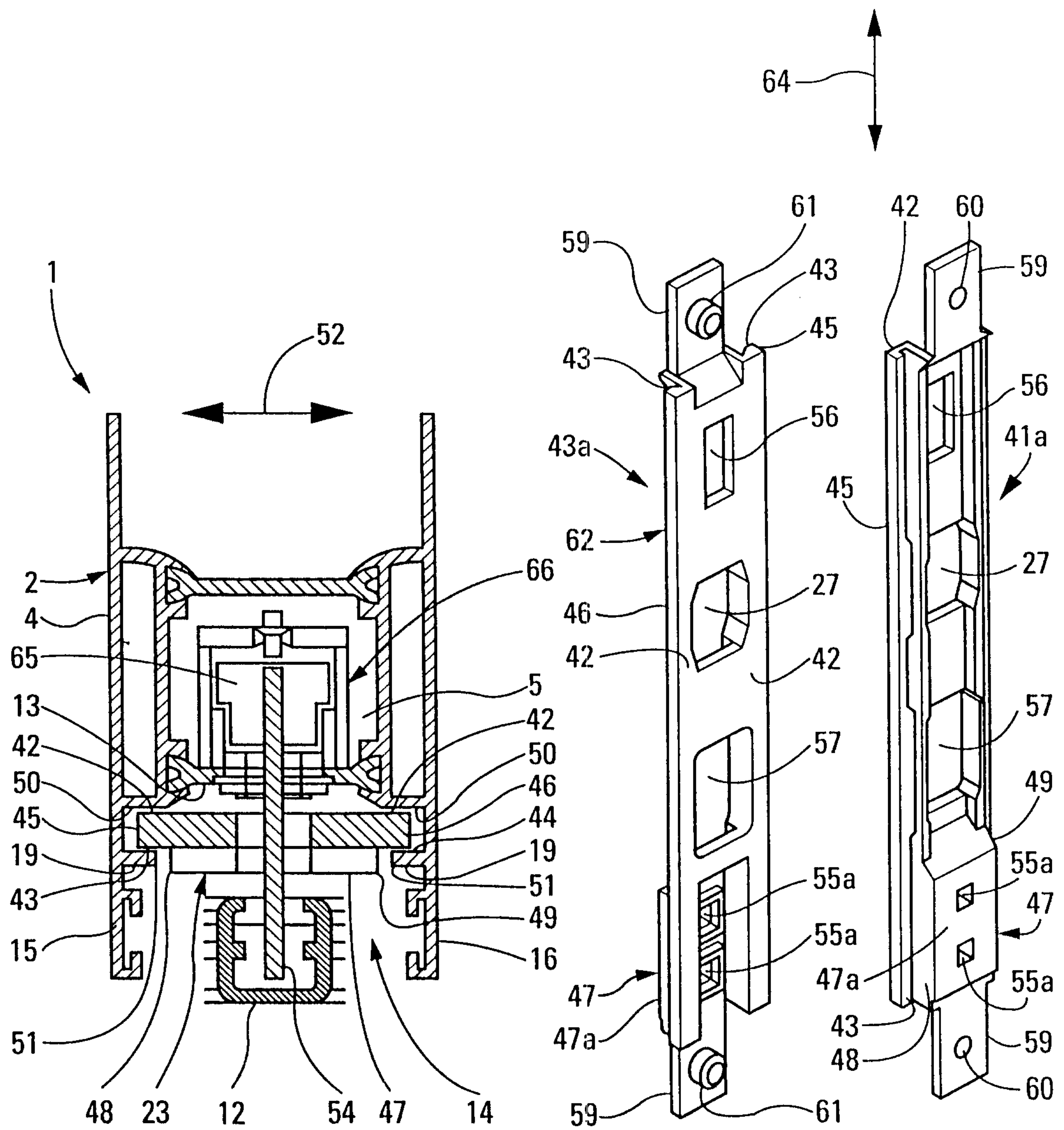


Fig. 7

Fig. 8

Fig. 9