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(72) Inventors:
• **ANDREU PALLEROLA, Roger**
08980 SANT FELIU DE LLOBREGAT (Barcelona)
(ES)
• **ANDREU PALLEROLA, Bernat**
08980 SANT FELIU DE LLOBREGAT (Barcelona)
(ES)

(71) Applicant: **Openers & Closers, S.L.**
08980 Sant Feliu de Llobregat (Barcelona) (ES)

(74) Representative: **Carbonell Callicó, Josep**
March Trademark, S.L.
Passeig de Gracia 103, 7^a planta
08008 Barcelona (ES)

(54) **STRIKE FOR MULTIPOINT LOCKS**

(57) The invention relates to a symmetrical strike for multipoint locks, which have a front portion provided with a recess (21) for receiving a latch of the lock and through holes (22a, 22b) in bolts of the multipoint lock, close to any one of the sides of the recess (21). The box of the strike is provided with two symmetrical sides (11a, 11b) with respect to a median plane (Y) of the box (11) and of the latch (12); said symmetrical sides (11a, 11b) are ar-

ranged between the through holes (22a, 22b) in the bolts, located on any one of the two sides, or on the two sides of the recess (21) of the front portion (2, 2a) of the lock, and the corresponding side of said recess of the front portion. The strike comprises a lever system and a terminal block assembly carrying a drive coil, which are adapted to the strike.

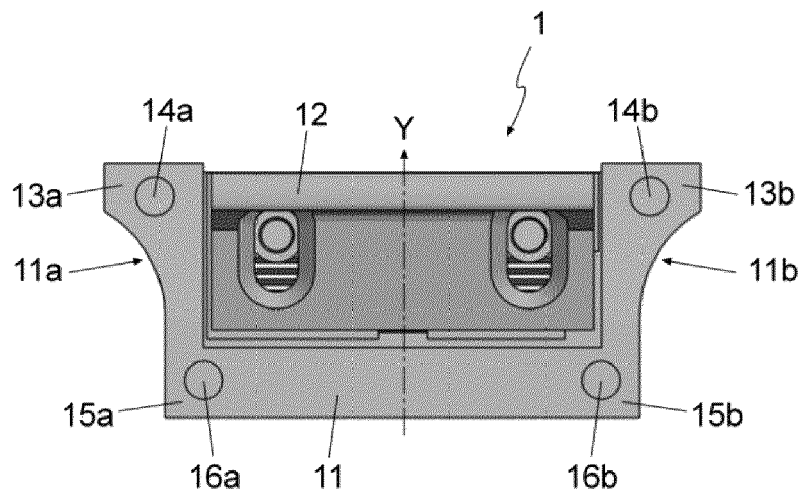


Fig. 1

Description

Technical field.

[0001] The present invention relates to a strike for locks, which has technical features especially suitable for multipoint locks that have a front portion fastened to the frame of a door including the lock and which has at least one row of through holes for bolts of the lock, very close to a recess defined in the front portion and suitable for receiving the latch of the lock when the door is closed.

Prior state of the art.

[0002] There are strikes currently on the market which are specially designed for reinforced doors with multipoint locks. These locks consist of bolts that are housed in through holes defined in a front portion intended to be fastened to the frame of a door, in a position facing the lock, one of said holes being very close, approximately 5 mm, to a recess defined in said front portion and through which the latch of the lock enters, when the door is in the closed position, to interact with the strike housed in a gap in the frame and fastened by means of screws to said front portion.

[0003] Since the previously mentioned separation is so small, the box of the strike extends towards the side of the front portion that does not have through holes for the bolts, providing the necessary space to house the coil, the terminal block for electrical connection and part of the mechanical locking system.

[0004] By having to extend part of the box of the strike towards the side opposite the lock, it is necessary to have two different types of boxes to provide strikes that can be installed in doors that open to the right or to the left. This way, based on whether the door opens to the right or to the left, mounted on the front portion is a strike with a box that projects to one side or the other on the side of the recess of the front portion, specifically towards the side opposite the one that has the through holes for the bolts of the lock.

[0005] The fact that the through holes for the bolts are so close to one side of the recess of the front portion of the strike makes it necessary to extend the box towards the other side of said recess to use strikes with the traditional mechanical locking and unlocking systems.

[0006] These strikes have a lever system inside the box, one of the levers being longer and thicker and the other being shorter and thinner. Furthermore, the base of the latch remains resting against the "long" lever, which makes contact with the "short" lever.

[0007] When the door presses against the strike, the front portion of the latch transmits the forces to the base of the latch by means of the screws and the contact surface. Then, the base of the latch transmits the force to an intermediate area of the long lever which, in turn, transmits it to the short lever. Lastly, the force is transmitted to the box by means of the shaft of the short lever.

[0008] In these known strikes, the latch exerts force on the long lever (in an upwards motion) and this lever pulls the short lever, which in this case blocks the movement and works by traction. Once the coil is actuated, the short lever moves, unlocking the strike; once the force is no longer exerted, it returns to its initial position by the action of springs.

[0009] This system makes it so the two levers have to withstand a considerable force when pressure is applied to the latch.

[0010] With regard to the fastening of the strike to the front portion, it must be mentioned that in these strikes the holes defined on both sides of the recess of the front portion are not symmetrical, since on the side of the front portion that does not have through holes for the bolts, the holes for fastening to the front portion are vertically aligned since they have no limit with regard to space, while on the side of the front portion provided with through holes for the bolts, the holes for fastening are not aligned, since the lower hole is displaced towards the recess of the front portion so that it does not coincide with the through hole for the bolts that is closest to said recess.

[0011] Therefore, the technical problem raised is the development of a strike that is able to interchangeably fit in multipoint locks mounted on doors that open to the right or to the left, without the risk of interference with the bolts that are housed in the holes of the front portion to which the strike is fastened and to allow the coupling thereof to the fastening holes defined in a specific front portion, or in the aforementioned existing front portions that have, on one side of the recess of the front portion, two vertically aligned fastening holes and, on the opposite side, two vertically unaligned fastening holes.

Description of the invention

[0012] The symmetrical strike for multipoint locks of this invention is of the type that comprises: a box, a locking and unlocking lever system of a hinged front latch, a drive coil of the lever system towards an open position, and mounting holes for said strike in a front portion of a multipoint lock provided with: a recess for receiving a latch of the lock, mounting holes for the fastening means of the strike with the hinged latch facing said recess and through holes for bolts of the multipoint lock, close to any one of the sides, or the two sides, of said recess.

[0013] This strike has technical features that allow it to be mounted on front portions of locks on doors that open to the right or to the left, in other words, both on front portions that have through holes for bolts on one side or the other of the recess for receiving the latch of the lock, or on both sides of said recess.

[0014] Another object of the invention is to provide said strike with features that allow it to be fastened to the holes of the front portion, regardless of whether said holes are vertically aligned or unaligned.

[0015] To achieve the objectives proposed, the box of the strike comprises two symmetrical sides with respect

to a median plane of the box and of the front latch of the strike, said symmetrical sides being arranged between the through holes for the bolts, located on any one side, or on the two sides of the recess of the front portion of the lock, and the corresponding side of said recess, which allows it to be used in multipoint locks for doors that open to the right or to the left.

[0016] This solution entails a reduction in the length of the strike with respect to strikes currently used and, therefore, the development of a compact drive mechanism.

[0017] According to the invention, the symmetrical sides of the box have an inward geometric shape, adapted to the contour of the through hole for the closest bolts and corresponding to the same side; said inward geometric shape defining an area of non-interference with regard to the box with the bolts.

[0018] This inward geometric shape can have a configuration that is concave curved, polygonal, stepped, oblique or any other suitable configuration for defining on the symmetrical sides of the box: a first laterally protruding end, in which first holes for mounting first fastening elements to the front portion of the lock are defined, and a second laterally inward end in which second holes for mounting second fastening means to the front portion of the lock are defined.

[0019] Advantageously, the first holes and the second holes are symmetrically arranged with respect to the median plane of the box and vertically unaligned, in a direction parallel to said median plane, given that the second holes are closer to the recess of the front portion of the lock; having envisaged in this case the use of a specific front portion that has holes with the same arrangement, in other words, symmetrically arranged with respect to the median plane of the box and vertically unaligned.

[0020] Considering that there are multipoint locks provided with a front portion having: on one side of the recess, a first upper hole vertically aligned with a second lower hole; and on the other side of the recess, a first upper hole and a second lower hole vertically unaligned with respect to said first hole and closer to the recess of the front portion, the strike of the invention has features that allow it to be adapted to this type of existing front portions.

[0021] Therefore, on the symmetrical sides, the box of the strike comprises cavities that open laterally, which perpendicularly intercept the second holes of the box and which are suitable for occasionally housing a positional adapter provided with: a first hole for fastening to a second hole of the box by means of a pin, and a second hole for mounting the second fastening means to the front portion of the lock.

[0022] This positional adapter allows a second hole to be defined in any of the sides of the box, displaced towards the outside of the box and vertically aligned with the first hole on the same side of the box, and which the strike can fasten to the already existing front portions, which have two vertically aligned holes arranged on one of the sides of the recess.

[0023] Due to the reduced length of this strike, it incorporates additional technical features included in the attached claims, aimed at allowing the terminal block, usually located on one of the sides of the box, to avoid being located in the path of the bolts, and to modify the locking and unlocking system of the latch of the strike with the aim of adapting it to the box and to reduce the force it receives during the pivoting of the latch towards the open position; and which shall be more readily understood in view of the description of the embodiments shown in the figures described below.

Brief description of the contents of the drawings.

[0024] As a complement to the description provided herein, and for the purpose of helping to make the features of the invention more readily understandable, the present specification is accompanied by a set of drawings which, by way of illustration and not limitation, represent the following:

- Figure 1 shows a front view of an exemplary embodiment of the symmetrical strike for multipoint locks according to the invention.
- Figure 2 shows a perspective view of the symmetrical strike of Figure 1 mounted in a specific front portion for a multipoint lock applicable to doors that open to the left and provided with mounting holes facing those of the strike.
- Figure 3 shows a perspective view of the symmetrical strike of Figure 1 mounted in a specific front portion for a multipoint lock applicable to doors that open to the right and provided with mounting holes facing those of the strike.
- Figure 4 shows a perspective view of the symmetrical strike of Figure 1 mounted in a specific front portion for a multipoint lock provided with through holes for the bolts of the lock on both sides.
- Figures 5a - 5e show front views of the strike with different geometries on the symmetrical sides.
- Figures 6 and 7 show front and side views, respectively, of a variant embodiment of the box of the strike provided with cavities on the opposing sides for mounting a positional adapter for any of the second holes of the strike and the adaptation thereof to conventional front portions provided with vertically aligned holes on one side of the recess of the front portion.
- Figure 8 shows an exploded perspective view of the box of the enclosure and of a positional adapter with the corresponding mounting pin.
- Figure 9 shows an exploded perspective view of the positional adapter mounted on one of the side cavities of the box of the strike.
- Figure 10 shows a perspective view of the strike of Figure 9 mounted on a conventional front portion for doors that open to the right, provided with two vertically aligned holes on the right side of the recess of

the front portion.

- Figure 11 shows a view of the strike provided with a positional adapter on the left side thereof, mounted on a conventional front portion for doors that open to the right, provided with two vertically aligned holes on the left side of the recess of the front portion.
- Figure 12 shows a perspective view of an exemplary embodiment of a terminal block assembly applicable to the strike of the invention, provided with a base support, a terminal block with a PCB and a coil with a mounting support on said base support.
- Figures 13 and 14 show upper and lower perspective views, respectively, of the terminal block with a PCB mounted on the base support.
- Figure 15 shows a perspective view of the coil mounted on the corresponding support.
- Figures 16 and 17 show rear perspective views of the terminal block assembly of Figure 12 during the mounting thereof in the rear area of the box of the strike.
- Figures 18 and 19 show partial perspective views of the strike, wherein one can see the lever system located inside the box of the strike.
- Figure 20 shows a plan view of the strike of the invention without the top cover to allow for the observation of the lever system housed in the box.
- Figures 21, 22 and 23 show perspective views of a partial cross section of the strike, which show, in different positions, the system in charge of keeping the strike unlocked, from the actuation of the coil to the opening of the door.
- Figures 24 and 25 show perspective views of the strike provided with a cover with a portion projecting above the latch, which is mounted in a lower height position, and has been represented in a closed position and in an open position, respectively.
- Figures 26 and 27 show similar views to those of Figures 24 and 25, wherein the latch is fastened at a higher height position.

Detailed description of embodiments of the invention.

[0025] Figure 1 shows an exemplary embodiment of the symmetrical strike (1) of the invention which is provided with a box (11) containing a locking and unlocking device for a hinged latch (12) for retaining or releasing a latch of a multipoint lock (not shown), and which is intended to be mounted on a specific front portion (2) of the multipoint lock, as shown in Figures 2 to 4.

[0026] The front portion (2) of the lock has a recess (21), as is common, for receiving a latch of the lock and through holes (22a, 22b) for the bolts of the multipoint lock, arranged on any one of the sides of said recess (21), as shown in Figures 2 and 3, or on both sides of the same, as shown in Figure 4, the first of the through holes (22a, 22b) being very close to the mentioned recess (21).

[0027] To allow for the mounting of the strike (1) in any of said front portions (2), the strike, regardless of the position of the through holes (22a, 22b) for the bolts, comprises two symmetrical sides (11a, 11b) with respect to a median plane (Y) of the box (11) and of the latch (12), the box (11) being dimensioned so that in the mounting position on the front portion (2), said symmetrical sides (11a, 11b) are arranged between the through holes (22a, 22b) for the bolts, located on any one of the sides, or on the two sides of the recess (21) of the front portion (2), and the corresponding side of said recess (21) of the front portion (2).

[0028] The symmetrical sides (11a, 11b) of the box (11) have an inward geometric shape, adapted to the contour of the closest through hole (22a, 22b) and corresponding to the same side; and which defines an area of non-interference with regard to the box with the bolts.

[0029] As can be observed in Figures 5a - 5e, this inward geometric shape can have different configurations, for example: concave curved, polygonal, oblique, oblique-stepped or stepped at an angle, respectively, although these shapes are not limiting.

[0030] On the symmetrical sides (11a, 11b) of the box (11), the aforementioned geometric shape defines a first projecting end (13a, 13b) and a second inward end (15a, 15b), in which first mounting holes (14a, 14b) and second mounting holes (16a, 16b) are defined, respectively, for mounting fastening screws to the front portion (2) of the lock.

[0031] In this embodiment, the first holes (14a, 14b) and the second holes (16a, 16b) are arranged symmetrically with respect to the median plane (Y) of the box; vertically unaligned, the specific front portion (2) having first holes (23a, 23b) and second holes (24a, 24b) coinciding with those of the box (11) of the strike (1).

[0032] With the previously mentioned features, this strike can be mounted on front portions of multipoint locks for doors that open to the right or to the left, which have through holes (22a, 22b) on any one of the sides of the recess (21) of said front portion or on the two sides of the recess, as shown in Figures 2 to 4.

[0033] To allow for the mounting of the strike on conventional front portions (2a), provided with a second hole (24c) vertically aligned with one of the first holes (23a, 23b), such as that shown in Figures 10 and 11, a variant embodiment has been envisaged, shown in Figures 6 to 9, wherein on the symmetrical sides (11a, 11b) thereof the box (11) of the strike (1) has cavities (17a, 17b) that open laterally, which perpendicularly intercept the second holes (16a, 16b) of the box (11), which are vertically inward with respect to the first holes (14a, 14b).

[0034] Said cavities (17a, 17b) are suitable for occasionally housing, in any side of the box (11), a positional adapter (3), shown in Figure 8 in an unmounted position and in Figure 9 mounted in the cavity (17b) on the right side of the box (11).

[0035] Said adapter (3) comprises a first hole (31) for the fastening thereof inside any of the side cavities (17a,

17b) of the box by means of a pin (4) mounted through the corresponding second hole (16a, 16b); and a second hole (32) vertically aligned with the first hole (14a, 14b) on the same side of the box (11) and suitable for mounting the strike on a conventional front portion (2a) provided with a second hole (24c) vertically aligned with a first hole (23a, 23b).

[0036] This adapter (3) allows for the repositioning of current front portions existing on the market, and for defining on the box (11) a first mounting hole (31), vertically aligned with the hole (14a) and the second mounting hole (32), vertically aligned with the hole (14b) and, therefore, the mounting of the strike on front portions (2a) that have a second hole (24c) that is vertically aligned with any one of the first holes (23a, 23b) as shown in Figures 10 and 11.

[0037] Given that the proposed solution considerably reduces the length of the strike with respect to those that currently exist, this strike comprises a terminal block assembly (6) that avoids any interference of the terminal block for electrical connection with the path of the bolts, and a lever system (71, 72) suitable for being housed in a box (11) with a reduced size, without said levers having to withstand considerable force when pressure is applied to the latch.

[0038] Specifically, to solve the problem posed by the symmetry of the strike and the proximity to the bolts of the lock, this strike comprises a terminal block assembly (6) with a length that is equal to or less than that of the box (11), represented in a mounted position in Figure 12, and which comprises a base support (61) provided with anchors (66) for the coupling thereof to the rear area of the box (11) of the strike, and on which a terminal block (62) with a PCB (63) and a coil (64) with the corresponding coil support (65) are mounted.

[0039] As shown in Figures 13 and 14, the terminal block (62) with a PCB (63) is initially coupled to the base support (61). Then, the assembly shown in Figure 15 is mounted on said base support (61), the assembly being formed by the coil (64) and the coil support (65), to obtain the mounted terminal block assembly (6), as shown in Figure 12, such that said coil (64) is arranged in a gap defined behind the latch (12) and which is practically the same length as said latch (12).

[0040] Figures 16 and 17 show the mounting of the terminal block assembly (6) in the rear area of the box (11) of the strike.

[0041] The lever system (71, 72) shown in Figures 18 to 20 comprises a short lever (71) and a long lever (72) mounted on rotary shafts (73, 74) and resting on a plane located above the coil (64), the short lever (71) having a lower extension arranged in the path of a movable core (64), referred to in Figures 21-23, of the coil (64) in charge of the actuation thereof.

[0042] As shown in Figure 18, to reduce the force received by the short lever (71) to the maximum, and to in turn minimise the necessary force required by the coil (64) to unlock the system, the base of the latch (12) makes contact with the long lever (72) in one area (75),

referred to in Figure 20, very close to the rotary shaft (74) of said long lever (72), and said long lever (72) acts against the free end of the short lever (71) such that said short lever (71) works by compression, unlike current models in which it works by traction.

[0043] The base of the latch (12) and the long lever (72) have a contact area (75) very close to the rotary shaft (74) of the long lever (72). The difference between the distance (d) existing between the contact area (75) and the shaft (74) of the long lever (72) and the distance (D) existing between said shaft (74) and the contact area of the long lever (72) and the short lever (71) makes it so the force received by the short lever (71) is considerably reduced.

[0044] In order to remain unlocked from the time the coil is charged to the time the door opens, without the need to keep the voltage source connected to the coil, this strike incorporates an automatic system (8) represented in different positions in Figures 21, 22, 23 and which acts directly on the core (64a) of the coil (64).

[0045] This automatic system, instead of acting on the long lever (72), comprises a band (81) riveted to the box (11) and a lever (82) assembled inside the latch (12) and resting against the band (81).

[0046] As shown in Figure 22, when the door is closed, the latch of the lock (not shown) makes contact with the latch (12) of the strike, pushing the lever (82) towards the inside of the latch. Said lever (82) rotates and presses the band (81) which elastically deforms, and with the free end thereof radially presses against the core (64a) of the coil (64).

[0047] When the strike is actuated by means of the charge of the coil, the core (64a) of said coil (64) moves towards the inside of the coil (64) releasing the band (81), which then occupies a position in which it prevents the return movement of the core (64a), thereby keeping the system unlocked, as shown in Figure 23. The moment the door opens and the latch of the lock stops pressing against the band (81), the lever returns to the initial position as shown in Figure 21.

[0048] The contact of the latch of the lock with the lever (82) is not made directly, but rather it is done so by means of a front lever (83) assembled in the front portion of the base of the latch (12) that transmits the thrust of the latch of the lock to the actuation lever (82) of the band (81).

[0049] The lower part of the aforementioned lever (82) is in charge of making contact with a microswitch sensor (84) that monitors the open or closed state of the door. As can be seen in Figure 21, when the lever (82) is actuating the microswitch sensor (84), it means that the door is open because the latch of the lock is not pressing against the front lever (83).

[0050] The moment the door is closed, as shown in Figure 22 and 23, the latch of the lock presses against the front lever (83), causing the lever (82) to stop acting on the microswitch sensor (84), giving said sensor the signal that the door is closed.

[0051] As can be seen in Figures 24 to 27, this strike

has an additional feature that consists of the incorporation of a top cover (5) that has in the centre, above the latch (12), a projecting portion (51) that prevents said latch (12) from hitting the frame of the door during the retraction thereof to the open position.

[0052] This projecting portion (51) of the cover furthermore allows the front portion of the latch (12) to be adjusted a few millimetres in height, as shown in the aforementioned Figures 24 to 27.

[0053] Having sufficiently described the nature of the invention, in addition to a preferred exemplary embodiment, it is hereby stated for the relevant purposes that the materials, shape, size and layout of the described elements may be modified, provided that it does not imply altering the essential features of the invention claimed below.

Claims

1. A symmetrical strike for multipoint locks, said strike (1) comprising: a box (11), a locking and unlocking lever system of a latch (12), a drive coil (64) of the lever system towards an open position, and mounting holes in a front portion (2, 2a) of a multipoint lock provided with: a recess (21) for receiving a latch of the lock, mounting holes for the fastening means of the strike with the hinged latch (12) facing said recess (21) and through holes (22a, 22b) for bolts of the multipoint lock, close to any one of the sides, or to the two sides, of said recess (21); **characterised in that** it comprises a box (11) provided with two symmetrical sides (11a, 11b) with respect to a median plane (Y) of the box (11) and of the latch (12); said symmetrical sides (11a, 11b) are arranged between the through holes (22a, 22b) of the bolts, located on any one of the sides, or on the two sides, of the recess (21) of the front portion (2, 2a) of the lock, and the corresponding side of said recess (21) of the front portion (2, 2a).
2. The strike, according to claim 1, **characterised in that** the symmetrical sides (11a, 11b) of the box (11) have an inward geometric shape, which defines in the box: a first projecting end (13a, 13b), in which first holes (14a, 14b) for mounting first fastening elements to the front portion (2, 2a) of the lock are defined, and a second inward end (15a, 15b) in which second holes (16a, 16b) for mounting second fastening means to the front portion (2, 2a) of the lock are defined, in which said inward geometric shape is adapted to the contour of the through hole (22a, 22b) for the bolts closest to the same side; and which defines an area of non-interference area with regard to the box (11) with bolts of the lock.
3. The strike, according to claim 2, **characterised in that** the geometric shape of the symmetrical sides

(11a, 11b) of the box has a concave curved, polygonal, stepped, oblique or other similar configuration.

4. The strike, according to any of claims 2 and 3, **characterised in that** the first holes (14a, 14b) and the second holes (16a, 16b) are arranged symmetrically with respect to the median plane (Y) of the box (11) and vertically unaligned, the front portion (2) comprising first holes (23a, 23b) and second holes (24a, 24b) coinciding with those of the box (11) of the strike (1).
5. The strike, according to claim 4, **characterised in that** on the symmetrical sides (11a, 11b), the box (11) comprises cavities (17a, 17b) that open laterally, which perpendicularly intercept the second holes (24a, 24b) of the box (11), suitable for occasionally housing a positional adapter (3) that comprises: a first hole (31) for fastening to a second hole (16a, 16b) of the box (11) by means of a pin (4) and a second hole (32) vertically aligned with a first hole (14a, 14b) on the same side of the box (11) and suitable for mounting the strike in a front portion (2a) provided with a second hole (24c) vertically aligned with a first hole (23a, 23b).
6. The strike, according to claim 1, **characterised in that** it comprises a terminal block assembly (6) with a length that is equal to or less than that of the box (11), coupled to the rear area of said box (11).
7. The strike, according to claim 6, **characterised in that** the terminal block assembly (6) comprises: a base support (61) provided with anchors (66) for the coupling thereof to the rear area of the box (11) and wherein a terminal block (62) with a PCB (63) and a coil (64) with a coil support (65) are mounted, such that said coil (64) is arranged in a gap defined behind the latch (12).
8. The strike, according to claim 7, **characterised in that** it comprises a lever system with a short lever (71) and a long lever (72) mounted on rotary shafts (73, 74) and resting on a plane located above the coil (64), the short lever (71) comprising a lower extension arranged in the path of a movable core (64a) of the coil (64) in charge of the actuation thereof.
9. The strike, according to claim 8, **characterised in that** the base of the latch (12) and the long lever (72) have a contact area (75) very close to the rotary shaft (74) of the long lever (72).
10. The strike, according to any of claims 8 and 9, **characterised in that** the long lever (72) acts against the free end of the short lever (71), such that said short lever (71) works by compression.

11. The strike, according to claim 10, **characterised in that** it comprises an automatic system (8) for keeping the strike unlocked without keeping the coil (64) connected to a voltage source and without acting on the long lever (72), said automatic system comprising: 5
a band (81) riveted to the box (11); a lever (82) assembled inside the latch (12), able to be actuated by the latch of the lock, and which moves the band (81) to a position in which it prevents the return movement of the core (64a) of the coil (64) when the strike is actuated by means of the charge of said coil (64). 10
12. The strike, according to claim 11, **characterised in that** the strike comprises a front lever (83) assembled in the front portion of the base of the latch (12) that transmits the thrust of the latch of the lock to the actuation lever (82) of the band (81). 15
13. The strike, according to claim 12, **characterised in that** in the closed position of the door the front lever (83) makes contact with a microswitch sensor (84) in charge of monitoring the open or closed state of the door. 20
14. The strike, according to claim 1, **characterised in that** the box comprises a top cover (5) that has in the centre, above the latch (12), a vertically projecting portion (51), which prevents said latch (12) from hitting the frame of the door during the retraction thereof to the open position. 25 30

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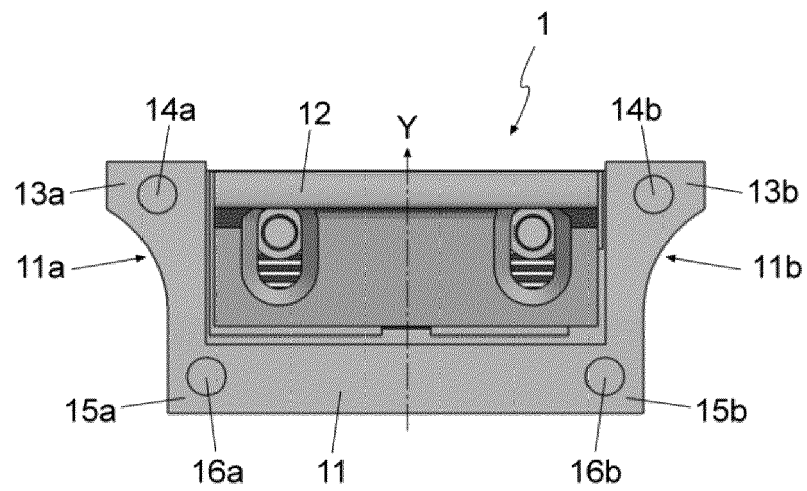


Fig. 1

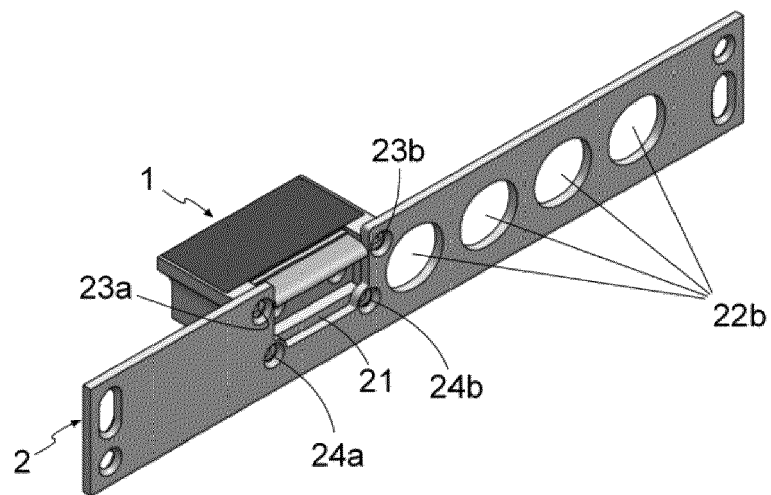


Fig. 2

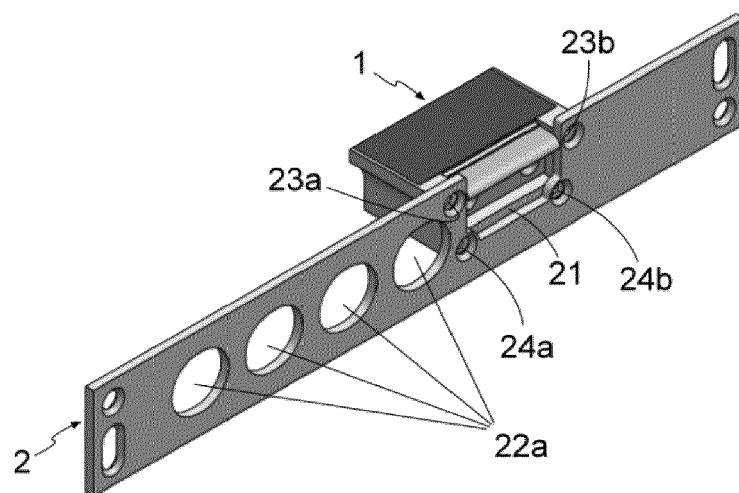


Fig. 3

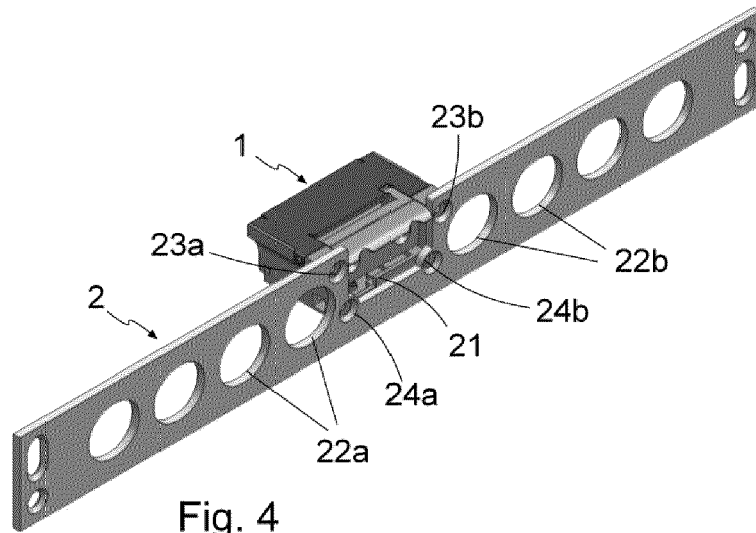


Fig. 4

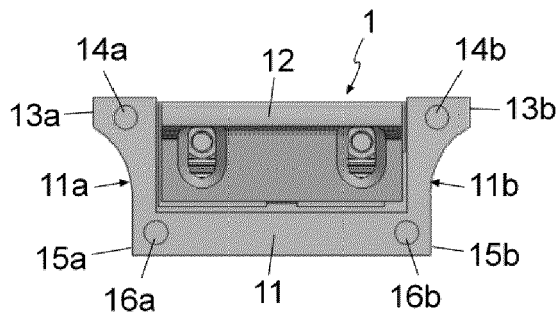


Fig. 5a

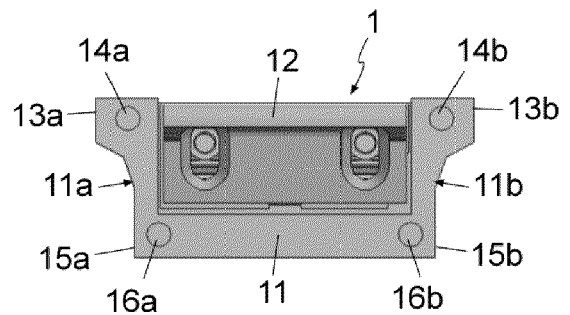


Fig. 5b

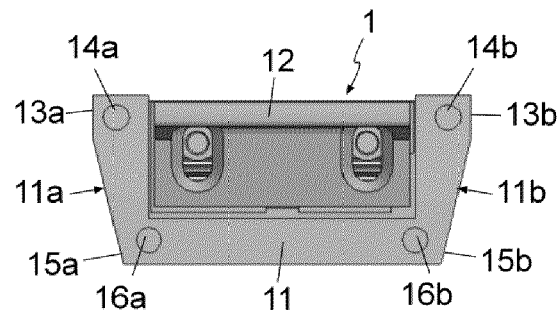


Fig. 5c

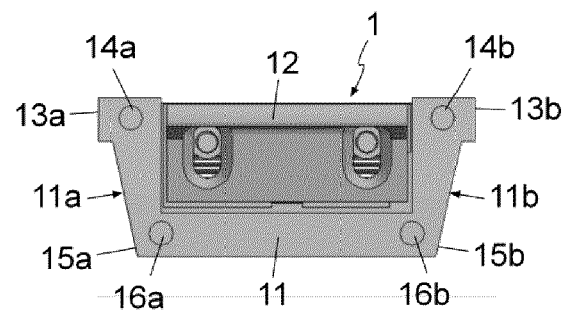


Fig. 5d

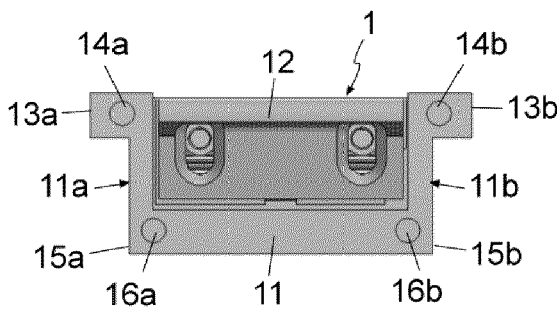


Fig. 5e

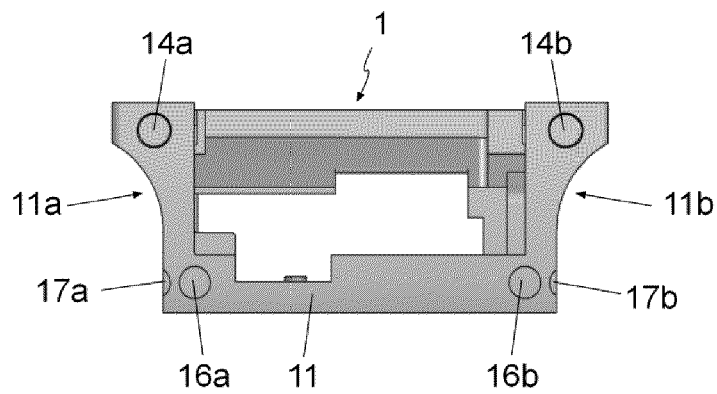


Fig. 6

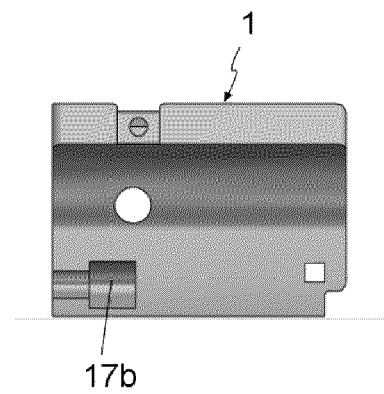


Fig. 7

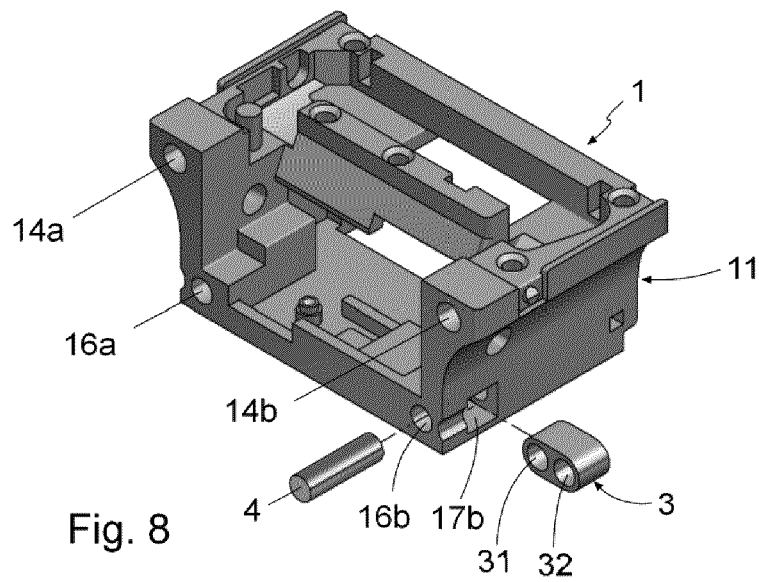


Fig. 8

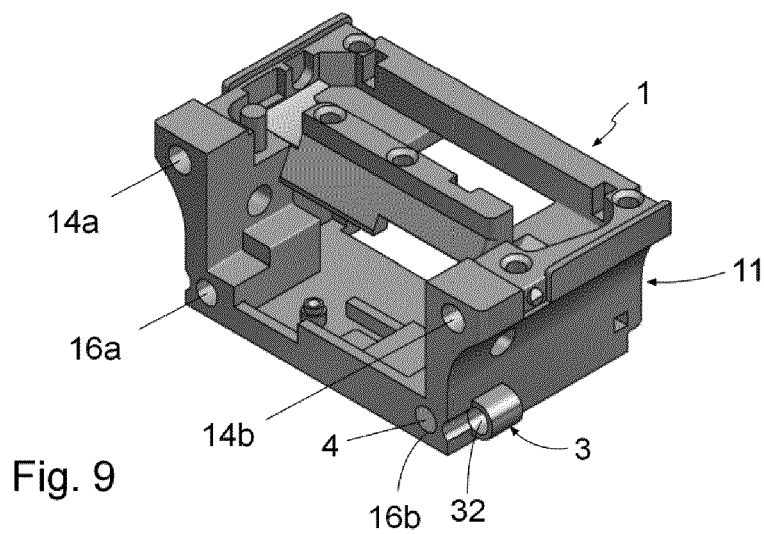
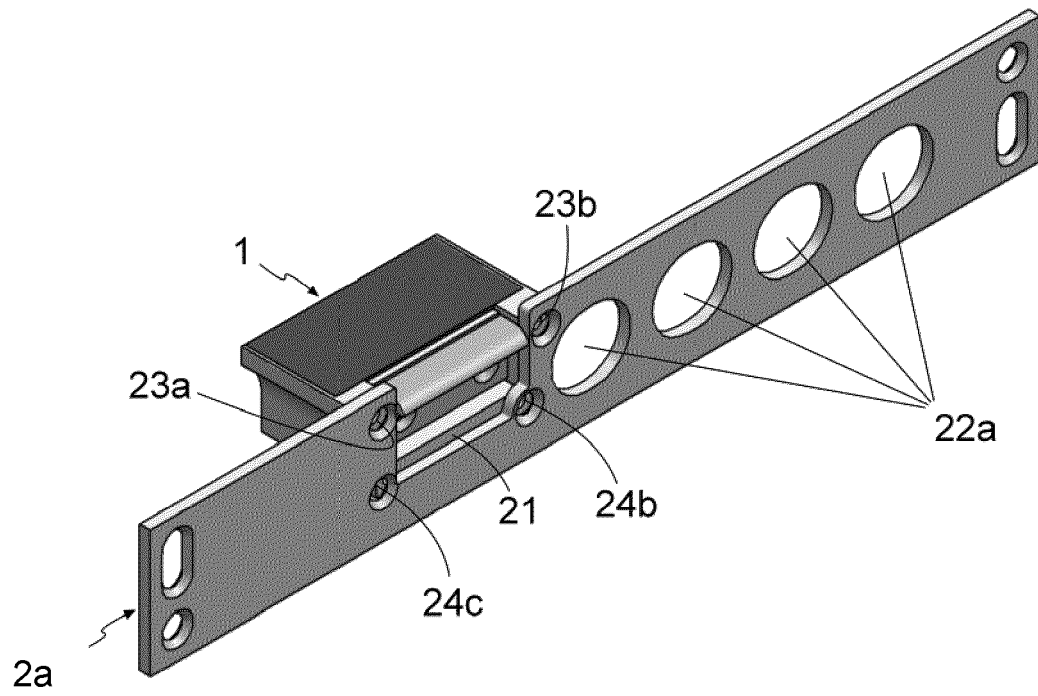
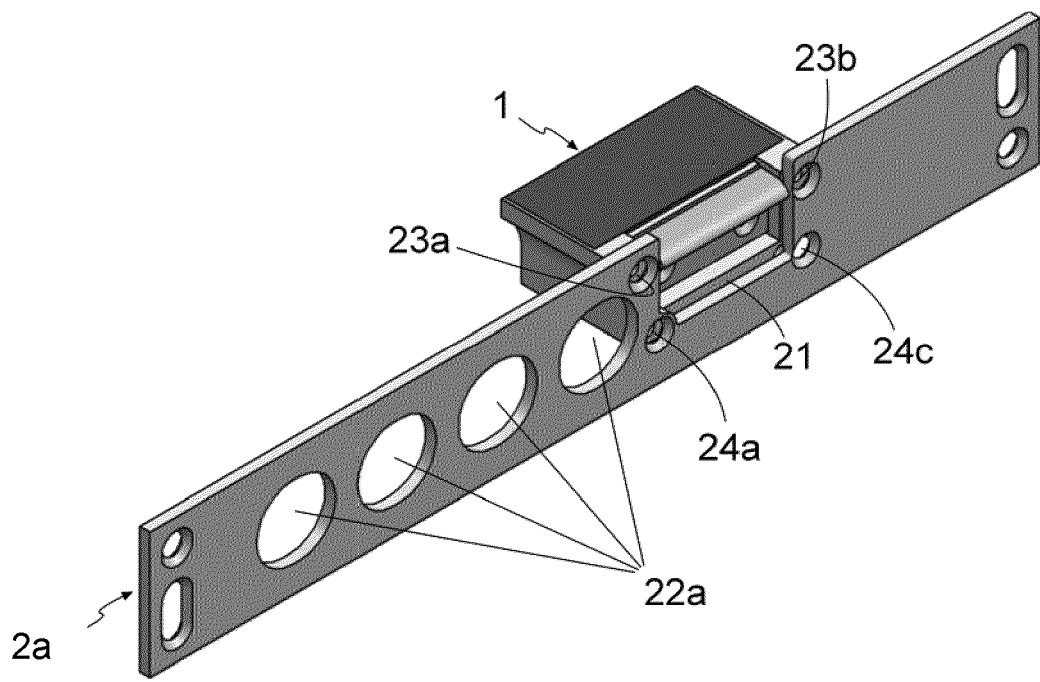


Fig. 9



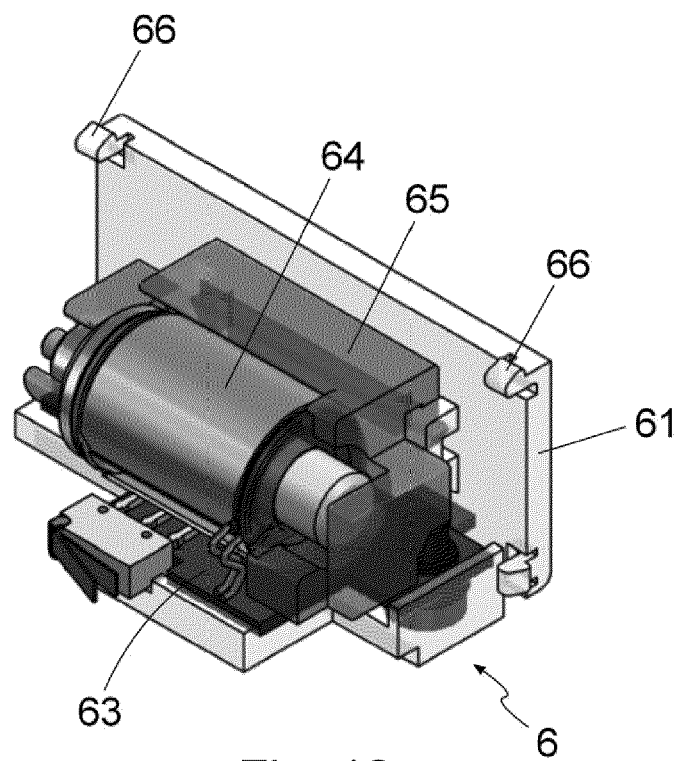


Fig. 12

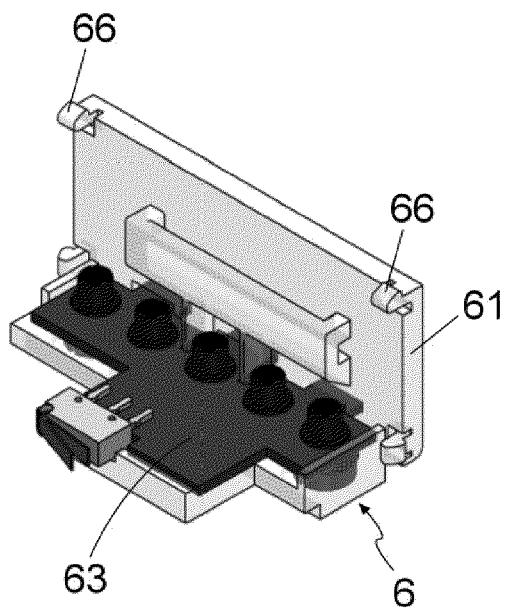


Fig. 13

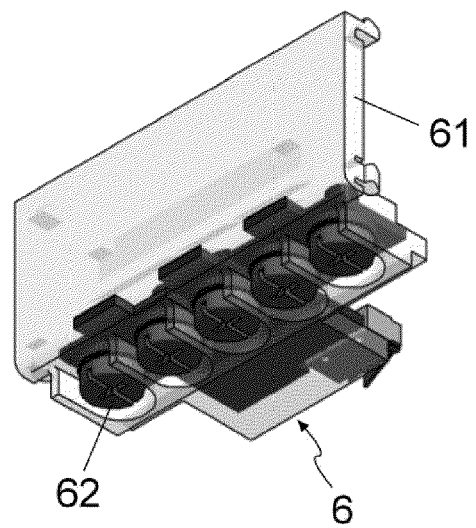


Fig. 14

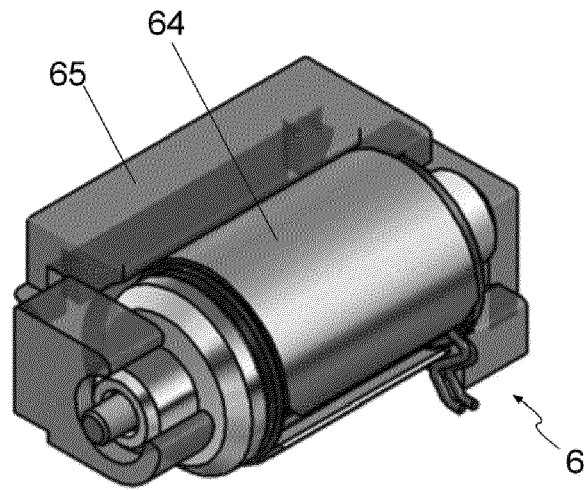


Fig. 15

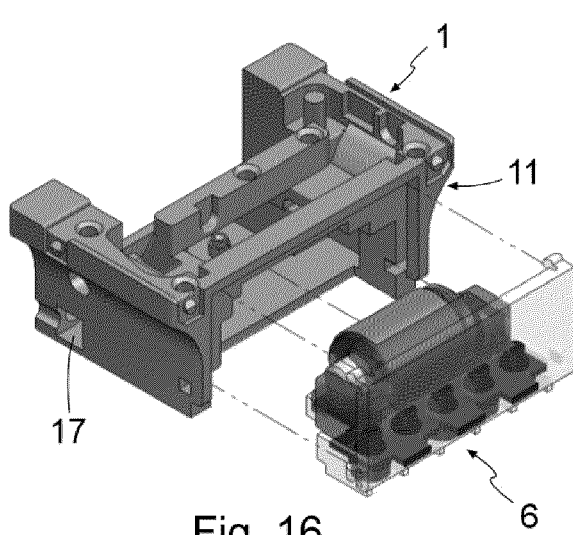


Fig. 16

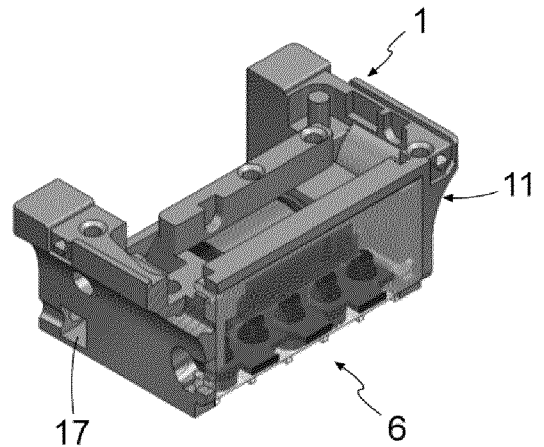


Fig. 17

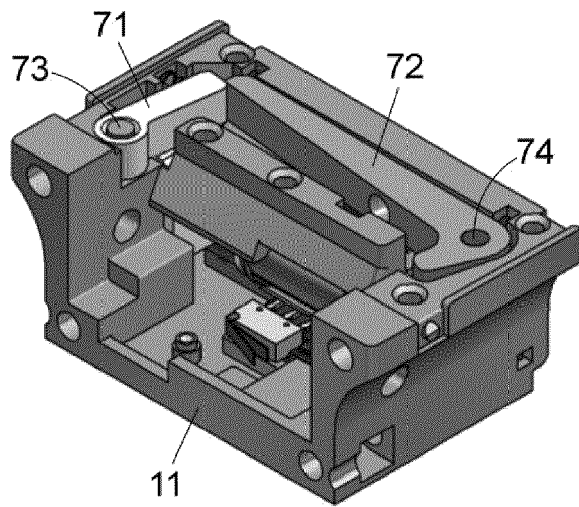


Fig. 18

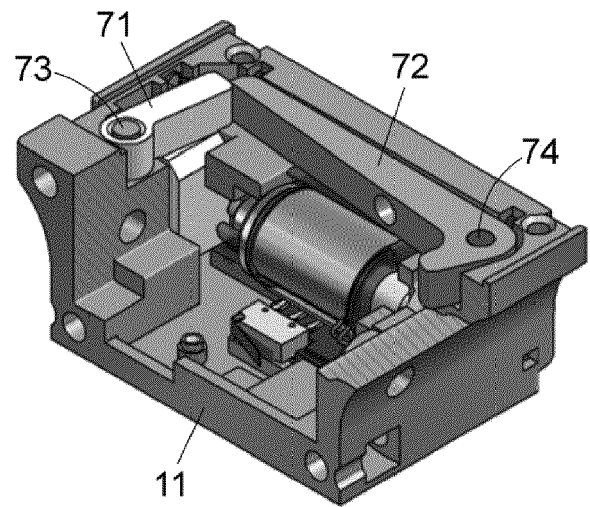


Fig. 19

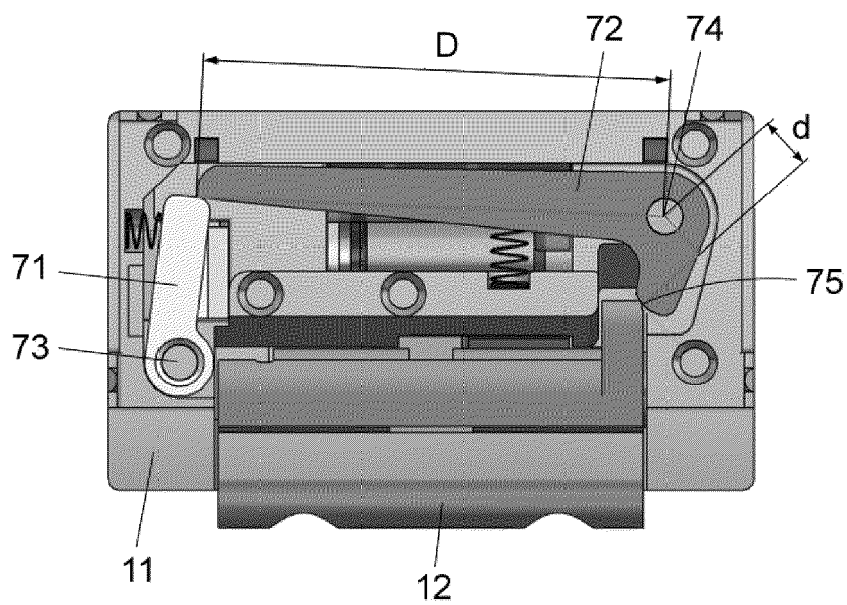


Fig. 20

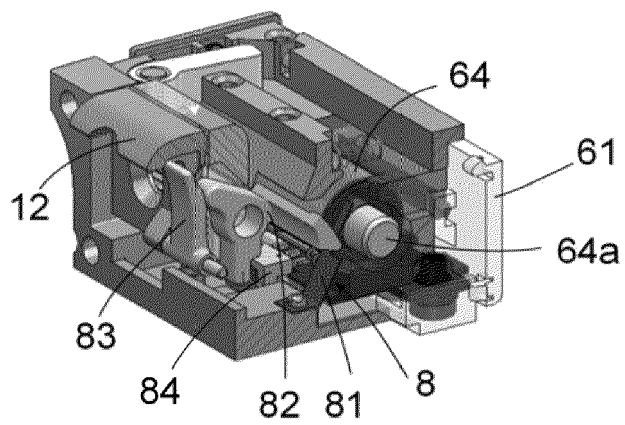


Fig. 21

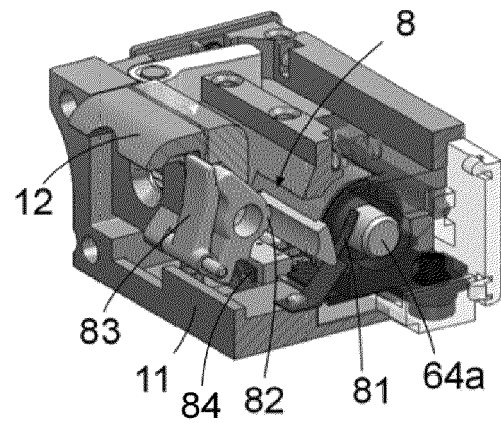


Fig. 22

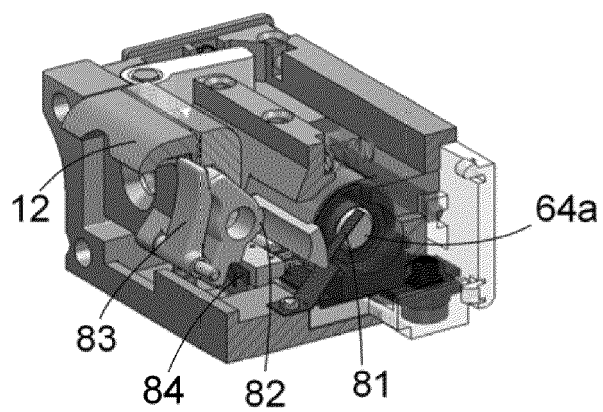


Fig. 23

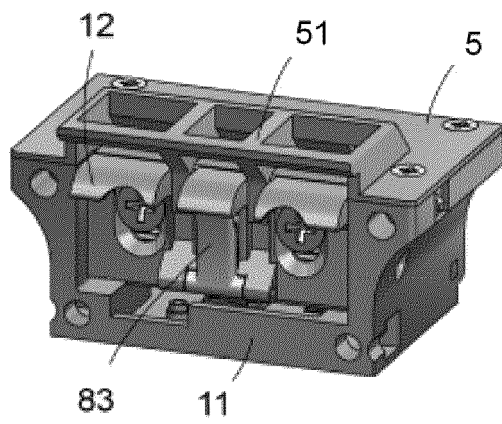


Fig. 24

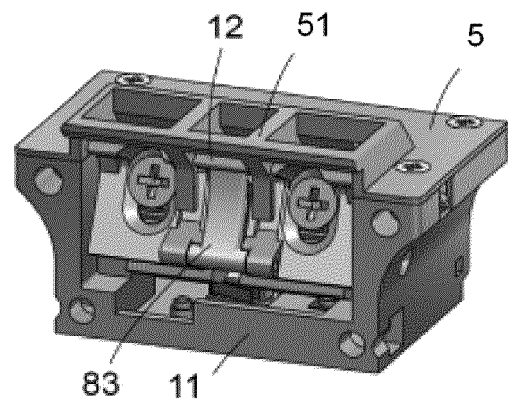


Fig. 25

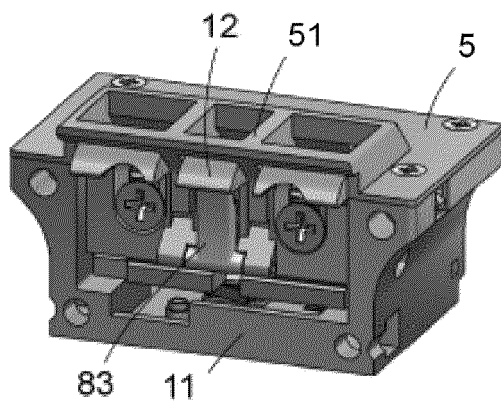


Fig. 26

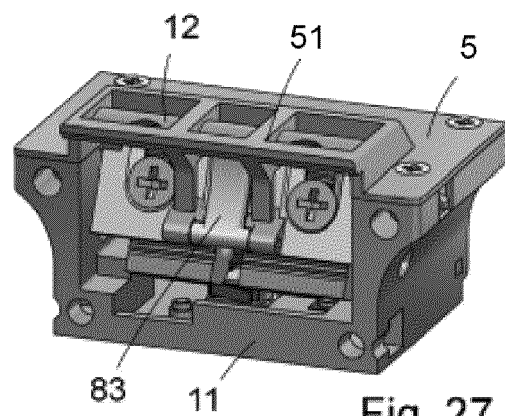


Fig. 27



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X	EP 2 542 743 A1 (ASSA ABLOY SICHERHEITSTECHNIK [DE]) 9 January 2013 (2013-01-09)	1	
A	* paragraph [0027] - paragraph [0052]; figures 1-8 *	2-14	
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	* column 5, line 52 - column 9, line 14; figures 1-14 *		
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Place of search		Date of completion of the search	Examiner
The Hague		10 September 2021	Goddar, Claudia
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