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(54) **COUNTER LOCK FOR AN INACTIVE LEAF OF A DOUBLE LEAF DOOR**

GEGENSCHLOSS FÜR EINEN INAKTIVEN FLÜGEL EINER DOPPELFLÜGELTÜR

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Description

TECHNICAL FIELD

[0001] The present invention relates to a counter lock for an inactive leaf for a double leaf door.

PRIOR ART

[0002] Emergency doors or fire doors comprising a main leaf in turn comprising a lock and a secondary leaf comprising a counter lock are known. The counter lock works together with the lock to block the door. These doors are configured to withstand stresses as required by law, where they can only be opened when the user acts on the lock or counter lock. When acting on the lock only the main leaf opens, whereas both leaves open when acting on the counter lock.

[0003] The secondary leaf is blocked at upper and lower blocking points by means of rods that are coupled to the counter lock, particularly to respective sliders housed in the counter lock, and at the ends of which there are arranged bolts which are inserted in respective housings, blocking the secondary leaf. When the counter lock is actuated, said blocking points are eliminated, making it possible to open the door. The counter lock furthermore includes a central blocking point with the lock such that a latch of the lock is housed in the counter lock when the door is closed.

[0004] EP1524390A2 describes a counter lock comprising sliders which move vertically and have ends coupled to the corresponding rods, a laminar element that can be actuated through a security bar and includes a front which can retain the sliders in the retracted position until the leaf closes completely and a latch of the lock is coupled in the counter lock. To block the sliders in the position in which the door is open, the selva includes a pusher which retains the latch of the lock when the door is closed, the pusher including a coupling tooth which engaged a toothed ring rotating with respect to the sliders.

[0005] DE202006001383U1 discloses counter lock for a passive leaf of a double-leaf door comprising an operating cam coupled to a latch, an upper slider configured to be coupled to an upper rod through which the passive leaf is held locked at an upper locking point and a lower slider configured to be coupled to a lower rod through which the passive leaf is held locked at a lower locking point, both sliders being movable relative to each other. When the follower is rotated, the actuating cam rotates, actuating the upper slider. When the upper slide slider moves, it causes a rocker arm to rotate, which in turn is coupled to the lower slider. Thus, the rotation of the follower causes the release of the upper and lower locking points.

[0006] EP2264268A2 discloses a counter lock for an inactive leaf of a double leaf door according to the preamble of claim 1. The counter lock comprises a follower,

pushers configured to pull the latch and the corresponding bolt out of the counter lock, a first cam coupled to the follower, a second cam configured to operate the latch and a third cam configured to operate the corresponding bolt. The counter lock comprises a central slider coupled to the follower, the slider being coupled to the second cam and the third cam respectively. The first cam and the second cam are coupled to each other via a gear. When the follower is actuated from the outside, the rotation of the follower rotates the first cam which in turn rotates the second cam causing the displacement of the central slider and that the pusher pushes the latch out of the counter-lock. The displacement of the central slider forces the third cam to rotate in such a way that it actuates the pusher to eject the bolt. The counter lock further comprises an upper slider connected to an upper rod and a lower slider connected to a lower rod. The upper slider is coupled to the central slider by means of a gear so that when the central slider moves, it also moves the upper slider releasing the upper locking point. When the central slider is displaced, a projection of the central slider which is housed in a recess of the lower slider butts against an end of the lower slider thereby displacing the lower slider and thus releasing the lower locking point.

DISCLOSURE OF THE INVENTION

[0007] The object of the invention is to provide a counter lock for an inactive leaf for a double leaf door, as defined in the claims.

[0008] The counter lock according to the invention comprises an actuating cam coupled to a follower, an upper slider configured for being coupled to an upper rod through which the blocking of the inactive leaf at an upper blocking point is maintained when the counter lock is in a neutral position, a lower slider configured for being coupled to a lower rod through which the blocking of the inactive leaf at a lower blocking point is maintained when the counter lock is in the neutral position, both sliders being movable with respect to one another, the actuating cam being configured for moving at least one of the sliders when the follower is rotated in an opening direction causing the release of the upper and lower blocking points of the inactive leaf, and a pusher configured for actuating a latch of a lock, with the latch being housed at least partially in the counter lock when the counter lock is in the neutral position blocking an active leaf of the double leaf door at a central blocking point.

[0009] The actuating cam is configured for actuating, in a first step, the pusher when the follower is rotated in an opening direction causing the release of the central blocking point, and to then, in a second step, move at least one of the sliders unblocking the upper and lower blocking points of the inactive leaf. The actuating cam is configured for rotating when the follower is rotated in the opening direction, the actuating cam comprising a support surface which, in the neutral position, contacts the pusher, blocking the rotation of the pusher, said support

surface being configured for acting on the pusher rotating it in the direction opposite the opening direction in the first step when the follower is rotated in the opening direction, and an actuating surface configured for contacting the lower slider in the second step when the actuating cam has rotated a specific angle in the opening direction from the neutral position.

[0010] The counter lock enables the sequential opening of the blocking points of the door. By acting directly on the follower or on the manual pull, the central blocking point is released first, and once said blocking point has been released, the actuating cam acts on one of the sliders causing the release of the upper and lower blocking points. Therefore, the user will have to apply less force to open the door while still complying with the requirements of the existing regulations.

[0011] These and other advantages and features of the invention will become evident in view of the drawings and detailed description of the invention.

DESCRIPTION OF THE DRAWINGS

[0012]

Figure 1 shows a schematic front view of a double leaf door comprising a counter lock according to the invention.

Figure 2 shows an exploded view of the elements comprised in the double leaf door shown in Figure 1.

Figure 3 shows in detail the counter lock and a lock of the double leaf door both shown in Figure 1, arranged in a neutral position.

Figure 4 shows a front view of the counter lock shown in Figure 1 in the neutral position.

Figure 5 shows another front view of the counter lock shown in Figure 1.

Figure 6 shows a front view of the counter lock shown in Figure 1 in a first position in which the follower is operated.

Figure 7 shows a front view of the counter lock shown in Figure 1 in a second position in which the follower is operated.

Figure 8 shows a front view of the counter lock shown in Figure 1 in a position in which the lock is open.

Figure 9 shows another front view of the counter lock shown in Figure 1 in the position in which the lock is open.

Figure 10 shows a detailed view of the swing comprised in the counter lock shown in Figure 1.

Figure 11 shows a detailed view of the actuating cam comprised in the counter lock shown in Figure 1.

Figure 12 shows a detailed view of the pull comprised in the counter lock shown in Figure 1.

Figure 13 shows a detailed view of the counter lock shown in Figure 1 operated by means of the pull in an initial unblocking position.

Figure 14 shows a detailed view of the counter lock shown in Figure 1 operated by means of the pull in an intermediate unblocking position.

15 DETAILED DISCLOSURE OF THE INVENTION

[0013] Figure 1 shows an emergency door 1 comprising a lock 4. The emergency door 1 comprises a main leaf 2 also known as the active leaf comprising the lock 4 and a secondary leaf 3 also known as the inactive leaf comprising a counter lock 5 according to the invention.

[0014] When the lock 4 is acted on, only the main leaf 2 opens, whereas when the counter lock 5 is acted on both leaves 2 and 3 open. When arranged in a blocking position, the counter lock 5 maintains the blocking of the secondary leaf 3 at an upper blocking point A, a lower blocking point B, and a central point C as schematically shown in Figures 1 and 2. Said blocking position is also referred to as the neutral position or the closed-door position.

[0015] The emergency door 1 comprises an upper rod 18 fixed at one end to the counter lock 5 and at the free end of which there is inserted a bolt 13, and a lower rod 19 fixed at one end to the counter lock 5 and at the free end of which there is inserted another bolt 14, such that each bolt 13 and 14 is configured for being housed in a corresponding housing 27 and 28 comprised respectively in the floor and in a frame of a wall in which the emergency door 1 is arranged, with the corresponding bolts 13 and 14 being retained inside the respective housing 27 and 28 defining the lower blocking point B and the upper blocking point A, respectively. The blocking at the central point C takes place through a latch 8 of the lock 4 which, in the neutral position, goes through a front 7 of the counter lock 5, being partially housed in the counter lock 5. This geometry of the bolts together with the configuration of the counter lock 5 prevents the bolts 13 and 14 from giving way when excessive forces are applied during panic or fire situations, leading to the door 1 becoming overloaded, preventing said door from being able to be open.

[0016] The counter lock 5 shown in the drawings is mainly adapted to emergency doors as shown in Figures 1 and 2, although it may be used in another type of doors.

[0017] Figures 3 to 9 and 13 to 14 show an embodiment of the counter lock 5 in which some of the components of said counter lock 5 not relevant for the invention have been eliminated to facilitate understanding thereof. The

counter lock 5 comprises a lock case 6 housing a follower 10 configured for being operated by a handle (not depicted) or a panic or emergency device 9 depicted in Figures 1 and 2, an upper slider 12 configured for being coupled to the upper rod 18, a lower slider 15 configured for being coupled to the lower rod 19, and an actuating cam 30 coupled to the follower 10, both sliders 12 and 15 being movable with respect to one another and the actuating cam 30 being configured for moving at least one of the sliders 12 and 15 when it is operated in an opening direction, thereby releasing the upper blocking point A and the lower blocking point B of the secondary leaf 3.

[0018] The counter lock 5 further comprises a pusher 50 which, in the neutral position, is housed in the lock case 6 and partially ejected from the lock case 6, striking the latch 8 of the lock 4 and releasing the central blocking point C when the follower 10 is rotated in the opening direction. Therefore, from the neutral position, the rotation of the actuating cam 30 in the opening direction causes the release of the upper blocking point A and the lower blocking point B of the counter lock 5 and of the central blocking point C of the lock 4 by means of said actuating cam 30 directly actuating one of the sliders 12 and 15 and the pusher 50, respectively.

[0019] The pusher 50 is pivotably coupled to the lock case 6 through the corresponding coupling 51. In the neutral position, the pusher 50 is supported on the actuating cam 30, particularly on a support surface 35 arranged in a projection 34 of the actuating cam 30. In the counter lock 5, the support between the pusher 50 and the actuating cam 30 in the neutral position is arranged below the coupling rotating shaft 51, thereby forcing the pusher 50 to remain supported on the actuating cam 30 as a result of gravity.

[0020] Moreover, the counter lock 5 comprises blocking means 60 configured for maintaining the blocking of the movement of the sliders 12 and 15 in the neutral position of the counter lock 5, the blocking means 60 comprising a swing 20 and a retention surface 36 of the actuating cam 30 which retains the swing 20 in the neutral position preventing the movement of the sliders 12 and 15, the blocking means 60 being unblocked when the follower 10 is rotated in the opening direction. As described above, in the neutral position, the inactive leaf 3 is blocked in the upper blocking point A, lower blocking point B, and central blocking point C. From said neutral position in which the door is blocked, and when pressure is applied on the door, said door can be opened quickly and at any time by rotating the follower 10 in the opening direction.

[0021] The swing 20 comprises a wedge-like projection 23 which, in the neutral position, abuts with the retention surface 36 of the actuating cam 30. The retention surface 36 is a curved surface. In the embodiment shown in the drawings, the retention surface 36 is a curved surface substantially concentric to an axis of rotation of the actuating cam 30.

[0022] The swing 20 is pivotably coupled to the lock

case 6 of the counter lock 5 through a first coupling 24, said swing 20 furthermore being coupled to the lower slider 15 and the upper slider 12, respectively, through a second coupling 21 and a third coupling 22, said second coupling 21 and third coupling 22 being arranged at opposite ends of the swing 20. The first coupling 24 is arranged substantially centered in the swing 20.

[0023] Moreover, the upper slider 12 and the lower slider 15 move relatively with respect to one another in a substantially vertical manner when they are operated by the actuating cam 30. When the follower 10 is rotated in the opening direction, both sliders 12 and 15 move closer to one another, forcing the upper rod 18 and the lower rod 19 to move closer to one another, releasing the corresponding bolts 13 and 14 from the corresponding housings 27 and 28, thereby releasing the upper blocking position A and the lower blocking position B, whereas when the follower 10 returns to its starting position as a result of a spring 55, the sliders 12 and 15 move away from one another as a result of respective return springs 56 and 57, with the upper rod 18 and the lower rod 19 returning to the upper blocking position A and the lower blocking position B. The movement of the upper slider 12 and the lower slider 15 is a guided movement, said movement being substantially vertical.

[0024] The actuating cam 30 shown in detail in Figure 11 comprises a hole 33 through which it is concentrically and integrally coupled to the follower 10 and an arm 31 including an actuating surface 32 configured for pushing and moving the lower slider 15 when the follower 10 is rotated in the opening direction. In particular, the actuating surface 32 acts on a stop 16 arranged at an upper end 15a of the lower slider 15. In addition to blocking the rotation of the pusher 50 in the neutral position, the support surface 35 of the actuating cam 30 is configured for causing the rotation of the pusher 50 in the direction opposite the opening direction of the follower 10 when the follower 10 is operated, causing the partial ejection of said pusher 50 out of the lock case 6 and the corresponding release of the central blocking point C as it strikes the latch 8 of the lock 4, retracting it.

[0025] When the follower 10 is rotated in the opening direction by means of a handle or a panic or emergency device 9, the actuating cam 30 rotates in the opening direction, rotating the pusher 50 in the direction opposite the direction for opening and releasing the central blocking point C in a first step, before coming into contact with the lower slider 15. When the actuating cam 30 is rotated in the opening direction from the neutral position (shown in Figures 3 to 5) until the actuating surface 32 of said actuating cam 30 contacts the stop 16 arranged at the upper end 15a of the lower slider 15 (shown in Figure 6), the retention surface 36 of the actuating cam 30 remains in contact with the end 23b of the projection 23 of the swing 20. During said travel, the swing 20 does not rotate. From this position (see Figures 7 to 9), when the actuating cam 30 has rotated a specific angle in the opening direction from the neutral position, the actuating cam 30 moves

the lower slider 15, the actuating cam 30 no longer contacting the swing 20. When the lower slider 15 is moved vertically, the swing 20 rotates in the opening direction causing the movement of the upper slider 12 due to the couplings 21 and 22 of the swing 20 with respect to the sliders 12 and 15, causing the unblocking of the upper blocking point A and the lower blocking point B. By sequencing the release of blocking points, i.e., releasing the central blocking point C first followed by the upper blocking point A and the lower blocking point B being released, a counter lock 5 which minimizes the force the user must apply on the follower 10 of the counter lock 5 to open the door 1 is achieved, complying with the safety requirements demanded of locks of this type.

[0026] Finally, the secondary leaf 3 can be opened by acting directly on the follower 10 of the counter lock 5 or on a pull 40 housed in the lock case 6. The pull 40 is pivotably coupled to the lock case 6 through a respective coupling 41. The pull 40 comprises a projection 43 going through the front 7 of the counter lock 5, being accessible from outside the secondary leaf 3, and an extension 42 housed inside the lock case 6. When the counter lock 5 is manually operated from the outside through the pull 40 by actuating the projection 43 outwards, the pull 40 rotates in the opening direction with respect to the coupling 41, the extension 42 of the pull 40 pushing the actuating cam 30 and causing it to rotate in the opening direction as seen in Figures 13 to 15. The pull 40 directly contacts the actuating cam 30 through the extension 42. Once the pull 40 has rotated the actuating cam 30, the unblocking process described for the case in which the actuating cam 30 is rotated through the follower 10 is repeated upon acting on a handle or safety device, so the entire description above upon rotation of the actuating cam 30 is also applicable herein and it will not be repeated.

Claims

1. Counter lock for an inactive leaf of a double leaf door, comprising an actuating cam (30) coupled to a follower (10), an upper slider (12) configured for being coupled to an upper rod (18) through which the blocking of the inactive leaf (3) at an upper blocking point (A) is maintained when the counter lock (5) is in a neutral position, a lower slider (15) configured for being coupled to a lower rod (19) through which the blocking of the inactive leaf (3) at a lower blocking point (B) is maintained when the counter lock (5) is in the neutral position, both sliders (12, 15) being movable with respect to one another, the actuating cam (30) being configured for moving at least one of the sliders (12, 15) when the follower (10) is rotated in an opening direction causing the release of the upper and lower blocking points (A, B) of the inactive leaf (3), and a pusher (50) configured for actuating a latch (8) of a lock (4), with the latch (8) being housed

at least partially in the counter lock (5) when the counter lock (5) is in the neutral position, blocking an active leaf (2) of the double leaf door (1) in a central blocking point (C), the actuating cam (30) being configured for actuating, in a first step, the pusher (50) when the follower (10) is rotated in the opening direction causing the release of the central blocking point (C), and to then, in a second step, moving at least one of the sliders (12, 15) unblocking the upper and lower blocking points (A, B) of the inactive leaf (3), the actuating cam (30) is configured for rotating when the follower (10) is rotated in an opening direction, the actuating cam (30) comprising a support surface (35) which, in the neutral position, contacts the pusher (50), said support surface (35) being configured for acting on the pusher (50) rotating it in the direction opposite the opening direction in the first step when the follower (10) is rotated in the opening direction, **characterized in that** the support surface (35), in the neutral position, blocks the rotation of the pusher (50), and that the actuating cam (30) comprises an actuating surface (32) configured for contacting the lower slider (15) in the second step when the actuating cam (30) has rotated a specific angle in the opening direction from the neutral position.

2. Counter lock for an inactive leaf according to the preceding claim, wherein, in the neutral position, the actuating surface (32) does not contact the lower slider (15).
3. Counter lock for an inactive leaf according to claim 1 or 2, wherein the pusher (50) is coupled through a coupling (51), said pusher (50) being pivotable with respect to said coupling (51), the support between the pusher (50) and the actuating cam (30) being arranged in the neutral position below the axis of rotation of the coupling (51), forcing the pusher (50) to remain supported on the actuating cam (30).
4. Counter lock for an inactive leaf according to any of the preceding claims, comprising blocking means (60) to maintain the blocking of the movement of the sliders (12, 15) in the neutral position of the counter lock (5), the blocking means (60) comprising a swing (20) coupled to at least one slider (12, 15), the actuating cam (30) in the neutral position blocking the rotation of the swing (20), preventing the sliders (12, 15) from moving, the blocking means (60) being unblocked when the follower (10) is rotated in the opening direction.
5. Counter lock for an inactive leaf according to the preceding claim, wherein the swing (20) comprises a wedge-like projection (23) which, in the neutral position, abuts with a retention surface (36) of the actuating cam (30).

6. Counter lock for an inactive leaf according to the preceding claim, wherein the retention surface (36) of the actuating cam (30) is a curved surface.
7. Counter lock for an inactive leaf according to the preceding claim, wherein the retention surface (36) is a curved surface substantially concentric to an axis of rotation of the actuating cam (30).
8. Counter lock for an inactive leaf according to any of claims 5 to 7, wherein an end (23b) of the projection (23) of the swing (20) maintains contact with the retention surface (36) of the actuating cam (30) during rotation of the actuating cam (30) in the opening direction from the neutral position until the actuating surface (32) contacts the lower slider (15), the actuating cam (30) preventing the rotation of the swing (20).
9. Counter lock for an inactive leaf according to any of the preceding claims, wherein the swing (20) is pivotably coupled to a lock case (6) of the counter lock (5) through a first coupling (24), said swing (20) furthermore being coupled respectively to the lower slider (15) and the upper slider (12) through a second coupling (21) and a third coupling (22), said second coupling (21) and third coupling (22) being arranged at opposite ends of the swing (20).
10. Counter lock for an inactive leaf according to any of the preceding claims, comprising a pull (40) including a projection (43) accessible from outside the counter lock (5), and an extension (42) configured for actuating the actuating cam (30) such that, when the pull (40) is operated through the projection (43), it causes the rotation of the actuating cam (30) and the release of blocking points (A, B) of the inactive leaf (3).
11. Counter lock for an inactive leaf according to the preceding claim, wherein the pull (40) directly contacts the actuating cam (30) through the extension (42) when the pull (40) is operated from outside, causing said extension (42) to pivot the actuating cam (30) in the opening direction.

Patentansprüche

1. Gegenschloss für einen inaktiven Flügel einer Doppeltür, umfassend einen mit einer Nuss (10) gekoppelten Betätigungsnocken (30), einen zum Eingriff mit einer oberen Stange (18) ausgelegten oberen Schieber (12), wodurch die Verriegelung des inaktiven Flügels (3) an einem oberen Verriegelungspunkt (A) aufrechterhalten wird, wenn sich das Gegenschloss (5) in einer Neutralstellung befindet, einen zum Eingriff mit einer unteren Stange (19) ausgelegten unteren Schieber (15), wodurch die Verriegelung

lung des inaktiven Flügels (3) an einem unteren Verriegelungspunkt (B) aufrechterhalten wird, wenn sich das Gegenschloss (5) in der Neutralstellung befindet, wobei die beiden Schieber (12, 15) relativ zueinander beweglich sind, wobei der Betätigungsnocken (30) dazu ausgelegt ist, bei Drehung der Nuss (10) in Öffnungsrichtung mindestens einen der Schieber (12, 15) zu bewegen und dadurch die Entsperrung des oberen und unteren Verriegelungspunkts (A, B) des inaktiven Flügels (3) zu bewirken, und einen Drücker (50), der zur Betätigung der Falle (8) eines Schlosses (4) ausgelegt ist, wobei die Falle (8) in der Neutralstellung des Gegenschlosses (5) zumindest teilweise im Gegenschloss (5) untergebracht ist und einen aktiven Flügel (2) der Doppeltür (1) an einem zentralen Verriegelungspunkt (C) sperrt, wobei der Betätigungsnocken (30) dazu ausgelegt ist, bei Drehung der Nuss (10) in Öffnungsrichtung in einem ersten Schritt den Drücker (50) zu betätigen und dadurch die Entsperrung des zentralen Verriegelungspunkts zu bewirken und dann in einem zweiten Schritt mindestens einen der Schieber (12, 15) zu bewegen und den oberen und unteren Verriegelungspunkt (A, B) des inaktiven Flügels (3) zu entsperren, wobei der Betätigungsnocken (30) dazu ausgelegt ist, sich bei Drehung der Nuss (10) in Öffnungsrichtung zu drehen, wobei der Betätigungsnocken (30) eine Auflagefläche (35) aufweist, die in der Neutralstellung den Drücker (50) berührt, wobei die genannte Auflagefläche (35) dazu ausgelegt ist, beim Drehen der Nuss (10) in Öffnungsrichtung im ersten Schritt auf den Drücker (50) einzuwirken und ihn in die der Öffnungsrichtung entgegengesetzte Richtung zu drehen, **dadurch gekennzeichnet, dass** die Auflagefläche (35) in der Neutralstellung die Drehung des Drückers (50) sperrt, und dass der Betätigungsnocken (30) eine Betätigungsfläche (32) aufweist, die dazu ausgelegt ist, im zweiten Schritt den unteren Schieber (15) zu berühren, wenn sich der Betätigungsnocken (30) um einen bestimmten Winkel aus der Neutralstellung in Öffnungsrichtung gedreht hat.

2. Gegenschloss für einen inaktiven Flügel nach dem vorstehenden Anspruch, wobei die Betätigungsfläche (32) den unteren Schieber (15) in der Neutralstellung nicht berührt.

3. Gegenschloss für einen inaktiven Flügel nach Anspruch 1 oder 2, wobei der Drücker (50) über eine Gelenkverbindung (51) angekoppelt ist, wobei der genannte Drücker (50) um die genannte Gelenkverbindung (51) schwenkbar ist, wobei die Auflageverbindung zwischen dem Drücker (50) und dem Betätigungsnocken (30) in der Neutralstellung unterhalb der Drehachse der Gelenkverbindung (51) angeordnet ist, sodass der genannte Drücker (50) zwangsläufig auf dem Betätigungsnocken (30) aufliegend

gehalten wird.

4. Gegenschloss für einen inaktiven Flügel nach einem der vorstehenden Ansprüche mit Verriegelungsmitteln (60), um die Bewegung der Schieber (12, 15) in der Neutralstellung des Gegenschlosses (5) gesperrt zu halten, wobei die Verriegelungsmittel (60) einen Bügel (20) umfassen, der mit mindestens einem Schieber (12, 15) in Eingriff steht, wobei der Betätigungsnocken (30) in der Neutralstellung die Drehung des Bügels (20) sperrt und die Bewegung der Schieber (12, 15) verhindert, und wobei die Verriegelungsmittel (60) bei Drehung der Nuss (10) in Öffnungsrichtung entsperrt werden. 5
5. Gegenschloss für einen inaktiven Flügel nach dem vorstehenden Anspruch, wobei der Bügel (20) einen keilförmigen Vorsprung (23) aufweist, der in der Neutralstellung an einer Anschlagfläche (36) des Betätigungsnockens (30) anliegt. 10
6. Gegenschloss für einen inaktiven Flügel nach dem vorstehenden Anspruch, wobei die Anschlagfläche (36) des Betätigungsnockens (30) eine gebogene Fläche ist. 15
7. Gegenschloss für einen inaktiven Flügel nach dem vorstehenden Anspruch, wobei die Anschlagfläche (36) eine im Wesentlichen zur Drehachse des Betätigungsnockens (30) konzentrische gebogene Fläche ist. 20
8. Gegenschloss für einen inaktiven Flügel nach einem der Ansprüche 5 bis 7, wobei ein Ende (23b) des Vorsprungs (23) des Bügels (20) während der Drehung des Betätigungsnockens (30) aus der Neutralstellung in Öffnungsrichtung in Kontakt mit der Anschlagfläche (36) des Betätigungsnockens (30) bleibt, bis die Betätigungsfläche (32) den unteren Schieber (15) berührt, wobei der Betätigungsnocken (30) die Drehung des Bügels (20) verhindert. 25
9. Gegenschloss für einen inaktiven Flügel nach einem der vorstehenden Ansprüche, wobei der Bügel (20) über eine erste Verbindung (24) mit einem Schlossgehäuse (6) des Gegenschlosses (5) schwenkbar verbunden ist und der genannte Bügel (20) ferner über eine zweite Verbindung (21) und eine dritte Verbindung (22) mit dem unteren Schieber (15) bzw. dem oberen Schieber (12) verbunden ist, wobei die genannte zweite Verbindung (21) und dritte Verbindung (22) an entgegengesetzten Enden des Bügels (20) angeordnet sind. 30
10. Gegenschloss für einen inaktiven Flügel nach einem der vorstehenden Ansprüche, mit einer Zugvorrichtung (40), die einen von außerhalb des Gegenschlosses (5) zugänglichen Vorsprung (43) und ei- 35

nen zur Betätigung des Betätigungsnockens (30) ausgebildeten Fortsatz (42) aufweist, wobei die Zugvorrichtung (40) bei Betätigung durch den Vorsprung (43) die Drehung des Betätigungsnockens (30) und die Entsperrung der Verriegelungspunkte (A, B) des inaktiven Flügels (3) bewirkt.

11. Gegenschloss für einen inaktiven Flügel nach dem vorstehenden Anspruch, wobei die Zugvorrichtung (40) bei ihrer Betätigung von außen über den Fortsatz (42) direkt mit dem Betätigungsnocken (30) in Kontakt kommt, wodurch der genannte Fortsatz (42) den Betätigungsnocken (30) in Öffnungsrichtung schwenkt. 40

Revendications

1. Contre-serrure pour un battant inactif d'une porte à deux battants, comprenant une came d'actionnement (30) couplée à un fouillot (10), un coulisseau supérieur (12) configuré pour être couplé à une tige supérieure (18) par laquelle le blocage du battant inactif (3) à un point de blocage supérieur (A) est maintenu lorsque la contre-serrure (5) est en position neutre, un coulisseau inférieur (15) configuré pour être couplé à une tige inférieure (19) par laquelle le blocage du battant inactif (3) à un point de blocage inférieur (B) est maintenu lorsque la contre-serrure (5) est en position neutre, les deux coulisseaux (12, 15) étant mobiles l'un par rapport à l'autre, la came d'actionnement (30) étant configurée pour déplacer au moins un des coulisseaux (12, 15) lorsque le fouillot (10) est tourné dans une direction d'ouverture provoquant la libération des points de blocage supérieur et inférieur (A, B) du battant inactif (3), et un poussoir (50) configuré pour actionner un pêne (8) d'une serrure (4), le pêne (8) étant logé au moins partiellement dans la contre-serrure (5) lorsque la contre-serrure (5) est en position neutre, bloquer un battant actif (2) de la porte à double battant (1) en un point de blocage central (C), la came d'actionnement (30) étant configurée pour actionner, dans un premier temps, le poussoir (50) lorsque le fouillot (10) est tourné dans le sens de l'ouverture provoquant la libération du point de blocage central (C), et pour ensuite, dans une deuxième étape, déplacer au moins l'un des coulisseaux (12, 15) en débloquent les points de blocage supérieur et inférieur (A, B) du battant inactif (3), la came d'actionnement (30) est configurée pour tourner lorsque le suiveur (10) est tourné dans le sens de l'ouverture, la came d'actionnement (30) comprenant une surface de support (35) qui, dans la position neutre, est en contact avec le poussoir (50), ladite surface de support (35) étant configurée pour agir sur le poussoir (50) en le faisant tourner dans la direction opposée à la direction d'ouverture dans la première étape lorsque le sui- 45

- veur (10) est tourné dans la direction d'ouverture, **caractérisée en ce que** la surface de support (35), dans la position neutre, bloque la rotation du poussoir (50), et **en ce que** la came d'actionnement (30) comprend une surface d'actionnement (32) configurée pour entrer en contact avec le curseur inférieur (15) dans la deuxième étape lorsque la came d'actionnement (30) a tourné d'un angle spécifique dans la direction d'ouverture depuis la position neutre.
2. Contre-serrure pour un battant inactif selon la revendication précédente, dans laquelle, en position neutre, la surface d'actionnement (32) n'entre pas en contact avec le coulisseau inférieur (15).
 3. Contre-serrure pour un battant inactif selon la revendication 1 ou 2, dans laquelle le poussoir (50) est accouplé par l'intermédiaire d'un accouplement (51), ledit poussoir (50) étant pivotant par rapport audit accouplement (51), le support entre le poussoir (50) et la came d'actionnement (30) étant disposé en position neutre sous l'axe de rotation de l'accouplement (51), obligeant le poussoir (50) à rester en appui sur la came d'actionnement (30).
 4. Contre-serrure pour un battant inactif selon l'une quelconque des revendications précédentes, comprenant des moyens de blocage (60) pour maintenir le blocage du mouvement des coulisseaux (12, 15) dans la position neutre de la contre-serrure (5), les moyens de blocage (60) comprenant une bascule (20) couplée à au moins un coulisseau (12, 15), la came d'actionnement (30) en position neutre bloquant la rotation de la bascule (20), empêchant les curseurs (12, 15) de se déplacer, le moyen de blocage (60) étant débloqué lorsque le fouillot (10) est tourné dans le sens de l'ouverture.
 5. Contre-serrure pour un battant inactif selon la revendication précédente, dans laquelle le battant (20) comprend une saillie (23) en forme de coin qui, en position neutre, bute contre une surface de rétention (36) de la came d'actionnement (30).
 6. Contre-serrure pour un battant inactif selon la revendication précédente, dans laquelle la surface de rétention (36) de la came d'actionnement (30) est une surface courbe.
 7. Contre-serrure pour un battant inactif selon la revendication précédente, dans laquelle la surface de rétention (36) est une surface incurvée sensiblement concentrique à un axe de rotation de la came d'actionnement (30).
 8. Contre-serrure pour un battant inactif selon l'une quelconque des revendications 5 à 7, dans laquelle une extrémité (23b) de la saillie (23) du battant (20) maintient le contact avec la surface de rétention (36) de la came d'actionnement (30) pendant la rotation de la came d'actionnement (30) dans le sens de l'ouverture depuis la position neutre jusqu'à ce que la surface d'actionnement (32) entre en contact avec le coulisseau inférieur (15), la came d'actionnement (30) empêchant la rotation du battant (20).
 9. Contre-serrure pour un battant inactif selon l'une quelconque des revendications précédentes, dans laquelle le battant (20) est couplé de manière pivotante à un boîtier de serrure (6) de la contre-serrure (5) par l'intermédiaire d'un premier couplage (24), ledit battant (20) étant en outre couplé respectivement au coulisseau inférieur (15) et au coulisseau supérieur (12) par l'intermédiaire d'un deuxième couplage (21) et d'un troisième couplage (22), ledit deuxième couplage (21) et ledit troisième couplage (22) étant disposés aux extrémités opposées du battant (20).
 10. Contre-serrure pour un battant inactif selon l'une quelconque des revendications précédentes, comprenant une tirette (40) comportant une saillie (43) accessible depuis l'extérieur de la contre-serrure (5), et un prolongement (42) configuré pour actionner la came d'actionnement (30) de telle sorte que, lorsque la tirette (40) est actionnée à travers la saillie (43), elle provoque la rotation de la came d'actionnement (30) et la libération des points de blocage (A, B) du battant inactif (3).
 11. Contre-serrure pour un battant inactif selon la revendication précédente, dans laquelle la tirette (40) entre directement en contact avec la came d'actionnement (30) à travers le prolongement (42) lorsque la tirette (40) est actionnée de l'extérieur, provoquant le pivotement de la came d'actionnement (30) dans le sens de l'ouverture par ledit prolongement (42).

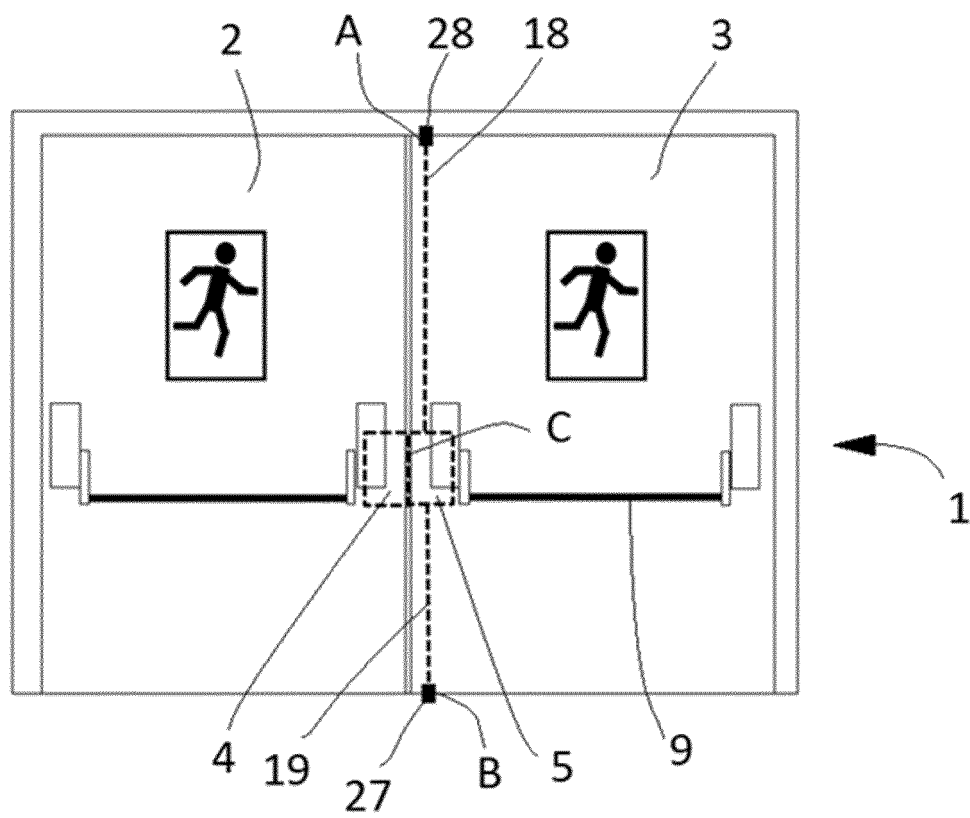


FIG. 1

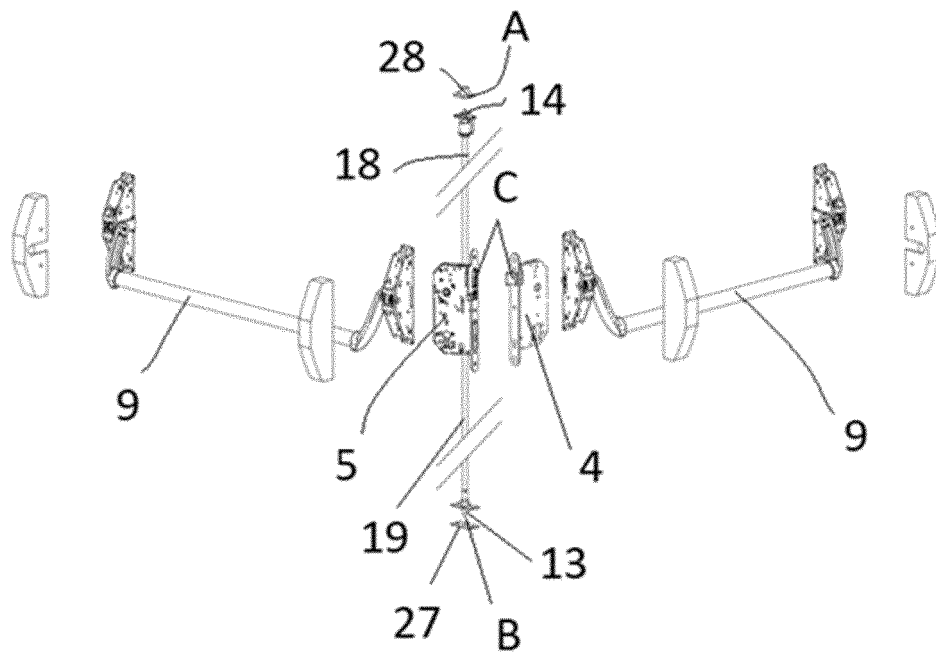


FIG. 2

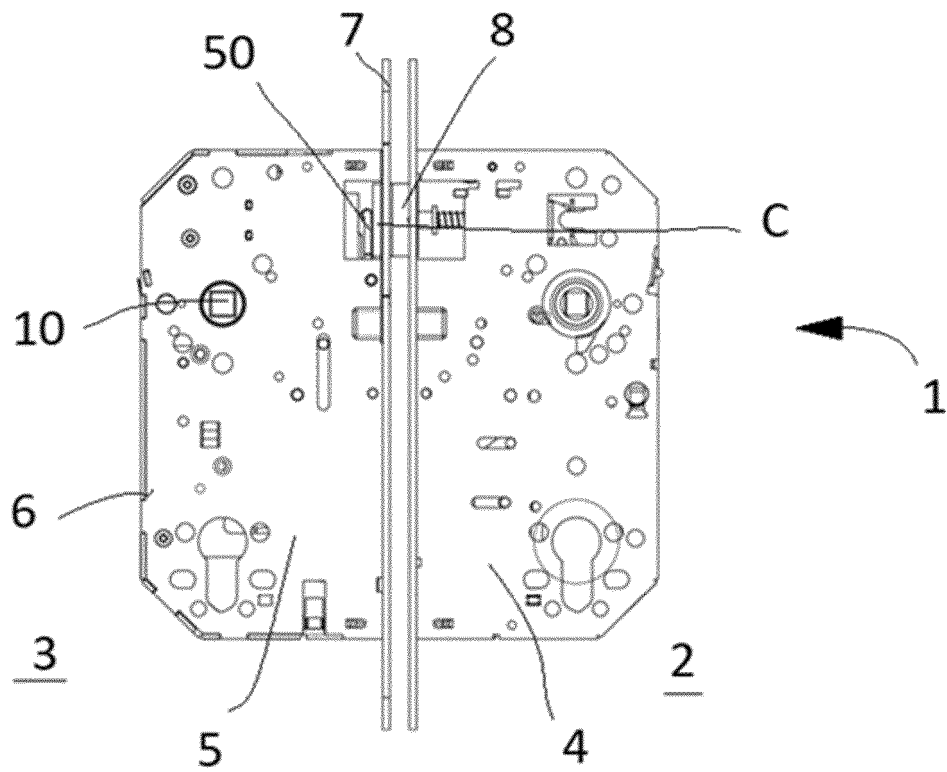


FIG. 3

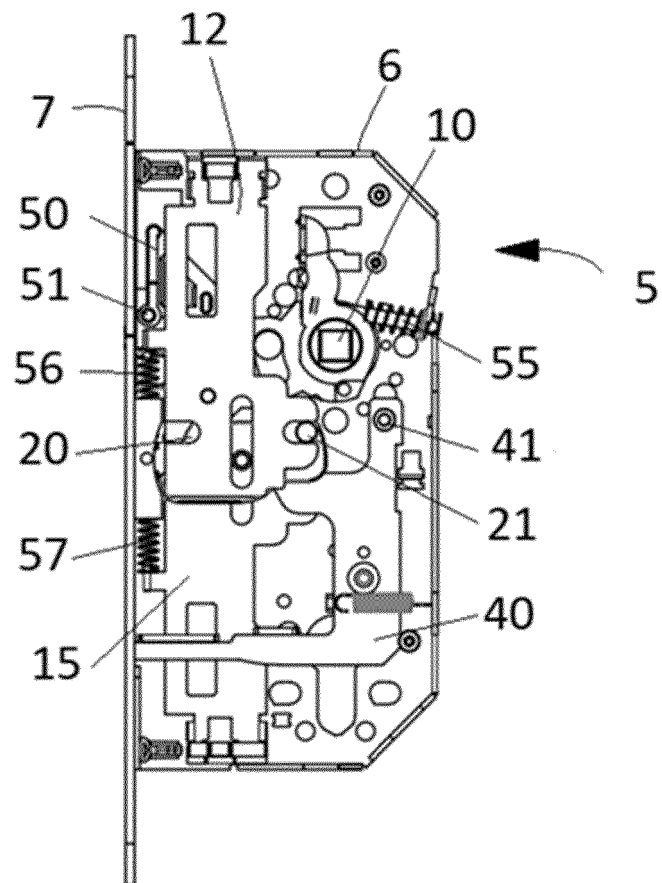


FIG. 4

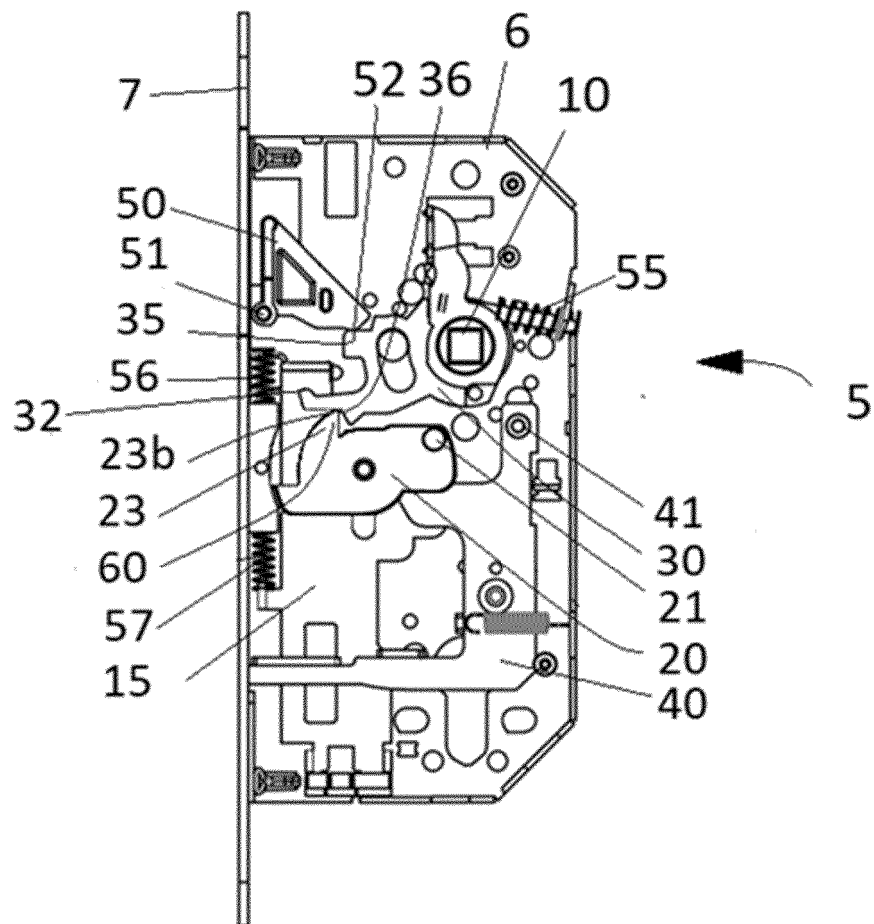


FIG. 5

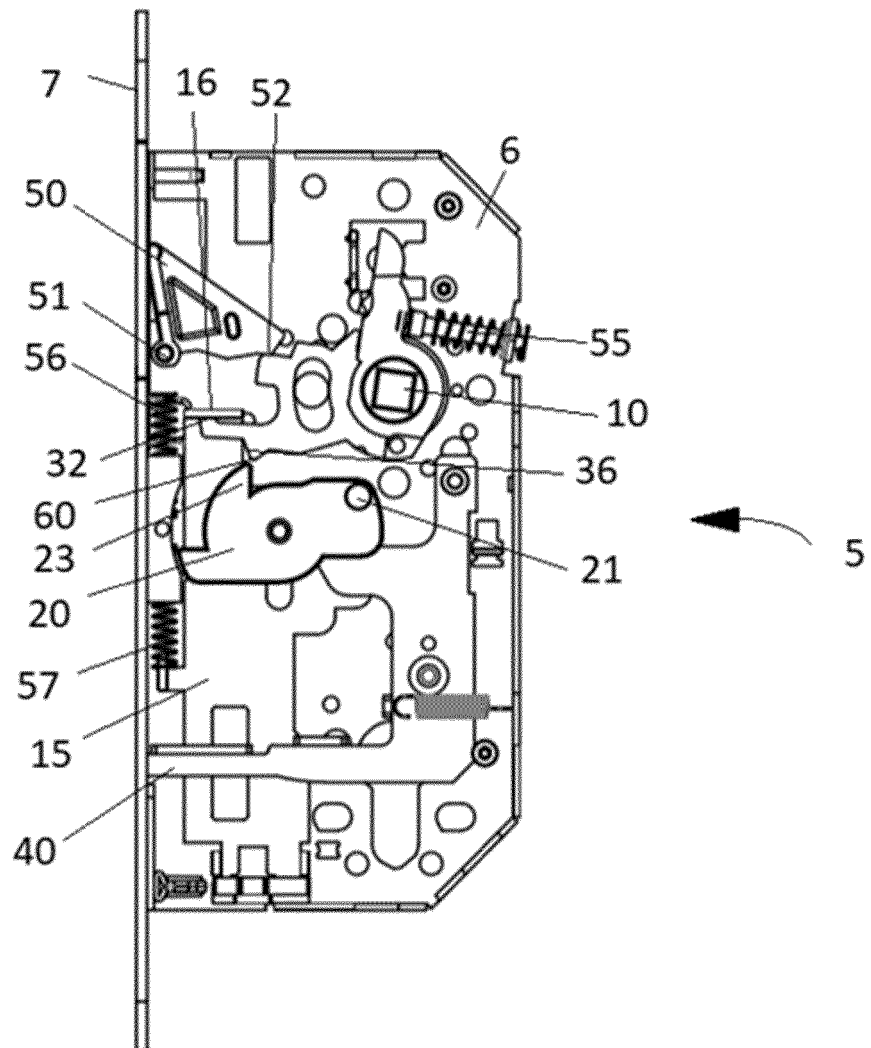


FIG. 6

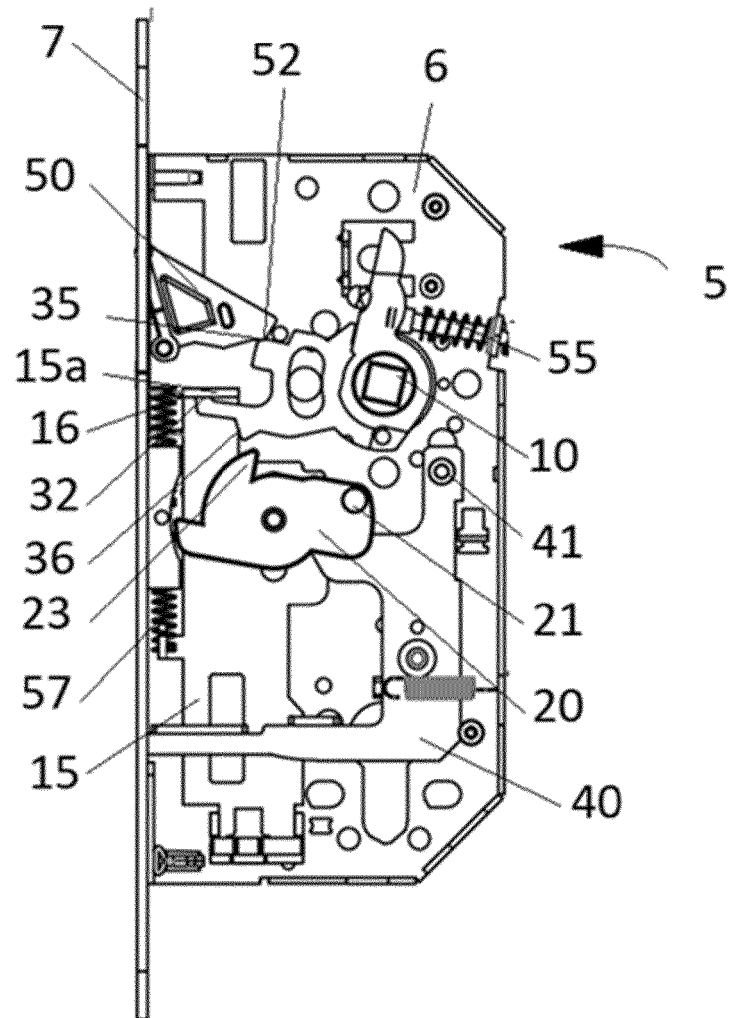


FIG. 7

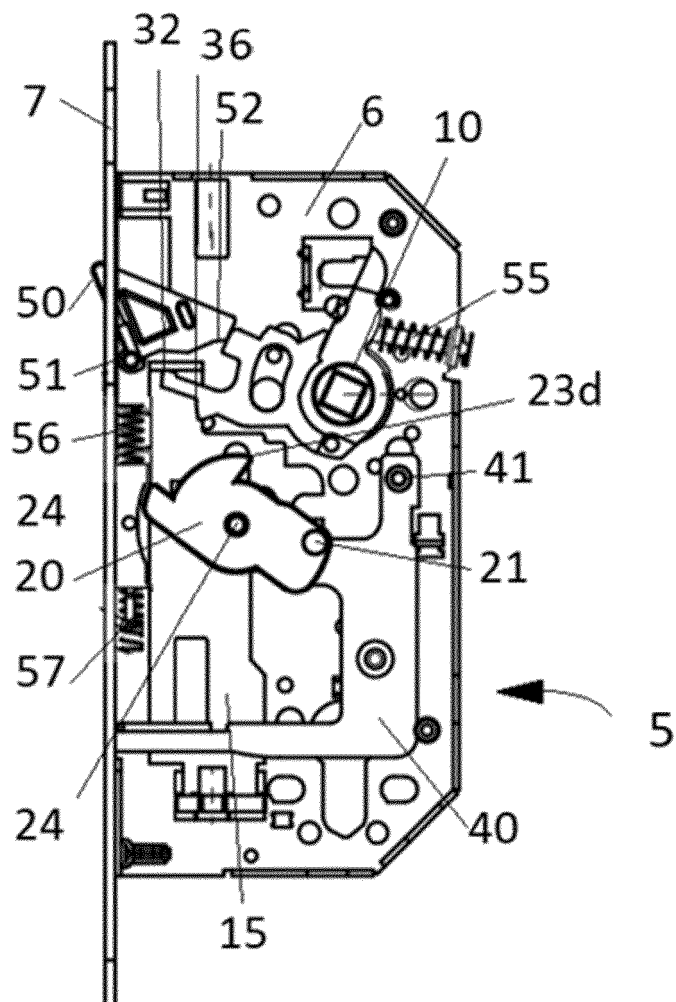


FIG. 8

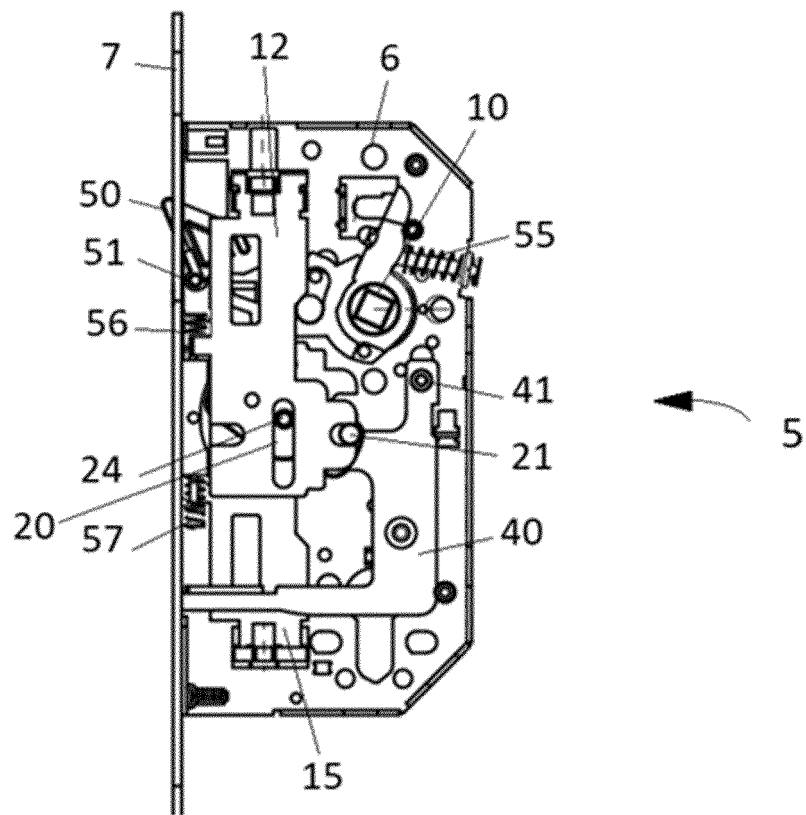


FIG. 9

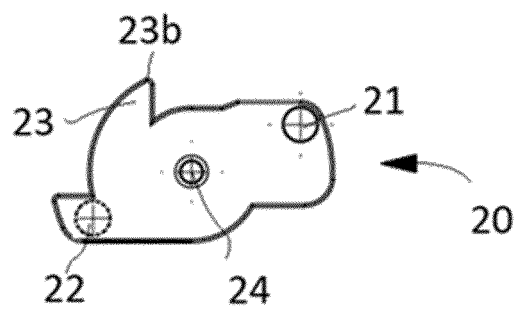


FIG. 10

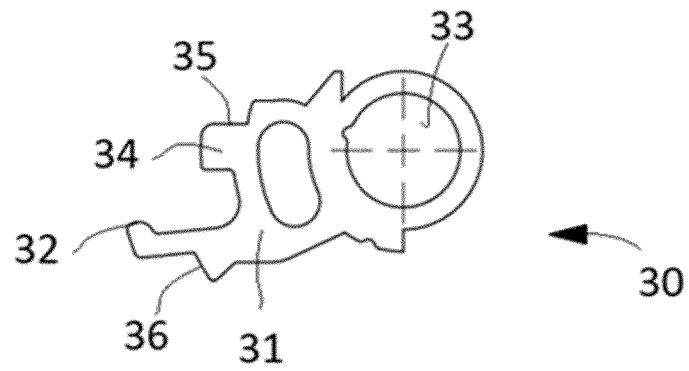


FIG. 11

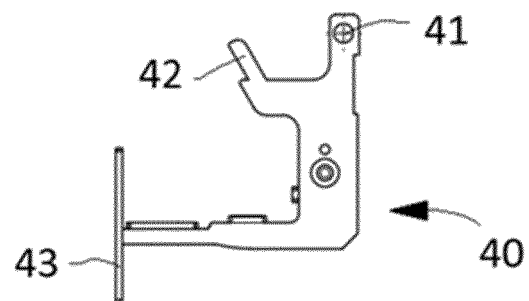


FIG. 12

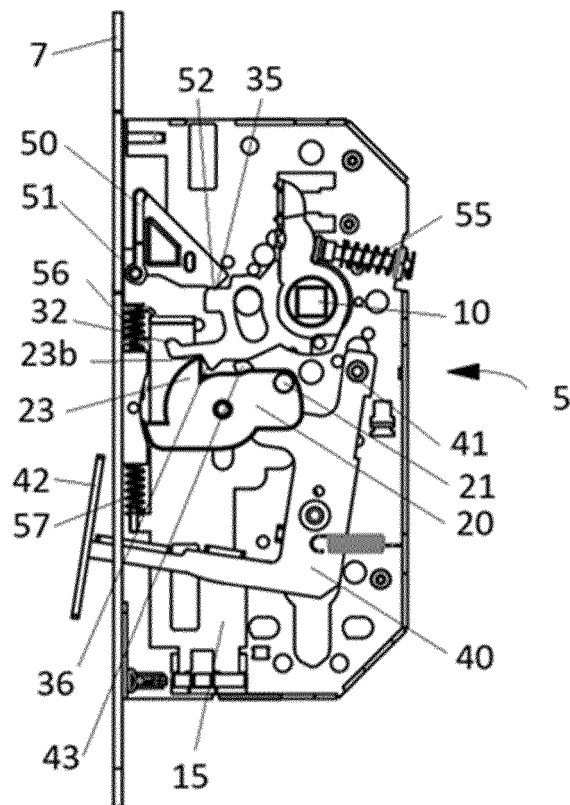


FIG. 13

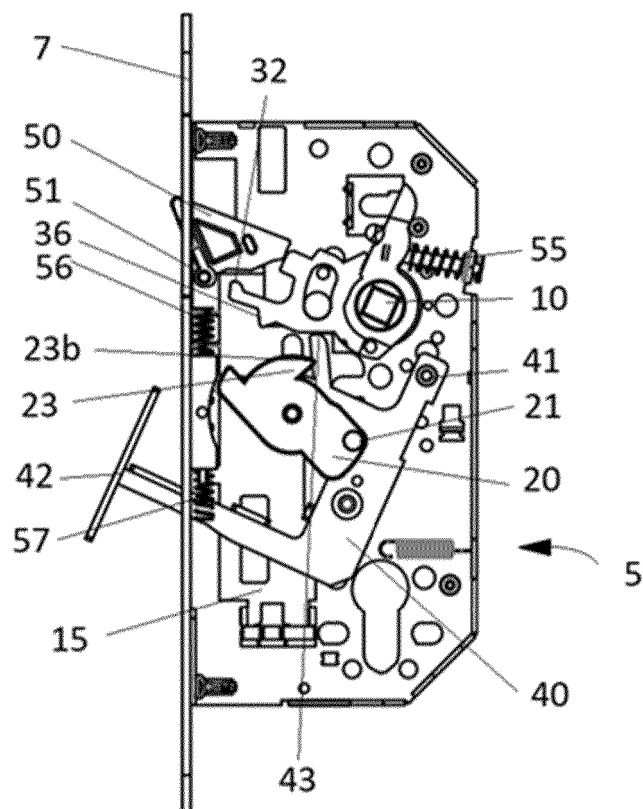


FIG. 14

REFERENCES CITED IN THE DESCRIPTION

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