



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
01.11.2017 Bulletin 2017/44

(51) Int Cl.:
E05B 65/00 (2006.01) **E05B 15/02** (2006.01)
E05B 59/00 (2006.01)

(21) Application number: **17168030.9**

(22) Date of filing: **25.04.2017**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

(71) Applicant: **Locinox**
8790 Waregem (BE)

(72) Inventor: **TALPE, Joseph**
8551 Heestert-Zwevegem (BE)

(74) Representative: **Gevers Patents**
Intellectual Property House
Holidaystraat 5
1831 Diegem (BE)

(30) Priority: **26.04.2016 BE 201605287**

(54) **STRIKE PLATE**

(57) The invention provides a strike plate (1) provided for cooperating with a lock mounted on a gate (6), said lock having a latch bolt and a deadbolt (28). The strike plate (1) includes a folded metal plate (14) and a spacer formed by a plastic part (15) and a leg (12) of an angled section (11). The strike plate (1) has a slot (8) provided for the latch bolt and a cavity (21) formed by the spacer and by an opening in the bottom (10) of the slot (8). This

cavity (21) is provided to receive the deadbolt (28) and has a depth (d_2) which is at least 25 % of the total depth (D) of the strike plate (1). The strike plate (1) is safer, because the metal plate (14) is less fragile and can also not be unfolded by exerting a pressure on the deadbolt (28), because this deadbolt (28) extends into the cavity (21) through the bottom (10) of the slot (8).

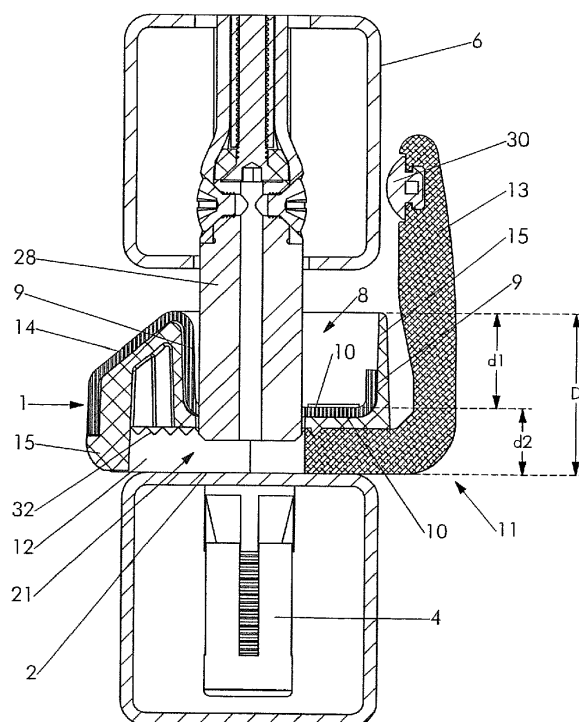


Fig. 7b

Description

[0001] The present invention relates to a strike plate adapted to being mounted with its rear side against a surface of a stay and cooperating with a lock having a latch bolt and a deadbolt, which are each movable between an extended and a retracted position. The strike plate has a front side, having at least one sloping side for the automatic depression of the latch bolt, and a slot, having a predetermined depth, two side walls, and a bottom. The slot is adapted to receive the latch bolt and the deadbolt in their extended position, the bottom of the slot having an opening at the level of the deadbolt.

[0002] Such strike plates are typically used at gates or doors in an enclosure, and are already known from patent publications EP 1 600 584 A1 and US 6,684,669 B1. These known strike plates are mounted on a post and are adapted for locking the gate or door, in conjunction with the latch bolt and the deadbolt. These known strike plates consist mainly of two parts, namely a block and an angled section. The angled section is made of metal, one leg fitting adjustably into the block, and the other leg being provided as a striker for the gate. The block is made of cast aluminium, with a slot for the latch bolt and the deadbolt. In particular, the block is made of stainless cast aluminium because this is the simplest and cheapest way of obtaining such a shape.

[0003] However, cast aluminum is a fragile material that can easily be broken. Therefore, it is possible to force the strike plate by exerting sufficient force on the gate, causing the strike plate to break, thereby enabling the deadbolt to be released out of the slot, thus enabling the gate to be opened. This force can be exercised, for example, by placing a crowbar between the gate and the post.

[0004] A further disadvantage of the already known strike plate is that the block, which is made of cast aluminum, will wear out over time. In particular, due to the frequent closing of the gate or door causing the latch bolt to scrape over the sloping side of the block. This wear is of course undesirable and also hinders the gate or door from closing automatically. A gate or door that automatically closes is already known and can, for example, work with a hinge provided for that purpose, as in patent publication EP 1 680 567 B1. A further disadvantage of the known strike plates is that the cast aluminium corrodes quickly. As a result, the latch bolt can less easily slide over the sloping side of the strike plate, hindering the automatic closing of the gate or door, and the gate or door will often not close when this is done with a gate closer with spring. Certainly in the case of children, it is important that the gate, whose lock is provided so that children cannot release it, for example in a fence around a swimming pool, closes in a reliable way.

[0005] In practice, the already known strike plates further have an opening in the bottom of the slot, which extends up against the side of the angled section located immediately behind it. The opening thus forms a cavity

with a depth equal to the thickness of the bottom of the slot, which in practice is approximately only 2 mm. This opening provides a security in case the deadbolt cannot fully extend into the slot, for example, if the gate and the post on which the strike plate is mounted connect with virtually no play. It is therefore only in exceptional cases that the deadbolt will extend into this slot in its extended position. However, this opening weakens the block further so it becomes even easier to break the strike plate.

[0006] It is an object of the present invention to provide a strike plate that is better resistant to breaking.

[0007] This object is achieved because the strike plate has a folded metal plate that forms at least one of the two sidewalls of the slot, the bottom of the slot, and said sloping side, the strike plate further including a spacer that is at least partially made of plastic and provided to keep the bottom of the slot at a distance from said surface, the spacer, together with the opening in the bottom of the slot, forming a cavity provided for receiving the end of the deadbolt in its extended position and having a depth which is at least 25 % of the total depth that is the sum of the depth of said slot and the depth of said cavity.

[0008] A folded metal plate is less fragile than cast aluminium and thus breaks less easily. The folded metal plate will also not wear out quickly because of the scraping of the latch bolt over the folded metal plate due to the frequent closing of the gate or door. Furthermore, the spacer provides support for the folded metal plate and allows for a cavity to be provided into which the deadbolt can extend through the bottom of the slot. This provides a safer strike plate, as the folded metal plate is not only less fragile but can also not be unfolded by exerting a pressure on the deadbolt, as this deadbolt extends into the bottom of the slot.

[0009] An alternative solution to increase the safety of the strike plate is to manufacture it completely from stainless steel, instead of cast aluminium. However, stainless steel is an expensive material which would of course result in an expensive strike plate.

[0010] In an embodiment of the invention, the spacer comprises at least a first and a second part, the first part being made of said plastic and attached to the rear side of said folded metal plate and the second part comprising an angled section with a first leg provided to be mounted between the first part of the spacer and said surface, and a second leg protruding from the front of the strike plate beyond the slot of the strike plate.

[0011] The second leg of the angled section forms a door stop for a gate or door with the lock such that the latch bolt and deadbolt are immediately aligned correctly to be extended into the slot and the cavity, respectively.

[0012] In an embodiment of the invention, the first part of the spacer has a grooved rear and said first leg a grooved front, provided for engaging the grooved back of said first part. In particular, said angled section is extruded from metal.

[0013] The grooved front and grooved rear ensure that the angled section cannot be moved relative to the re-

maining part of the strike plate as a result of the stroke of the gate or door. If the angled section is extruded from metal, this grooved back can also be easily manufactured.

[0014] In an embodiment of the invention, the front side of the strike plate has a further sloping side, said sloping side being provided for automatically depressing the latch bolt when it is right handed and said further sloping side being provided for automatically depressing the latch bolt when it is left handed. In particular, said folded metal plate forms said further sloping side and both side-walls of the slot.

[0015] In this embodiment, the strike plate is always suitable for both left-handed and right-handed locks, without having to attach the strike plate to the post upside down. In order to further strengthen the strike plate, the further sloping side is also formed by the folded metal plate.

[0016] In an embodiment of the invention, the strike plate has a first and a second longitudinal side extending along the slot, said sloping side being located on the first longitudinal side and said further sloping side being located on the second longitudinal side, and it being possible for said second leg of the angled section to protrude both on the first and the second longitudinal side.

[0017] In this embodiment, it is possible to use the angled section for both left-handed and right-handed locks by simply placing the angled section along the corresponding longitudinal side of the strike plate. Neither in this embodiment does the strike plate therefore ever need to be mounted upside down.

[0018] In an embodiment of the invention, the strike plate comprises a security mechanism provided for cooperating with a protrusion on the lock to prevent the lock and strike plate from being pulled apart, the security mechanism having a first and a second longitudinal side extending in the longitudinal direction of the slot, the first longitudinal side having an opening through which the protrusion of the lock can engage the security mechanism, and the second longitudinal side being closed, and the security mechanism being reversible relative to the folded metal plate to orient the first longitudinal side depending on the left or right-handedness of the latch bolt.

[0019] In this embodiment, the strike plate comprises an additional security mechanism that prevents the strike plate and lock from being pulled apart. Due to this additional security mechanism, it is impossible to mount the strike plate in its entirety upside down on the post. However, the reversibility of the security mechanism, in other words, the fact that the security mechanism can be mounted in two different orientations, ensures that the strike plate is still suitable for both left-handed and right-handed locks.

[0020] The invention will hereafter be explained in further detail by way of the following description and the accompanying drawings.

Figure 1 shows a perspective view of a strike plate

of the present invention mounted on a post.

Figure 2 shows a partially exploded view of the strike plate of Figure 1.

Figure 3 shows a further exploded view of a part of the strike plate of Figure 1.

Figure 4 shows a perspective view of the strike plate of Figure 1 in conjunction with a gate with a lock in a closed position thereon.

Figure 5 shows a lock with a latch bolt, a deadbolt, and a protrusion. The protrusion is optional and is provided for cooperating with a strike plate which, in contrast to the strike plate shown in the previous figures, comprises a corresponding security mechanism.

Figures 6a, 6b and 6c show a top view of the strike plate of Figure 4 and illustrate the operation of the sloping side of the strike plate upon closing the gate. Figures 7a and 7b each show a cross-section at different heights, at the height of the latch bolt and at the height of the deadbolt, respectively, through the strike plate and the gate of Figure 6c.

Figure 8 shows an exploded view of an alternative embodiment of a strike plate of the present invention, provided with an additional security mechanism as also shown in Figure 5.

[0021] Figure 1 shows a perspective view of a strike plate 1 according to the invention, mounted on a surface 2 of a post. The strike plate 1 is mounted with its rear side against the surface 2 of the post, and is attached thereto by two bolts 3 which pass through the strike plate 1, and which are secured by means of a plug mechanism 4 through openings 5 of the post provided for this purpose. In particular, the bolts 3 have a conical head, which is recessed in conical recesses provided for this purpose around the openings 5. This method of attachment is illustrated in the exploded view shown in Figure 2.

[0022] In Figures 1 and 2, it is clearly visible that the front side of the strike plate has a sloping side 7 and a slot 8. The slot 8 has a depth d_1 (Indicated in Figures 7a and 7b), two sidewalls 9 and a bottom 10. The function of these elements is described below. Figures 1 and 2 show further that the strike plate 1 also comprises an angled section 11 whose first leg 12 is parallel to the surface 2 of the post and forms a part of the rear of the strike plate 1, and whose second leg 13 forms a striker for closing a gate 6 as described below. The angled section 11 is extruded from metal and thus forms a single element, which increases the strength of the strike plate 1.

[0023] Figure 3 shows a further exploded view of the part of the strike plate 1 without the angled section 11. The strike plate 1 shown in Figure 1 thus consists of three parts: the angled section 11, a folded metal plate 14, and a plastic part 15. As is clear from Figure 3, the folded metal plate 14 forms one of the two sidewalls 9, a portion of the other sidewall 9 and the bottom 10 of the slot 8. The folded metal plate 14 also forms the sloping side 7

of the strike plate 1. However, the metal plate 14 can also form the entire other sidewall 9 of the slot 8. Since the strike plate 1 is provided for attachment to the surface 2 of a post or other support which is in the open air, it is advantageous that the metal of the folded metal plate 14 is stainless steel. Furthermore, it is advantageous for the strength of the strike plate 1 that the folded metal plate 14 is made of steel, in particular stainless steel.

[0024] The plastic part 15 is preferably made of thermoplastic plastic which is moulded in the necessary shape. The shape of the front side of the plastic part 15 of the strike plate 1 corresponds to the shape of the folded metal plate 14. In particular, the metal plate 14 is also supported by the plastic part 15 at the height of the sloping side 7 of the strike plate 1, so that the metal plate 14 can be deformed even less easily. The rear of the plastic part 15 forms, together with the first leg 12 of the angled section 11, the rear of the strike plate 1. Furthermore, the first leg 12 and the plastic part 15 together form a spacer provided to keep the bottom 10 of the slot 8 at a distance from the surface 2 of the post. The advantages of such a spacer are described below.

[0025] Figure 3 further shows that the folded metal plate 14 and the plastic part 15 each have an opening 18, 19 in the bottom 10 of the slot 8 and further two openings 16, 17. The openings 16, 17 form openings through which the bolts 3 can be placed to secure the strike plate 1 to the post as already described above. The opening 18 in the folded metal plate 14, together with the opening 19 in the plastic part 15, and a recess 20 in the first leg 12 of the angled section 11 (indicated in Figure 2), together form a cavity 21 of a certain depth d_2 (indicated in Figure 7b). This cavity 21 is thus formed by the spacer which consists of the plastic part 15 and the first leg 12 of the angled section 11 and which forms the necessary space between the bottom 10 of the slot 8 and the surface 2 of the post where the cavity 21 is located. The function of the cavity 12 is described below.

[0026] Figure 3 further shows that the plastic part 15 has three protrusions 22 corresponding to three round openings 23 in the folded metal plate 14 at the bottom 10 of the slot 8. These protrusions 22 are provided to secure the folded metal plate 14 to the plastic part 15. To this end, the round openings 23 of the folded metal plate 14 are placed on the protrusions 22, after which the tips of the protrusions 22 protruding through the plate 14 are heated and plastically deformed so that the protrusions 22 become stuck in the openings 23.

[0027] Figure 4 shows a perspective view of the strike plate 1 in conjunction with a gate 6 with a lock 24 in a closed position thereon. For the sake of clarity, only one tube of the entire gate 6 is shown. The lock 24 is an externally mounted lock on a gate 6. It will be apparent to a person skilled in the art that the strike plate 1 can also be used for a door in which the lock 24 is internally mounted or for a gate with an internal lock 24. The lock 24 comprises a door handle 25 and a lock cylinder 27 which operate a latch bolt 26 and a deadbolt 28 (indicated

in Figure 5), respectively, and can move them between an extended and a retracted position. Both the latch bolt 26 and the deadbolt 28 have a 'throw length', i.e. the distance between the retracted and extended position. It will be apparent to a person skilled in the art that the door handle 25 and the lock cylinder 27 may be replaced by other mechanisms for operating the latch bolt 26 and the deadbolt 28. It will also be apparent to a person skilled in the art that the latch bolt 26 of the lock 24 is intended to be used frequently for opening and closing the gate 6. In contrast, the deadbolt 28 is intended for securing the gate 6 and the deadbolt 28 and the strike plate 1 must therefore be secured together sufficiently such that the gate 6 cannot be easily broken open.

[0028] The lock 24 comprises a latch bolt spring to move the latch bolt 26 to its extended position. The door handle 25 is thus provided for moving the latch bolt 26, against the latch bolt spring, to its retracted position. The lock shown in Figure 5 also comprises a protrusion 37 provided for cooperating with a security mechanism 38 as described below. Such an externally mounted lock 24 with a latch bolt 26, a deadbolt 28, and a protrusion 37, is already known in the prior art, for example, from patent publication US 6,684,669 B1.

[0029] Figures 6a, 1b and 6c show a top view of the strike plate 1 and the gate 6 to illustrate closing the gate 6. Figure 6a shows the first contact between the gate 6 with the lock 24 thereon and the strike plate 1 mounted on a post when closing the gate 6. When closing the gate 6, the latch bolt 26 is in the extended position, unless the door handle 25 is used to prevent this, and the deadbolt 28 is in its retracted position.

[0030] The latch bolt 26 has a sloping side 29 that strikes the sloping side 7 of the strike plate 1. Due to the movement of the gate 6 and the sloping side 7, the latch bolt 26 is depressed, which is also helped by the sloping surface 29 of the latch bolt 26, as shown in Figure 6b. As soon as the latch bolt 26 is beyond the sloping side 7, the latch bolt 26 will slide back out due to the action of the latch bolt spring, and extend into the slot 8 of the strike plate 1 and thus close the gate 6, as shown in Figure 6c. To open the gate 6 again, it will then be necessary to use the door handle 25 to move the latch bolt 26 back to the retracted position, after which it will once again be out of the slot 8 and the gate 6 can therefore be opened again.

[0031] Figures 6a, 6b and 6c also show that the second leg 13 of the angled section 11 serves as a striker for the gate 6. The second leg 13 extends from the front side of the strike plate 1 to beyond the slot 8 of the strike plate 1 and thus forms a striker for the gate 6 with the lock 24. The second leg 13 is provided with a strip 30 made of rubber in order to thus reduce the possible impact of the gate 6 against the second leg 13 and to avoid damage.

[0032] It will furthermore be apparent to a person skilled in the art that it is not necessary for both the latch bolt 26 to have a sloping side 29, and the strike plate 1 to have a sloping side 7. Either one will suffice to auto-

matically press the latch bolt 26 when closing the gate 6. However, it is advantageous that both sloping elements 7, 29 are present, to allow more clearance between the post on which the strike plate 1 is mounted and the gate 6 with the lock 24. This advantage can be further enhanced by the use of an adjustable latch bolt 26, where it is possible to adjust the distance between the latch bolt 26 and the lock 24 as described, for example, in patent publication EP 0 963 498 B1.

[0033] Figure 7a shows a cross-section at the height of the latch bolt 26 through the strike plate 1 and the gate 6 in a closed position. This cross-section shows that the latch bolt 26 extends into the slot 8 and substantially touches the bottom 10. Preferably, the depth d_1 of the slot 10 will be substantially equal to the throw length of the latch bolt 26 and, more preferably, the depth d_1 of the slot 10 will be smaller than the throw length of the latch bolt 26. In Figure 7a, the depth d_1 of the slot 8 will be approximately 1.5 cm and be provided for a latch bolt 26 with a throw length of approximately 1.8 cm, but depending on the throw length of the latch bolt 26, this depth d_1 may vary. Figure 6a further shows that the plastic part 15 serves to support the folded metal plate 14, in particular, also at the sloping side 7 of the strike plate 1. This support allows the deadbolt 26 to extend through the bottom 10 of the slot 8, resulting in a stronger strike plate 1 as described above.

[0034] A further important advantage of the plastic part 15 is that, in contrast to the metal plate 14, it can have a grooved rear 31. The first leg 12 of the angled section 11 has a grooved front 32 engaging the grooved rear 31. This grooved front 32 is also easy to manufacture, since the angled section 11 will preferably be extruded from metal, in particular, stainless steel. The angled section 11 will furthermore also have two elongated recesses 33 where the bolts 3 are located. The elongated recesses 33 make it possible to adjust the distance between the second leg 13 and a longitudinal side of the strike plate 1. This is advantageous since it allows the strike plate 1 to be adjusted to the thickness of the gate 6 on which the lock 24 is mounted. The grooved front 32 and the grooved rear 31 then ensure that the angled section 11 can no longer move relative to the plastic part 15.

[0035] Figure 7b shows a similar cross-section as Figure 7a but at the height of the deadbolt 28. In this cross-section, it is immediately clear that the cavity 21, formed by the opening 18 in the folded metal plate 14, the opening 19 in the plastic part 15, the recess 20 of the angled section 11, and the surface 2 of the post, is provided for receiving the deadbolt 28 in its extended position. Because the deadbolt 28 is in the cavity 21 of the strike plate 1, it is very difficult to still force the lock 24, since a force exerted on the deadbolt 28 is passed directly to the entire strike plate 1 and not only to a sidewall 9 of the slot 8, which is the case with the already known strike plates.

[0036] As mentioned above, in practice, a certain amount of variation is possible in the distance between

the gate 6 and the post. The depth d_2 of the cavity 21 is therefore sufficiently large to accommodate the possible play. More specifically, the depth d_2 of the cavity 21 should preferably be at least 25 % of the total depth D, which is the sum of the depth d_1 of the slot 8 and the depth d_2 of the cavity 21, and more preferably, at least 35 % of this total depth D. Furthermore, the depth d_2 of the cavity 21 should preferably be up to 55 %, and more preferably, up to 45 % of the total depth D. In this way, the slot 8 will be deep enough to receive the latch bolt 26 in its extended position. Furthermore, the total depth D should preferably be between 2 and 3 cm, more preferably between 2.3 and 2.7 cm, and most preferably, substantially 2.5 cm. This total depth D should preferably be substantially equal to the throw length of the deadbolt 28. It will therefore be apparent to a person skilled in the art that the total depth D of the strike plate 1 is dependent on the throw of the deadbolt 28. Specifically, if the slot 24 used has a deadbolt 28 with a throw length of 2.5 cm, the strike plate 1 will preferably have a total depth D of substantially 2.5 cm.

[0037] The strike plate 1 as described above can be used both for a left-handed and a right-handed gate 6 or door, since the strike plate 1 is symmetrical in its longitudinal direction; in other words, the bottom and the top of the strike plate 1 are identical, such that the strike plate 1 can be mounted upside down.

[0038] Figure 8 shows an exploded view of an alternative embodiment of a strike plate 1 provided to cooperate with a lock 24 having a latch bolt 26 and a deadbolt 28, as well as a protrusion 37, which is shown in Figure 5. The protrusion 37 is provided to cooperate with the security mechanism 38. Specifically, by closing the gate 6, the protrusion 37 moves to the security mechanism 38 and they fit together because the security mechanism 38 has a longitudinal side which is open. Once the gate 6 is closed, the protrusion 37 and the security mechanism 38 ensure that it is not possible to pull the gate 6 away from the post, as described in patent publication US 6,684,669 B1. The security mechanism 38 is made of cast stainless metal for strength, in particular, cast stainless steel.

[0039] Such a security measure 38 ensures that the strike plate 1 is no longer symmetrical in its longitudinal direction; in other words, the bottom of the strike plate 1 is no longer identical to the top of the strike plate 1, as was the case with the strike plate shown in Figure 2. It is of course important that the strike plate 1 still be suitable for both a left-handed and a right-handed gate 6. Therefore, in this embodiment, the front side of the strike plate 1 has a second sloping side 34. Depending on whether the gate 6 is left-handed or right-handed, either the sloping side 7 or the second sloping side 34 is used to automatically press in the latch bolt 26. The second leg 13 of the angled section 11 is then placed along the sloping side 7, if the second sloping side 34 is used to push in the latch bolt 26, and vice versa, if the sloping side 7 is used to push in the latch bolt 26. However, to allow the double placement of the angled section 11, the plastic

part 15 is constructed differently and space is now provided on both longitudinal sides for the placement of the first leg 12 of the angled section 11. The space that is not used for the placement of the angled section 11 is then sealed with a filling element 35. However, to ensure the strength of the strike plate 1, the folded metal plate 14 in this embodiment still forms the second sloping side 34 and both sidewalls 9.

[0040] To compare the strength of the strike plate 1 with the already known strike plates, comparative tests have been performed. The already known strike plate is described in US 6,684,669 B1, in particular, in the exploded view shown in Figure 16 of US 6,684,669 B1, and is made of cast aluminium with a wall thickness of substantially 3 mm. The strike plate 1 of the present invention is shown in a similar exploded view shown in Figure 2 and the folded metal plate 14 is substantially made of stainless steel with a thickness of approximately 1.5 mm. Both strike plates have the same overall dimensions, namely, a length of substantially 16.5 cm, with a total depth D of 2.5 cm. The depth d_1 of the slot 8 in the already known strike plate is 1.8 cm and with the current strike plate this depth d_1 is 1.5 cm, and the depth d_2 of the cavity is 2.5 cm. In the already known strike plate, the deadbolt 28 was extended up to the bottom 10 of the slot 8, while in the present strike plate, the deadbolt 28 was extended up to the bottom of the cavity 21; in other words, 1 cm deep into the cavity 21. The comparative tests were performed by applying a force to a lock 24 in a strike plate 1 as shown in Figure 4. The force was applied to the gate 6 in the opening direction of the gate 6, in Figure 4 thus pushing the gate 6 away from the striker, formed by the second leg 13 of the angled section 11. Specifically, the force is transmitted via the deadbolt 28 to the sidewall 9 of the slot 8, which also includes the sloping side 7 in the already known strike plate. In the current strike plate, this force is transmitted to the cavity 21. These tests showed that the already known strike plate broke at a force of approximately 3,000 N, while the strike plate of the present invention did not even break at a force of approximately 15,000 N. It is therefore clear that the current strike plate 1 is much stronger and thus more secure against being broken.

Claims

1. Strike plate (1) adapted for being mounted on a surface (2) and cooperating with a lock (24) having a latch bolt (26) and a deadbolt (28), which are each movable between an extended and a retracted position, said strike plate (1) being adapted to be mounted with its rear side against said surface (2) and having a front side which has at least one sloping side (7) for automatically depressing the latch bolt (26) and a slot (8) having a predetermined depth (d_1), two sidewalls (9), and a bottom (10), said slot (8) being

arranged to receive the latch bolt (26) and the deadbolt (28) in their extended position, the bottom (10) of the slot (8) having an opening (18) at the level of the deadbolt (28),

characterised in that the strike plate (1) comprises a folded metal plate (14) that forms at least one of the two sidewalls (9) of the slot (8), the bottom (10) of the slot (8), and said sloping side (7), the strike plate (1) further including a spacer that is at least partially made of plastic and provided to keep the bottom (10) of the slot (8) at a distance from said surface (2),

the spacer, together with the opening (18) in the bottom (10) of the slot (8), forming a cavity (21) provided for receiving the end of the deadbolt (28) in its extended position and having a depth (d_2) which is at least 25 % of the total depth (D) that is the sum of the depth (d_1) of said slot (8) and the depth (d_2) of said cavity (21).

2. Strike plate (1) according to claim 1, **characterised in that** the spacer comprises at least a first (15) and a second part (11), the first part (15) being made of said plastic and attached to the rear side of said folded metal plate (14) and the second part (11) comprising an angled section with a first leg (12) provided to be mounted between the first part (15) of the spacer and said surface (2), and a second leg (13) protruding from the front of the strike plate (1) beyond the slot (8) of the strike plate (1).
3. Strike plate (1) according to claim 2, **characterised in that** said angled section (11) is extruded from metal.
4. Strike plate (1) according to claim 2 or 3, **characterised in that** the first part (15) of the spacer (1) has a grooved rear (31) and said first leg (12) has a grooved front (32) provided for engaging the grooved rear (31) of said first part (15).
5. Strike plate (1) according to one of the previous claims 2 to 4, **characterised in that** the front side of the strike plate (1) has a further sloping side (34), said sloping side (7) being provided for automatically depressing the latch bolt (26) when it is right handed and said further sloping side (34) being provided for automatically depressing the latch bolt (26) when it is left handed.
6. Strike plate (1) according to claim 5, **characterised in that** the strike plate (1) has a first and a second longitudinal side extending along the slot (8), said sloping side (7) being located on the first longitudinal side and said further sloping side (34) being located on the second longitudinal side, and it being possible for said second leg (13) of the angled section (11) to protrude both on the first and the second longitu-

dinal side.

7. Strike plate (1) according to claim 5 or 6, **characterised in that** said folded metal plate (14) forms said further sloping side (34) and both sidewalls of the slot (8). 5
8. Strike plate (1) according to one of the previous claims 5 to 7, **characterised in that** the strike plate (1) comprises a security mechanism (38) provided for cooperating with a protrusion (37) on the lock (24) to prevent the lock (24) and strike plate (1) from being pulled apart, the security mechanism (38) having a first and a second longitudinal side extending in the longitudinal direction of the slot (8), the first longitudinal side having an opening through which the protrusion (37) of the lock (24) can engage the security mechanism (38), and the second longitudinal side being closed, and the security mechanism being reversible relative to the folded metal plate (14) to orient the first longitudinal side depending on the left or right-handedness of the latch bolt (26). 10 15 20
9. Strike plate (1) according to one of the previous claims 1 to 8, **characterised in that** the bottom (10) of the slot (8) has at least one opening (23) and the spacer has at least one protrusion (22), which is made of said plastic and which is fixed in said opening (23) to secure the folded metal plate (14) to the spacer. 25 30
10. Strike plate (1) according to one of the previous claims 1 to 9, **characterised in that** the bottom (10) of the slot (8) has at least one further opening (16) provided for screwing down the strike plate (1) to said surface (2), said further opening (16) preferably having a conical recess provided for receiving a conical head of a bolt (3). 35
11. Strike plate (1) according to one of the previous claims 1 to 10, **characterised in that** the folded metal plate (14) is made of stainless steel. 40
12. Strike plate (1) according to one of the previous claims 1 to 11, **characterised in that** the total depth (D) is between 2 and 3 cm, preferably between 2.3 and 2.7 cm, and more preferably substantially 2.5 cm. 45
13. Strike plate (1) according to one of the previous claims 1 to 12, **characterised in that** the depth (d_2) of the cavity (21) is at least 35 % of the total depth (D). 50
14. Strike plate (1) according to one of the previous claims 1 to 13, **characterised in that** the depth (d_2) of the cavity (21) is up to 55 % and preferably up to 45 % of the total depth (D). 55
15. Strike plate (1) according to one of the previous claims 1 to 14, **characterised in that** said cavity (21) has no bottom and the depth (d_2) of the cavity (21) is measured between the front side of the bottom (10) of the slot (8) and said surface (2) when the strike plate (1) is mounted on said surface (2).

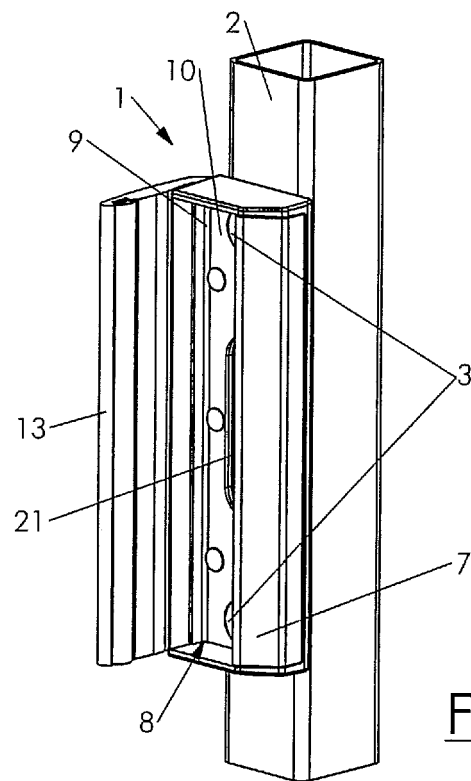


Fig. 1

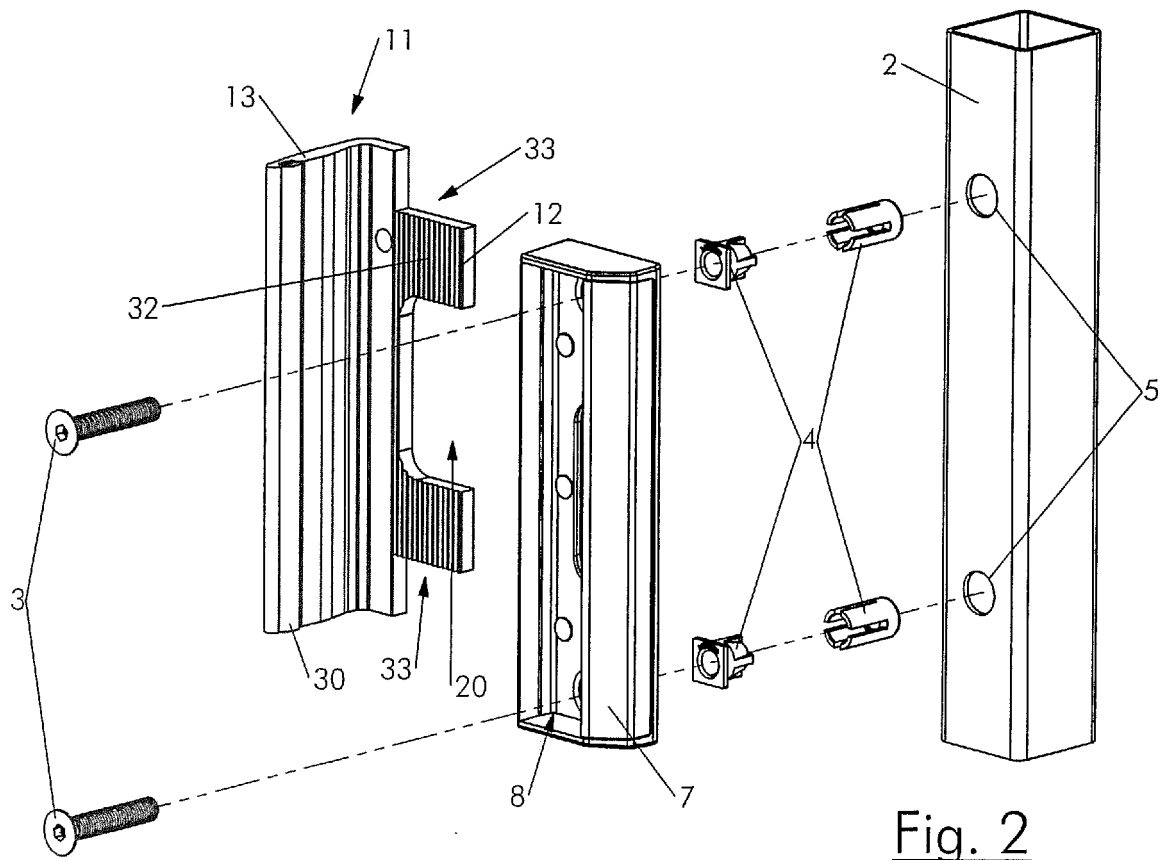


Fig. 2

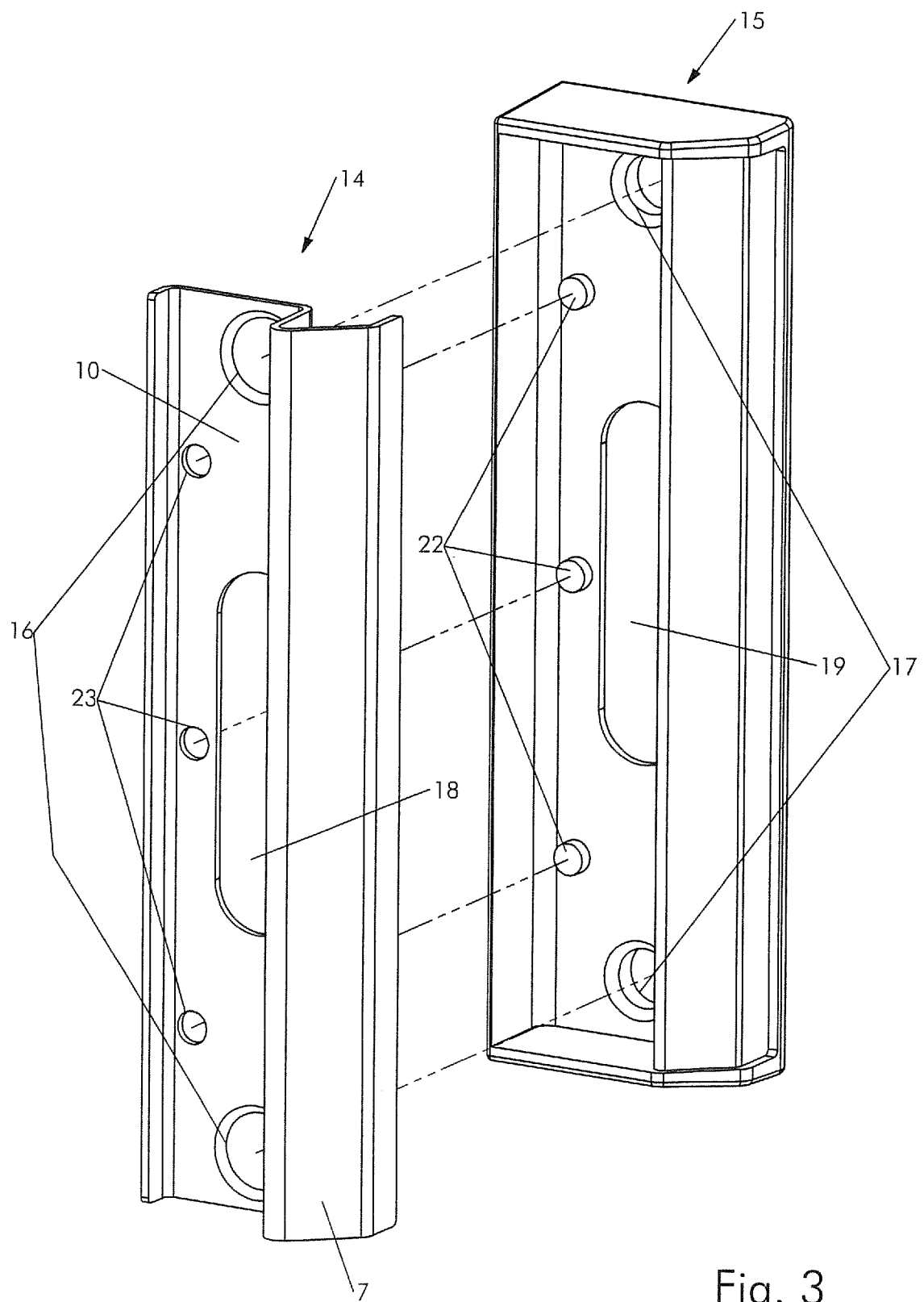


Fig. 3

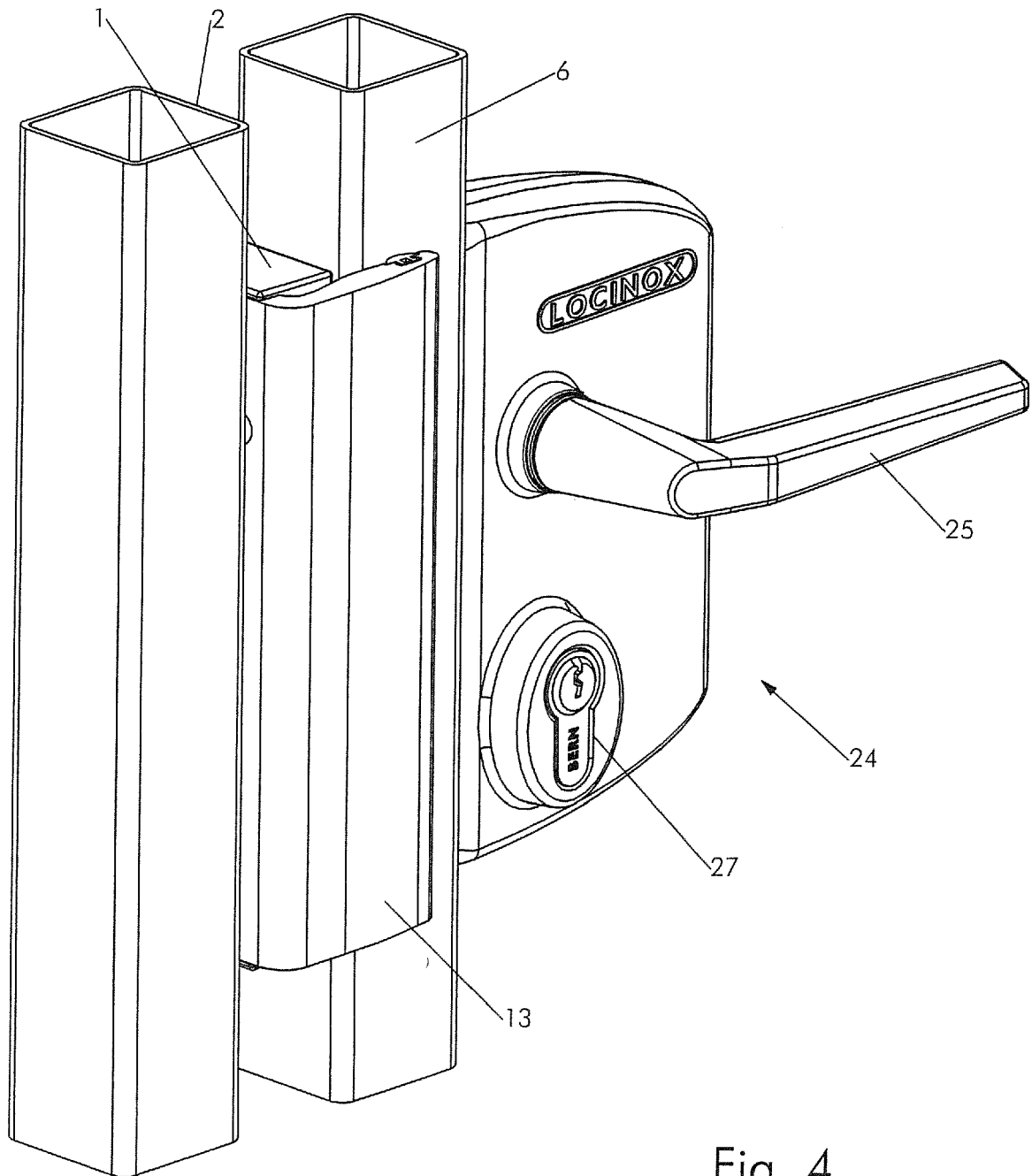


Fig. 4

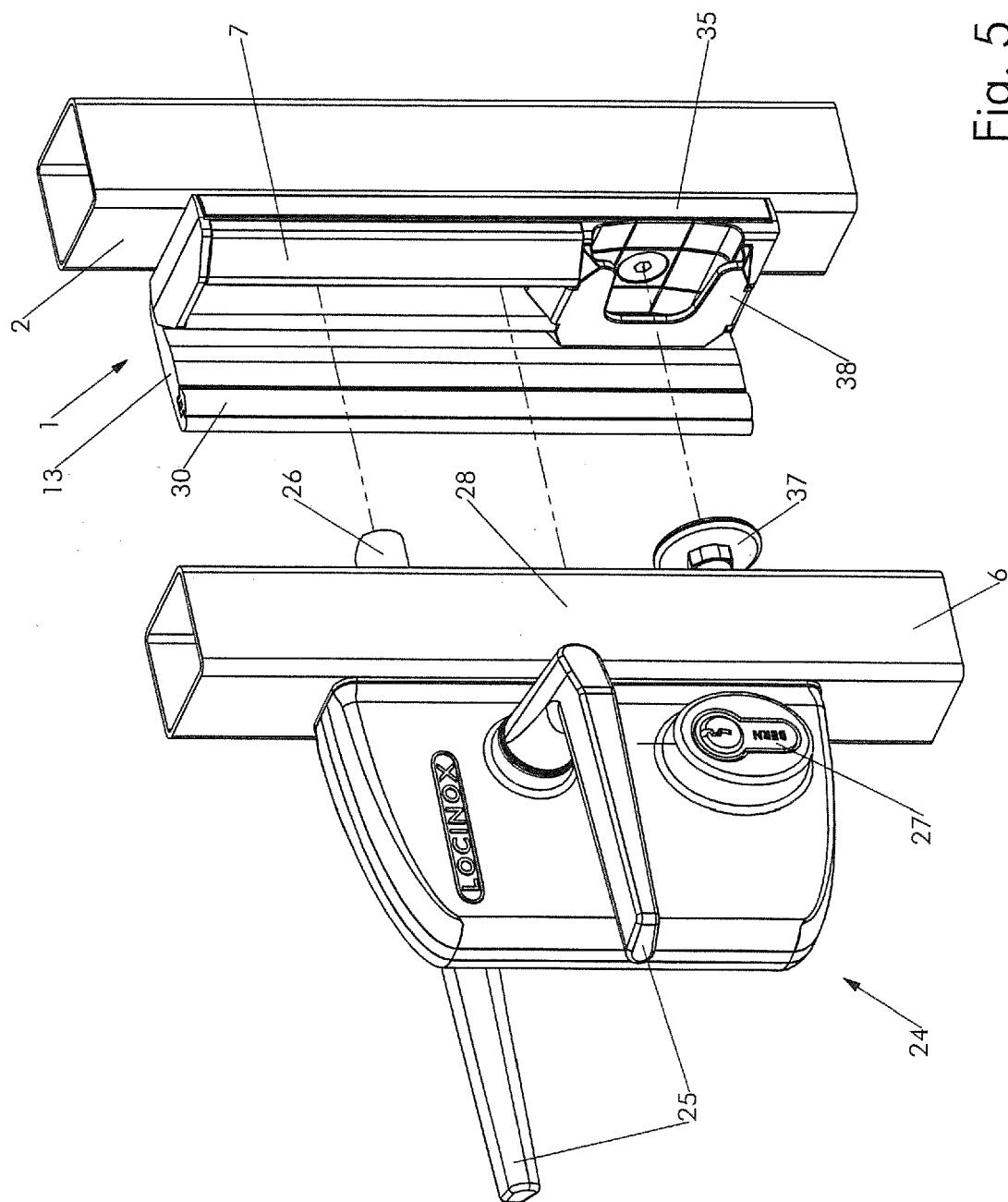
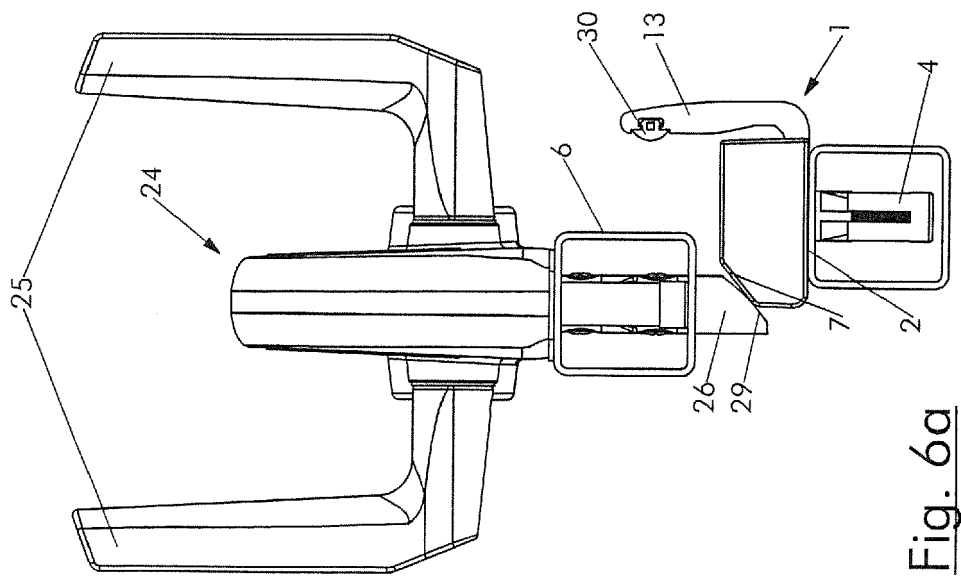
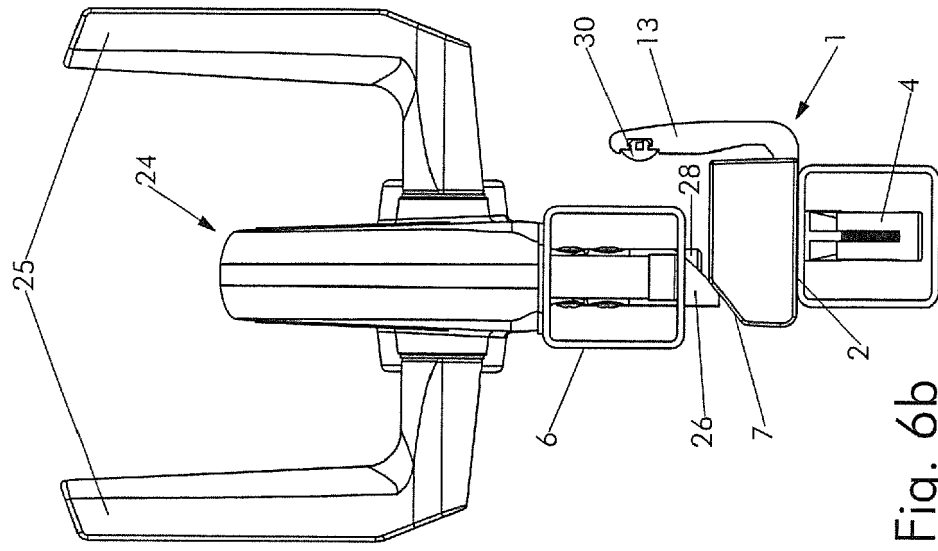


Fig. 5



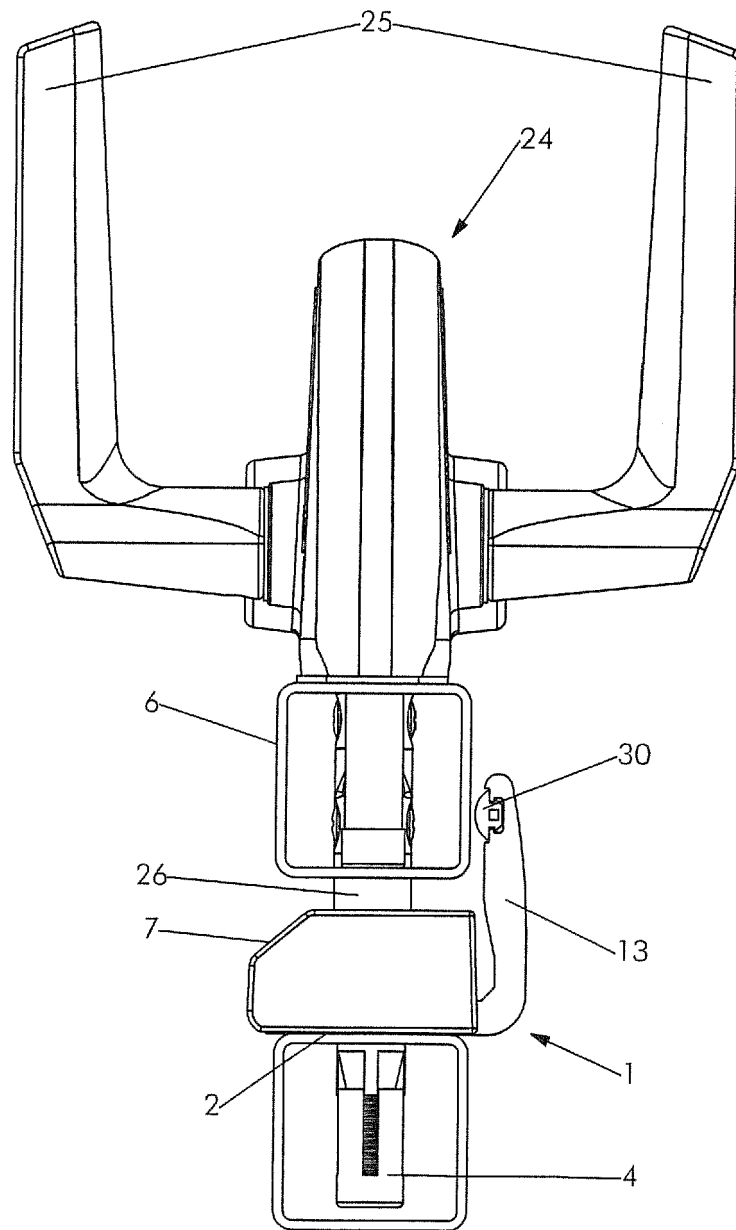


Fig. 6c

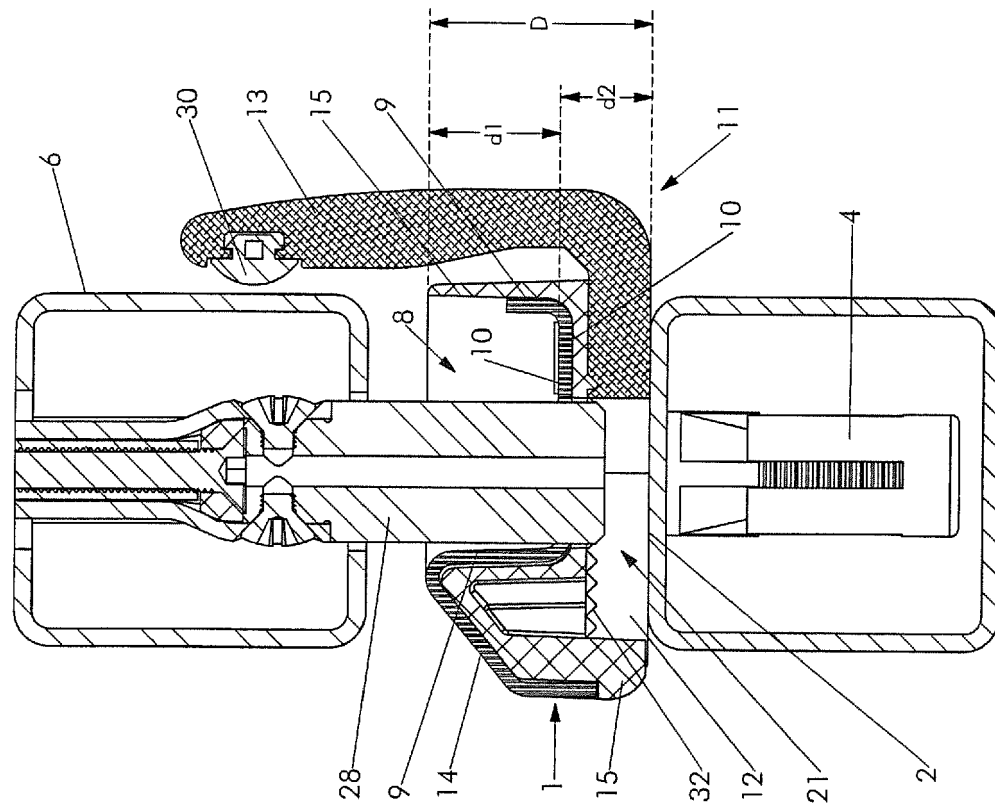


Fig. 7a

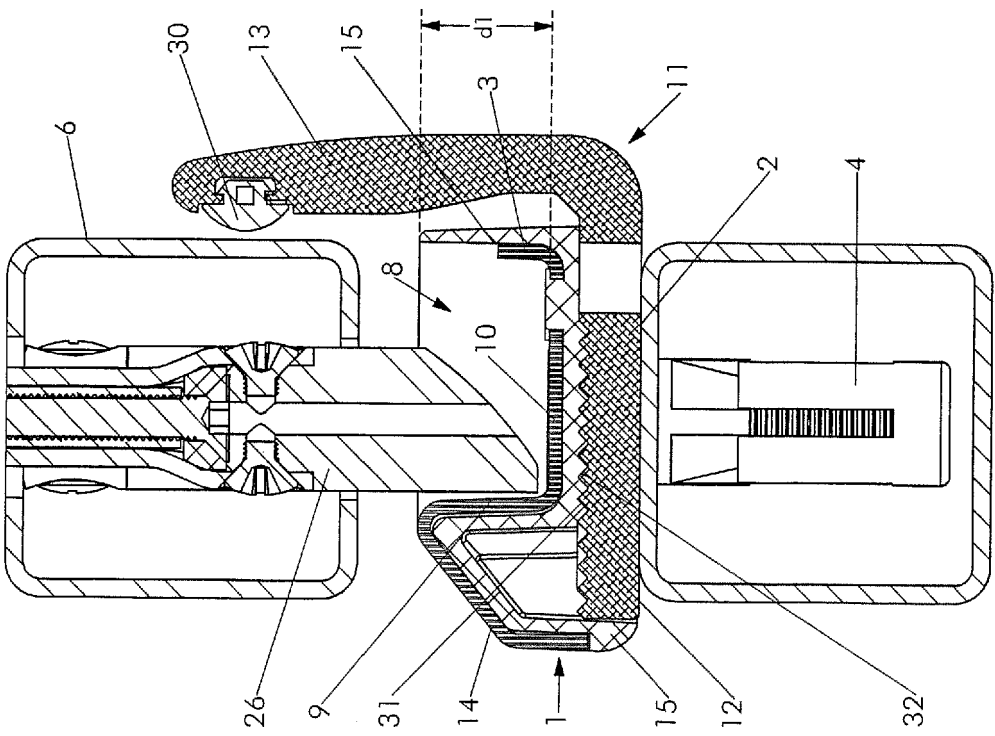


Fig. 7b

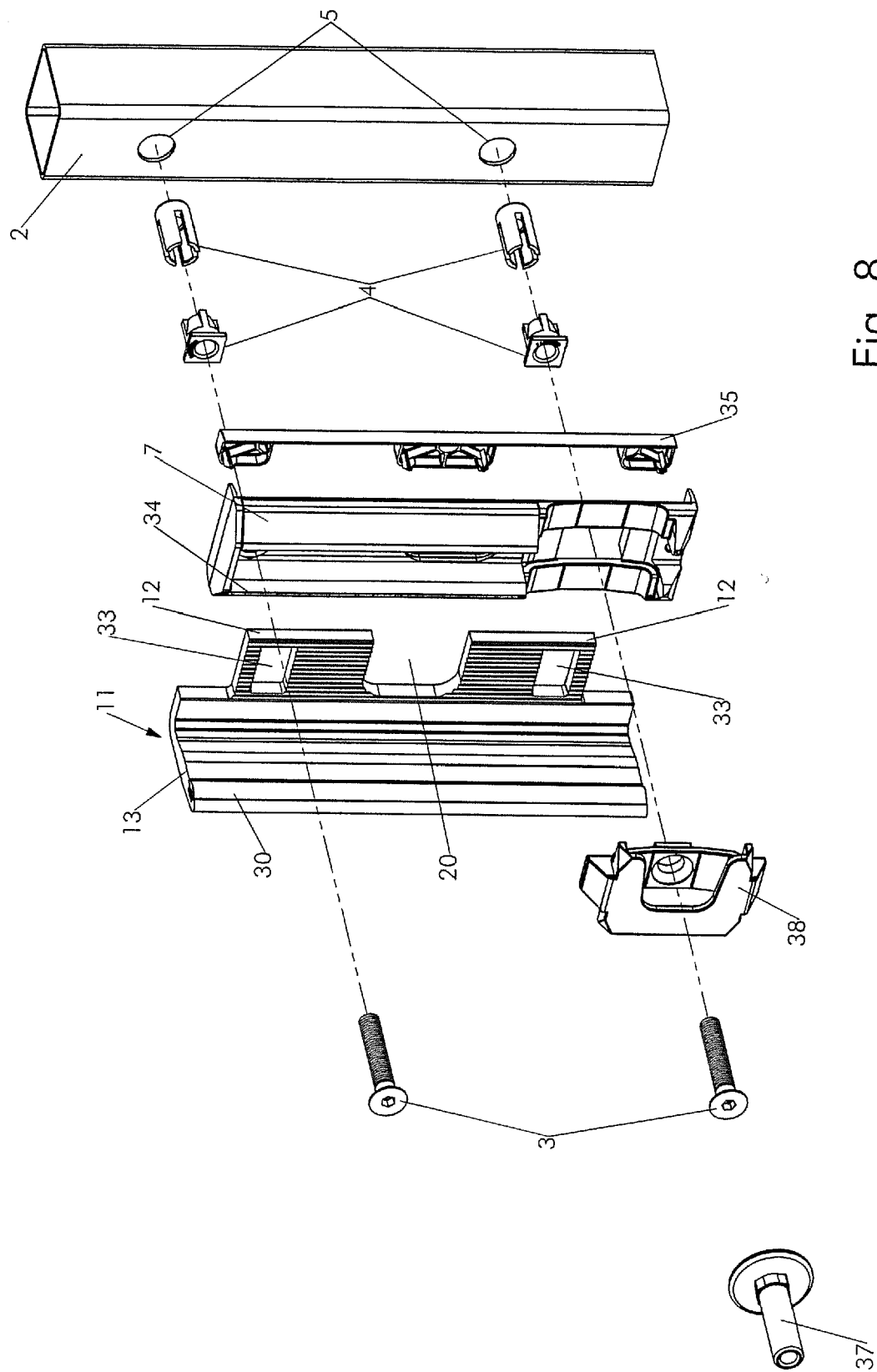


Fig. 8



EUROPEAN SEARCH REPORT

 Application Number
 EP 17 16 8030

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2010/201138 A1 (SAUDER MARK L [US]) 12 August 2010 (2010-08-12)	1	INV. E05B65/00
A	* paragraphs [0029] - [0033]; figures 4,5 *	2-15	E05B15/02
A,D	----- EP 1 600 584 A1 (TALPE JOSEPH [BE]) 30 November 2005 (2005-11-30) * the whole document *	1-15	ADD. E05B59/00
A,D	----- US 6 684 669 B1 (TALPE JOSEPH [BE]) 3 February 2004 (2004-02-03) * the whole document *	1-15	

			TECHNICAL FIELDS SEARCHED (IPC)
			E05B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 September 2017	Examiner Cruyplant, Lieve
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

 1
 EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 16 8030

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-09-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010201138 A1	12-08-2010	NONE	
EP 1600584 A1	30-11-2005	AT 455220 T	15-01-2010
		DK 1600584 T3	26-04-2010
		EP 1600584 A1	30-11-2005
		ES 2339550 T3	21-05-2010
		PT 1600584 E	15-04-2010
		US 2005262905 A1	01-12-2005
US 6684669 B1	03-02-2004	AU 6285898 A	09-09-1998
		DE 69806907 D1	05-09-2002
		DE 69806907 T2	20-03-2003
		EP 0963498 A1	15-12-1999
		US 6684669 B1	03-02-2004
		WO 9837295 A1	27-08-1998

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1600584 A1 **[0002]**
- US 6684669 B1 **[0002] [0028] [0038] [0040]**
- EP 1680567 B1 **[0004]**
- EP 0963498 B1 **[0032]**