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(54) **A SHROUDED GATE LOCK SYSTEM**

(57) The invention provides a shrouded gate lock system (100) for a barred gate (800), comprising a gate lock (200) and a shroud (300). The gate lock (200) comprises on each of opposing side faces (230) a first and second protruding portion (240, 250) having respectively a first and second receiving opening (242, 252) for receiving respectively a first and second handling means (270, 272, 274) for operating at least one locking bolt (261, 262) of the gate lock (200). The first and second protruding portions (240, 250) are located in a different

section of an upper section (211) and a lower section (212) of the gate lock (200). The shroud (300) comprises through a back wall (310) in both an upper and lower section (311, 312) a first and a second opening (320, 330) for providing access to respectively the first and second receiving opening (242, 252) of the first and second protruding portion (250) at the second side (314) of the back wall (310) when the shroud (300) is arranged against either one of the side faces (230) of the gate lock (200).

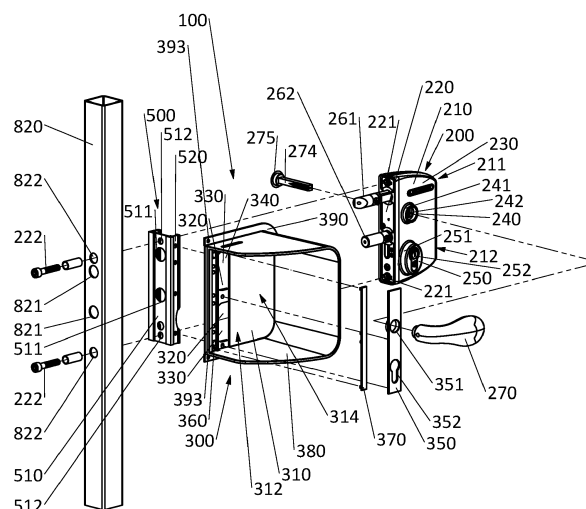


FIG. 4

Description

Technical field

[0001] The present invention relates to a shrouded gate lock system for a barred gate. The present invention also relates to a barred gate comprising the shrouded gate lock system and to a method for installing the shrouded gate lock system on a barred gate.

Background art

[0002] It is known in the state of the art, for example from patent publication EP 3 421 696 A1, to provide gate locks on a barred gate. A barred gate is a gate in an opening of a fence, wherein the gate is formed by multiple bars. The barred gate is delimited along its width at one side by a proximal bar with which the gate is hingedly attached to the fence and at the opposite side by an outer bar. When the barred gate is closed, the outer bar lies adjacent to a striking element provided on the fence, or alternatively on a further gate portion which is fixed in position. A gate lock is attached to said outer bar within the gate such that, when the barred gate is closed, at least one locking bolt of the gate lock can be brought from a retracted position to a projected position in which said locking bolt is received into a corresponding opening in the striking element, thereby locking the barred gate and thus preventing the unsolicited opening of the barred gate.

[0003] A gate lock known in the state of the art typically comprises a housing. The housing has a front face for being connected within the barred gate against an outer bar of the barred gate, and two, preferably symmetrically arranged, opposing side faces. The housing has a first section and a second section, different from the first section, selected from an upper section and a lower section of the housing. The gate lock comprises at least one locking bolt arranged through the front face of the housing, and which is moveable between a projected position and a retracted position. The gate lock is arranged such that the movement of a first locking bolt of the at least one locking bolt is operable by means of a first handling means such as a handle or push button, and such that the movement of the first locking bolt or a second locking bolt of the at least one locking bolt is operable and blockable in the projected position by means of a second handling means such as key. The gate lock comprises a first protruding portion on each of the side faces of the housing at the first section. Each first protruding portion has a first receiving opening for receiving the first handling means. The gate lock comprises a second protruding portion on each of the side faces of the housing at the second section. Each second protruding portion has a second receiving opening for receiving the second handling means.

[0004] It is known, that barred gates have the disadvantage that access from one side of the barred gate to

the other side is possible through the space between the bars of the barred gate. The inventor has found that this poses considerable security issues with the existing gate locks for barred gates. Indeed, it is common for such gate locks to be freely operable, i.e. without requiring a code or key, from an inner side of the barred gate, i.e. from within the space enclosed by the fence, whilst being securely operable, i.e. requiring a code or a key, from an outer side of the barred gate, i.e. from outside the space enclosed by the fence. The existing gate locks for barred gates thus have the problem that a person at the outer side of the barred gate can easily reach from the outer side of the barred gate through the openings between the bars of the barred gate to the inner side of the barred gate, thereby enabling this person to freely operate the gate lock, thereby circumventing the secured operation of the gate lock from the outer side of the barred gate. To that end, shrouded gate locks for barred gates have been developed in the prior art. By providing a shroud around the gate lock at the side face of the gate lock located at the inner side of the barred gate, access to the gate lock from the outer side of the barred gate is prevented. Such shrouds, known from the prior art, do however have to be provided in a different manner depending on which side face of the gate lock they have to be used, to be able to fit over the protruding portions on the side face of the gate lock, and to expose the receiving openings for the handling means within the shroud. Hence, different types of shrouds have to be provided, depending on which side face of the gate lock they have to be used, which is inconvenient. Some shrouds overcome this problem by having an open back side, but such shrouds have the disadvantage that the handling means at the inner side of the barred gate can still be accessed from the outer side of the barred gate through the open back side. And, even in case such a shroud is arranged to fit nicely onto the gate lock with its back side, such that no access to the handling means is possible through the open back side, it is often possible to just fold such a shroud away with some force, since such shrouds are often only connected at one side to the outer bar of the barred gate.

Disclosure of the invention

[0005] It is an aim of the present invention to provide a shrouded gate lock system for a barred gate, wherein the shroud can be installed on opposing sides of the gate lock in a secure manner.

[0006] This aim is achieved according to the present invention with a shrouded gate lock system for a barred gate showing the technical characteristics of the first independent claim, and with a method for installing a shrouded gate lock system on a barred gate showing the technical characteristics of the second independent claim.

[0007] Therefore, the present invention provides a shrouded gate lock system for a barred gate. The system

comprises a gate lock. The gate lock comprises a housing. The housing has a front face. Preferably, the front face is provided for being connected within the barred gate against an outer bar of the barred gate. The housing has two opposing side faces. Preferably, the opposing side faces are symmetrically arranged. The housing has a first section and a second section, different from the first section, selected from an upper section and a lower section of the housing. The gate lock comprises at least one locking bolt arranged through the front face of the housing. The at least one locking bolt is moveable between a projected position and a retracted position. The gate lock is arranged such that the movement of a first locking bolt of the at least one locking bolt is operable by means of a first handling means. Preferably, the first handling means is a handle or a pushable means such as a push button or a push bar. Preferably, the pushable means is arranged such that a pushing motion on the pushable means causes the rotation of a further element, such as a spindle, that operates the movement of the first locking bolt. The gate lock is arranged such that the movement of the first locking bolt or a second locking bolt of the at least one locking bolt is operable and blockable in the projected position by means of a second handling means. Preferably, the second handling means is a key. The gate lock comprises a first protruding portion on each of the side faces of the housing at the first section. Each first protruding portion has a first receiving opening for receiving the first handling means. The gate lock comprises a second protruding portion on each of the side faces of the housing at the second section. Each second protruding portion has a second receiving opening for receiving the second handling means. The system comprises a shroud. The shroud comprises a back wall. The back wall has a first side with which the shroud is to be arranged against the side faces of the housing of the gate lock. The back wall has a second side opposite of the first side. The shroud comprises a first opening through each of an upper section and a lower section of the back wall. Preferably, the first opening through the upper section of the back wall and the first opening through the lower section of the back wall are arranged symmetrically with respect to each other on the back wall of the shroud. One first opening is configured for providing access to the first receiving opening of the first protruding portion of the gate lock at the second side of the back wall of the shroud when the shroud is arranged against one side face of the gate lock, and the other first opening is configured for providing access to the first receiving opening of the first protruding portion of the gate lock at the second side of the back wall of the shroud when the shroud is arranged upside down against the other side face of the gate lock. Preferably, the one first opening is configured for receiving the first protruding portion of the gate lock when the shroud is arranged against one side face of the gate lock to provide the access to the first receiving opening at the second side of the back wall, and the other first opening is configured for receiving the first protruding

portion of the gate lock when the shroud is arranged upside down against the other side face of the gate lock to provide the access to the first receiving opening at the second side of the back wall. The shroud comprises a second opening through each of the upper section and the lower section of the back wall. Preferably, the second opening through the upper section of the back wall and the second opening through the lower section of the back wall are arranged symmetrically with respect to each other on the back wall of the shroud. One second opening is configured for providing access to the second receiving opening of the second protruding portion of the gate lock at the second side of the back wall of the shroud when the shroud is arranged against one side face of the gate lock, and the other second opening is configured for providing access to the second receiving opening of the second protruding portion of the gate lock at the second side of the back wall of the shroud when the shroud is arranged upside down against the other side face of the gate lock. Preferably, the one second opening is configured for receiving the second protruding portion of the gate lock when the shroud is arranged against one side face of the gate lock to provide the access to the second receiving opening at the second side of the back wall, and the other second opening is configured for receiving the second protruding portion of the gate lock when the shroud is arranged upside down against the other side face of the gate lock to provide the access to the second receiving opening at the second side of the back wall. The shroud comprises a shroud wall arranged on the second side of the back wall. The shroud wall is arranged for obstructing access to the second side of the back wall. Preferably, the shroud wall is arranged for obstructing sideways access to the second side of the back wall.

[0008] The back wall of the shroud having a first opening for providing access to the first receiving opening of a first protruding portion of the gate lock and a second opening for providing access to the second receiving opening of a second protruding portion of the gate lock in both the upper section and the lower section of the back wall offers the advantage that the shroud can not only be used on one side face of the gate lock, but also on the other side face of the gate lock when turned upside down, and this with the back side of the shroud closed off by means of the back wall. In this way the same shroud can be used in an easy and secure manner on both side faces of the gate lock.

[0009] In an embodiment of the shrouded gate lock system according to the present invention each first opening of the shroud is configured for receiving the corresponding first protruding portion of the gate lock by means of an inner wall at least along a part of its circumference having a shape complementary to the shape of the outer wall of the first protruding portion. In an embodiment of the shrouded gate lock system according to the present invention each second opening of the shroud is configured for receiving the corresponding second protruding portion of the gate lock by means of an inner wall

at least along a part of its circumference having a shape complementary to the shape of the outer wall of the second protruding portion. Preferably, at least one of the first protruding portion and the second protruding portion of the gate lock has the shape of a cylinder or of an elliptic cylinder.

[0010] These embodiments offer the advantage that the first openings and the second openings through the back wall of the shroud fit nicely over respectively the first protruding portions and the second protruding portions of the gate lock, such that no undesired openings remain in the back wall through which the second side of the back wall can be accessed from the opposite side of the barred gate. This is also advantageous to aid in correctly positioning the shroud with respect to the gate lock.

[0011] In an embodiment of the shrouded gate lock system according to the present invention the first opening and the second opening in the same section of the upper section and the lower section of the back wall of the shroud partially overlap. This embodiment is beneficial for a compact design of the gate lock and the shroud.

[0012] In an embodiment of the shrouded gate lock system according to the present invention the shroud wall runs at least partially along the circumference of the back wall. Preferably, the shroud wall runs along the entire circumference of the back wall.

[0013] In an embodiment of the shrouded gate lock system according to the present invention the system further comprises a protection plate for further obstructing access to the second side of the back wall. The protection plate has a shroud opening with a shape corresponding to the shape of the shroud wall, such that the protection plate can be arranged over the shroud with the shroud wall protruding through the shroud opening. Preferably, the system further comprises connection means for connecting the protection plate to at least one of the barred gate and the shroud. Preferably, the protection plate lies parallel to the plane of the back wall of the shroud.

[0014] This embodiment offers the advantage that with the protection plate surrounding the shroud, access to the second side of the back wall from the opposite side of the barred gate is further obstructed.

[0015] In an embodiment of the shrouded gate lock system according to the present invention the shroud comprises a flange around the back wall.

[0016] The flange is beneficial for supporting the protection plate thereon, and for connecting the protection plate to the shroud.

[0017] In an embodiment of the shrouded gate lock system according to the present invention the system further comprises at least one spacer for being arranged between the flange and the protection plate.

[0018] This embodiment offers the advantage of spacing the protection plate away from the flange such that the protection plate can lie substantially parallel to the plane of the barred gate. Indeed, in practice the gate lock

is less thick, i.e. the dimension between the opposing side faces along the thickness direction of the barred gate, than is the outer bar, often causing the outer bar to protrude outwards in the thickness direction of the barred gate with respect to the side face of the gate lock. Because the back wall, and thus also the flange of the shroud, lies adjacent to this side face, any protection plate supported by the flange would have to extend somewhat along the thickness direction of the fence in order to also be supported by the outer bar. Therefore, a sufficient amount of spacers are applied on the flange such that the last spacer lies flush with the outer bar of the barred gate.

[0019] In an embodiment of the shrouded gate lock system according to the present invention the system further comprises a connection profile provided for connecting the shroud to the outer bar of the barred gate. Preferably, the connection profile is a U-shaped connection profile. The connection profile comprises a front wall provided for being connected to the outer bar of the barred gate, for example by having pre-drilled screw holes. The connection profile further comprises two side walls between which the gate lock is received when the gate lock is connected to the outer bar of the barred gate. The side walls are both provided for being connected to the shroud, for example by having pre-drilled screw-holes.

[0020] The connection profile is beneficial as it provides a simple interface between the gate lock, the shroud, and the outer bar of the barred via which the gate lock, the shroud, and the outer bar can easily be connected to each other.

[0021] In an embodiment of the shrouded gate lock system according to the present invention the side walls of the connection profile and the back wall of the shroud are provided with corresponding connection openings for connecting the shroud to the connection profile, preferably with suitable connection means, such as bolts. Preferably, bolts for connecting the shroud to the connection profile are inserted first through the connection openings in one of the side walls from in between the side walls and then bolted in the connection openings at the second side of the back wall of the shroud. In this way the bolts cannot be accessed when the gate lock is received between the side walls of the connection profile, such that the shroud cannot easily be disconnected from the connection profile.

[0022] In an embodiment of the shrouded gate lock system according to the present invention the back wall is provided with connection openings for connecting a pushable means, such as push button or a push bar, as the first handling means to the back wall at the second side, preferably with suitable connection means, such as bolts. Preferably, the back wall is provided both in the upper section and lower section of the back wall with such connection openings, such that the pushable means can be attached to the back wall of the shroud in both sections.

[0023] In an embodiment of the shrouded gate lock system according to the present invention the back wall is provided at the second side with at least one recessed area in which openings in the back wall are located. The shroud further comprises at least one cover element for being arranged in the at least one recessed area for at least partially covering the openings located in the at least one recessed area. Preferably, the aforementioned connection openings for connecting the pushable means to the back wall at the second side are one of the openings provided in such a recessed area. Preferably, the aforementioned connection openings in the back wall of the shroud for connecting the shroud to the aforementioned connection profile with bolts are one of the openings provided in such a recessed area. Preferably, the first openings and the second openings through the back wall of the shroud for respectively providing access to the first receiving opening and the second receiving opening of the first protruding portions and the second protruding portions of the gate lock are one of the openings provided in such a recessed area.

[0024] The at least one cover element is beneficial to not leave any openings through the back wall of the shroud opened, through which the second side of the back wall can be accessed from the opposite side of the barred gate. Providing recessed areas for the at least one cover element is beneficial to align the at least one cover element with the second side of the back wall of the shroud, and have a nice finish of the second side of the back wall.

[0025] In an embodiment of the shrouded gate lock system according to the present invention the shroud is arranged symmetrically.

[0026] The shroud that is arranged symmetrically in its entirety is beneficial for use of the shroud on opposing side faces of the gate lock, and thereby providing the same functionality in the same manner.

[0027] In an embodiment of the shrouded gate lock system according to the present invention the shroud is a retrofit shroud.

[0028] This embodiment is beneficial for upgrading an existing gate lock system, of which the gate lock is provided according to the present invention, to a shrouded gate lock system according the present invention to improve security.

[0029] The present invention further provides a barred gate comprising the shrouded gate lock system according to the present invention. The gate lock is connected within the barred gate against the outer bar of the barred gate, with the front face of the housing of the gate lock arranged against the outer bar of the barred gate, and with the at least one locking bolt passed through at least one corresponding locking bolt opening in the outer bar of the barred gate. The shroud is arranged with the first side of the back wall against one of the side faces of the gate lock, with the first protruding portion and the second protruding portion on said side face located respectively at the first opening and the second opening in a different

section of the upper section and the lower section of the back wall. The shroud is connected directly and/or indirectly with at least one of the outer bar of the barred gate and the gate lock.

[0030] The present invention further provides a method for installing the shrouded gate lock system according to the present invention on a barred gate. The method comprises the step of connecting the gate lock within the barred gate against the outer bar of the barred gate, with the front face of the housing of the gate lock arranged against the outer bar of the barred gate, and with the at least one locking bolt passed through at least one corresponding locking bolt opening in the outer bar of the barred gate. The method comprises the step of arranging the shroud with the first side of the back wall against one of the side faces of the gate lock, with the first protruding portion and the second protruding portion on said side face located respectively at the first opening and the second opening in a different section of the upper section and the lower section of the back wall. The method comprises the step of connecting the shroud directly and/or indirectly with at least one of the outer bar of the barred gate and the gate lock.

Brief description of the drawings

[0031] The invention will be further elucidated by means of the following description and the appended figures.

Figure 1 shows a perspective view at the inner side of a barred gate comprising a shrouded gate lock system according to an embodiment of the present invention.

Figure 2 shows a perspective view at the outer side of the barred gate.

Figure 3 shows a perspective view at the inner side of a different type of barred gate comprising a shrouded gate lock system according to an embodiment of the present invention.

Figure 4 shows an exploded view of the shrouded gate lock system without the protection plate.

Figure 5 shows an exploded view of the shrouded gate lock system without the protection plate and installed on the opposite side of the barred gate.

Figure 6 shows a perspective view of the shroud and the connection profile of the shrouded gate lock system, wherein the second side of the back wall of the shroud is visible.

Figure 7 shows a perspective view of the shroud and the connection profile of the shrouded gate lock system, wherein the first side of the back wall of the shroud is visible.

Figure 8 shows a perspective view of the shroud and the connection profile, as shown in Figure 6, provided with a push button instead of a handle such as shown in Figures 4 and 5.

Figure 9 shows a perspective view of the shroud and

the connection profile, as shown in Figure 6 but viewed from the opposite side, provided with a push button instead of a handle such as shown in Figures 4 and 5.

Figure 10 shows a perspective view of the shroud and the connection profile, as shown in Figure 6, wherein cover elements are provided suitable for adapting the shroud for use with a handle.

Figure 11 shows a perspective view of the shroud and the connection profile, as shown in Figure 6, wherein cover elements are provided suitable for adapting the shroud for use with a push button.

Figure 12 shows a perspective view of the shrouded gate lock system being provided with a small protection plate on an outer bar of the barred gate with a width of 40 mm.

Figure 13 shows a perspective view of the shrouded gate lock system being provided with a small protection plate on an outer bar of the barred gate with a width of 50 mm.

Figure 14 shows a top view of the shrouded gate lock system being provided with a small protection plate on an outer bar of the barred gate with a width of 40 mm.

Figure 15 shows a top view of the shrouded gate lock system being provided with a small protection plate on an outer bar of the barred gate with a width of 50 mm.

Figure 16 shows a top view of the shrouded gate lock system being provided with a small protection plate on an outer bar of the barred gate with a width of 60 mm.

Modes for carrying out the invention

[0032] The present invention will be described with respect to particular embodiments and with reference to certain drawings but the invention is not limited thereto but only by the claims. The drawings described are only schematic and are non-limiting. In the drawings, the size of some of the elements may be exaggerated and not drawn on scale for illustrative purposes. The dimensions and the relative dimensions do not necessarily correspond to actual reductions to practice of the invention.

[0033] Furthermore, the terms first, second, third and the like in the description and in the claims, are used for distinguishing between similar elements and not necessarily for describing a sequential or chronological order. The terms are interchangeable under appropriate circumstances and the embodiments of the invention can operate in other sequences than described or illustrated herein.

[0034] Moreover, the terms top, bottom, over, under and the like in the description and the claims are used for descriptive purposes and not necessarily for describing relative positions. The terms so used are interchangeable under appropriate circumstances and the embodiments of the invention described herein can operate in

other orientations than described or illustrated herein.

[0035] The term "comprising", used in the claims, should not be interpreted as being restricted to the means listed thereafter; it does not exclude other elements or steps. It needs to be interpreted as specifying the presence of the stated features, integers, steps or components as referred to, but does not preclude the presence or addition of one or more other features, integers, steps or components, or groups thereof. Thus, the scope of the expression "a device comprising means A and B" should not be limited to devices consisting only of components A and B. It means that with respect to the present invention, the only relevant components of the device are A and B.

[0036] Figures 1 and 2 shows, in a fence 900 (not fully shown) a barred gate 800 comprising a shrouded gate lock system 100 according to an embodiment of the present invention. The barred gate 800 comprises a surrounding frame 810 and a plurality of vertical bars 840 within the frame 810. The frame 810 is delimited along its width at one side by a proximal bar 830 with which the barred gate 800 is hingedly attached to the fence 900 and at the opposite side by an outer bar 820 on which the gate lock system 100 is arranged. Opposite of the outer bar 820 the fence is provided, at the level of the gate lock system 100, with a striking element 910 for the gate lock 200 of the gate lock system 100. Figure 1 shows the barred gate 800 from inner side, i.e. from within the space enclosed by the fence 900, and Figure 2 shows the barred gate 800 from an outer side, i.e. from outside the space enclosed by the fence 900.

[0037] Alternatively, the barred gate 800 may also be composed of two gate portions 801, 802, such as shown in Figure 3. In this configuration, the first gate portion 801 may be provided such as the barred gate 800 of Figures 1 and 2. The second gate portion 802 is hingedly attached with the proximal bar 830 of its frame 810 to the fence. At the outer bar 820 of its frame 810, the second gate portion 802 is provided with a striking element 803 for the gate lock 200 of the gate lock system 100 on the first gate portion 801. The second gate portion 802 can be anchored to the ground by any suitable releasable anchoring means (not shown), in which case only the first gate portion 801 is used for opening and closing the barred gate 800. If the anchoring means are released, the barred gate 800 can be fully opened and closed.

[0038] The shrouded gate lock system 100, shown in further details in Figures 4 and 5, comprises a gate lock 200, a shroud 300 for the gate lock 200 and a connection profile 500 which aids in connecting the gate lock 200 and the shroud 300 to each other and to the outer bar 820 of the barred gate 800.

[0039] The gate lock 200 comprises a housing 210 having a front face 220 and two symmetrically arranged opposing side faces 230. At the front face 220, the housing 210 of the gate lock 200 is provided for connecting to the outer bar 820 of the barred gate 800.

[0040] In an upper section 211 of the housing 211, the

gate lock 200 is provided with a first locking bolt 261, which is arranged through the front face 220 of the housing 210. The first locking bolt 261 is moveable between a projected position and a retracted position, for respectively locking and unlocking the barred gate 800 in the closed position with the first locking bolt 261 received on the striking element 803, 910. The gate lock 200 is preferably arranged such that the first locking bolt 261 is biased in the projected position. The gate lock 200 is arranged such that the movement of the first locking bolt 261 is operable by means of a first handling means 270, 272, 274, such as a handle 270, as shown in Figures 4 and 5, or a push button 272, as shown in Figures 8 and 9, thereby not excluding any other suitable comparable handling means known to the skilled person. The handle 270 or the push button 272 only has to be provided at the side face 230 of the housing 210 of the gate lock 200 located at the inner side of the barred gate 800, such that a person within the space enclosed by the fence 900 can easily open and close the barred gate 800 by means of the handle 270 or the push button 272.

[0041] Also in the upper section 211 of the housing 210, the gate lock 200 is provided on each of the opposing side faces 230 with a first protruding portion 240. These first protruding portions 240 have the shape of a cylinder, but may have any other suitable shape. Each of these first protruding portions 240 has a first receiving opening 242, which extend through the housing 210 from one first protruding portion 240 to the other first protruding portion 240. The first receiving openings 242 are provided for receiving a spindle 274 for the handle 270 or the push button 272 of the first handling means 270, 272, 274. Since the handle 270 or the push button 272 only has to be provided at the inner side of the barred gate 800, the spindle 274 is provided at one end with an abutment 275 that seals off the first receiving opening 242 located at the outer side of the barred gate 800, such that a person outside of the space enclosed by the fence 900 cannot make use of said first receiving opening 242 for unlocking a closed barred gate by means of their own handle or push button with a spindle. At the opposite end, the spindle 274 is provided for connecting the handle 270 or the push button 272 thereto.

[0042] In a lower section 212 of the housing 210, the gate lock 200 is provided with a second locking bolt 262, which is arranged through the front face 220 of the housing 210. The second locking bolt 262 is moveable between a projected position and a retracted position, for respectively locking and unlocking the barred gate 800 in the closed position with the second locking bolt 262 received on the striking element 803, 910. The gate lock 200 is arranged such that the movement of the second locking bolt 262 is operable by means of a second handling means, such as a key (not shown), thereby not excluding any other suitable comparable handling means known to the skilled person. The gate lock 200 is also arranged such that the second locking bolt 262 can be blocked in the projected position, such that the barred

gate 800 can no longer be opened by means of the first handling means 270, 272, 274, unless the second locking bolt 262 is unblocked again and moved to the retracted position by means of the second handling means. In alternative embodiments, the gate lock 200 may also be provided with a single locking bolt, i.e. the first locking bolt 261, in which case the second handling means would also be used for operating the first locking bolt 261, in the same manner as described above with respect to the second locking bolt 262, and this in addition to the first handling means 270, 272, 274.

[0043] Also in the lower section 212 of the housing 210, the gate lock 200 is provided on each of the opposing side faces 230 with a second protruding portion 250. These second protruding portions 250 have the shape of an elliptic cylinder, but may have any other suitable shape. Each of these second protruding portions 250 comprises an opposite end of a key cylinder, and have thus a second receiving opening 252, i.e. a key opening 252, for receiving the key or any other suitable second handling means. The second receiving openings 252 are provided on both side faces 230 of the housing 210 of the gate lock 200 and are kept open, such that persons on both the inner and outer side of the barred gate 800 can open the barred gate 800 when they have the key.

[0044] With respect to the placement of the first locking bolt 261, the second locking bolt 262, the first protruding portions 240 and the second protruding portions 250 it should be noted that in alternative embodiments the first locking bolt 261 and the first protruding portions 240 can also be placed in the lower section 212 of the housing 210 of the gate lock 200 and the second locking bolt 262 and the second protruding portions 250 in the upper section 211 of the housing 210 of the gate lock 200. It should also be noted that the first locking bolt 261 does not necessarily have to be located in the same section of the housing 210 as the first protruding portions 240, and the same for the second locking bolt 262 and the second protruding portions 250, but this is however convenient for the design of the gate lock 200.

[0045] The U-shaped connection profile 500, as can be seen in Figures 4 and 5, and in more detail in Figures 6-11, comprises a front wall 510 and two side walls 520. The front wall 510 is provided for being connected to the outer bar 820 of the barred gate 800 and to the gate lock 200. Thereby, as illustrated in the Figures 4 and 5, the connection profile 500 is arranged with the front wall 510 against the outer bar 820 of the barred gate 800, and the side walls 520 extending away from the outer bar 820 such that the gate lock 200 can be received between the side walls 520 with the front face 220 of the housing 210 of the gate lock 200 facing towards the front wall 510 of the connection profile 500 and the outer bar 820 of the barred gate 800. The outer bar 820 of the barred gate 800, the connection profile 500 and the gate lock 200 can then be connected to each other by means of suitable connection means 222, such as bolts 222, extending through corresponding connection openings 822, 512,

221 through the outer bar 820 of the barred gate 800, the front wall 510 of the connection profile 500 and the front face 220 of the housing 210 of the gate lock 200. Thereby, the first locking bolt 261 and the second locking bolt 262 of the gate lock 200 extend through corresponding locking bolt openings 511, 821 through the front wall 510 of the connection profile 500 and through the outer bar 820 of the barred gate 800.

[0046] The shroud 300, as can be seen in Figures 4 and 5, and in more detail in Figures 6-11, comprises a back wall 310. The back wall 310 has a first side 313, with which the shroud 300 is to be arranged against any one of the side faces 230 of the housing 210 of the gate lock 200. The back wall 310 also has a second side 314 opposite of the first side 313. The shroud 300 further comprises an upstanding shroud wall 380 arranged on the second side 314 of the back wall 310. The shroud wall 380 is arranged for obstructing sideways access to the second side 314 of the back wall 310.

[0047] In both an upper section 311 and a lower section 312 of the back wall 310 there is provided both a first opening 320 and a second opening 330 through the back wall 310. The first openings 320 are configured for receiving the first protruding portion 240 on the side face 230 of the housing 210 of the gate lock 200 against which the shroud 300 is arranged, this to provide access to the first receiving opening 242 of the first protruding portion 240 at the second side 314 of the back wall 310 of the shroud 300. To fit nicely over the first protruding portion 240, each first opening 320 is provided at least along a part of its circumference with an inner wall 321 having a shape complementary to the shape of the outer wall 241 of the first protruding portion 240. The second openings 330 are configured for receiving the second protruding portion 250 on the side face 230 of the housing 210 of the gate lock 200 against which the shroud 300 is arranged, this to provide access to the second receiving opening 252 of the second protruding portion 250 at the second side 314 of the back wall 310 of the shroud 300. To fit nicely over the second protruding portion 250, each second opening 330 is provided at least along a part of its circumference with an inner wall 331 having a shape complementary to the shape of the outer wall 251 of the second protruding portion 250. The first openings 320 are arranged symmetrically with respect to each other on the back wall 310 of the shroud 300, and the second openings 330 are also arranged symmetrically with respect to each other on the back wall 310 of the shroud 300. In this embodiment, as for example can be seen in Figure 7, the first opening 320 and the second opening 330 in the same section of the back wall 310 are overlapping, which is beneficial for a compact design of the gate lock 200 and the shroud 300. In alternative embodiments, the first opening 320 and the second opening 330 in the same section of the back wall 310 can also be distinct from each other.

[0048] Providing the first openings 320 and the second openings 330 in both the upper section 311 and the lower

section 312 of the back wall 30 makes it possible to use the same shroud 300 on both side faces 230 of the housing 210 of the gate lock 200. When the shroud 300 is arranged against a first side face 230 of the housing 210 of the gate lock 200, such as shown in Figure 4, the first protruding portion 240 on said first side face 230 is received in the first opening 320 through the upper section 311 of the back wall 310 of the shroud 300 and the second protruding portion 250 on said first side face 230 is received in the second opening 330 through the lower section 312 of the back wall 310 of the shroud 300. When the shroud 300 is flipped upside down and arranged against the second side face 230 of the housing 210 of the gate lock 200, such as shown in Figure 5, the first protruding portion 240 on said second side face 230 is received in the first opening 320 through the previous, i. e. before having been flipped upside down, lower section 312 of the back wall 310 of the shroud 300 and the second protruding portion 250 on said second side face 230 is received in the second opening 330 through the previous upper section 311 of the back wall 310 of the shroud 300.

[0049] When a first protruding portion 240 on a side face 230 of the housing 210 of the gate lock 200 is received in a first opening 320 through the back wall 310 of the shroud 300, the first receiving opening 242 of said first protruding portion 240 is exposed to the second side 314 of the back wall 310 where the first handling means 270, 272, 274, such as a handle 270 or a push button 272, can be connected or coupled to a spindle 270 inserted through the first receiving opening 242. With the first handling means 270, 272, 274 being arranged on the second side 314 of the back wall 310 and the shroud wall 380 being arranged for obstructing sideways access to the second side 314 of the back wall 310, the shroud wall 380 of the shroud 300 thus obstructs access to the first handling means 270, 272, 274 for a person reaching through the vertical bars 840 of the barred gate 800 from the opposite side of the barred gate 800. When a second protruding portion 250 on a side face 230 of the housing 210 of the gate lock 200 is received in a second opening 330 through the back wall 310 of the shroud 300, the second receiving opening 252 of said second protruding portion 250 is exposed to the second side 314 of the back wall 310 where the second handling means, such as a key, can be inserted in the second receiving opening 252.

[0050] In this embodiment no shroud wall 380 is provided on the second side 314 of the back wall 310 at the side of the shroud 300 facing towards the fence 900, such as shown in Figures 1 and 2, or the second gate portion 802 of the barred gate 800, such as shown in Figure 3, i. e. the shroud wall 380 only runs partially along the circumference of the back wall 310. This makes it easier for a person at the side of the barred gate 800 where the shroud 300 is located to reach and operate the first handling means 270, 272, 274, but also makes it easier for a person at the opposite side of the barred gate 800 to reach to the first handling means 270, 272, 274 from that side of the shroud 300. This is less of a problem if the

fence 900 itself does not have openings through which a person can reach to get access to the first handling means 270, 272, 274 at the side of the shroud 300 not provided with the shroud wall 380 which faces the fence 900. If the fence 900 is however a barred fence or in case of a second gate portion 802 such as in Figure 3, a person can reach to the first handling means 270, 272, 274 through the openings between the bars of the fence 900 or the second gate portion 802. This can however be prevented by attaching a further protection plate 499 to the fence 900 or the second gate portion 802, such as shown in Figure 3 for the second gate portion 802. In alternative embodiments the shroud wall 380 can however also be provided along the entire circumference of the back wall 310 of the shroud 300.

[0051] The shroud 300 is connected to the connection profile 500, and thus via the connection profile 500 with the outer bar 820 of the barred gate 800 and the gate lock 200. Therefore, the side walls 520 of the connection profile 500 and the back wall 310 of the shroud 300 are provided with corresponding connection openings 522, 362, through which suitable connection means 363, such as bolts, can be arranged for connecting the shroud 300 to the connection profile 500. As can be seen in Figure 7, the connection means 363 for connecting the shroud 300 to the connection profile 500 are preferably inserted first through the connection openings 522 in one of the side walls 520 from in between the side walls 520 and then in the connection openings 362 at the first side 313 of the back wall 310 of the shroud 300. In this way said connection means 363 cannot be accessed when the gate lock 200 is received between the side walls 520 of the connection profile 500, such that the shroud 300 cannot easily be disconnected from the connection profile 500.

[0052] As already explained above, the first handling means 270, 272, 274, such as a handle 270 or a push button 272, are connected or coupled to a spindle 274 inserted through the first receiving openings 242 of the first protruding portions 240 on the side faces 230 of the housing 210 the gate lock 200. In case the first handling means 270, 274 is a handle 270, the handle 270 is connected directly to the spindle 274, such as can be seen in Figures 4 and 5. In this way a rotating motion of the handle 270 directly rotates the spindle 274 within the first receiving opening 242 for operating the movement of the first locking bolt 261 of the gate lock 200. In case the first handling means 272, 274 is a push button 272, the push button 272 itself is connected to the back wall 310 of the shroud 300 and to a side wall 520 of the connection profile 500 by means of suitable connection means 273, such as bolts, extending through corresponding connection openings 524, 364 through the side walls 520 of the connection profile 500 and through the back wall 310 of the shroud 300, as can be seen in the Figures 8 and 9. Through the back wall 310 of the shroud 300 two sets of such connection openings 364 are provided, a first set for use when the shroud 300 is arranged against one

side face 230 of the housing 210 of the gate lock 200, and a second set for use when the shroud 300 is arranged in the upside down orientation against the opposite side face 230 of the housing 210 of the gate lock 200. When connected as such to the shroud 300 and the connection profile 500, the push button 272 is coupled to a spindle 274 inserted through the first receiving openings 242 of the first protruding portions 240 on the side faces 230 of the housing 210 of the gate lock 200 in such a way that a pushing motion on the push button 272 causes the rotation of the spindle 274 within the first receiving opening 242 for operating movement of the first locking bolt 261 of the gate lock 200.

[0053] As can be seen in the Figures 10 and 11, the back wall 310 of the shroud 300 is provided at the second side 314 with a first recessed area 340 and a second recessed area 360. The first openings 320 and the second openings 330 through the back wall 310 of the shroud 300 extend through the back wall 310 in the first recessed area 340. The connection openings 362 for connecting the shroud 300 to the connection profile 500 and the connection openings 364 for connecting a push button 272 as the first handling means 272, 274 to the shroud 300 and to the connection profile 500 are located in the second recessed area 360. Cover elements 350, 370, 371, 372 are provided for covering the unused section of the recessed areas 340, 360, in order to give the second side 314 of the back wall 310 of the shroud 300 a nice finish. For connecting the cover elements 350, 370, 371, 372 to the back wall 310 of the shroud 300, the recessed areas 340, 360 are provided with snap-fit openings 346, 366 for forming snap-fit connections between the cover elements 350, 370, 371, 372 and the back wall 310 of the shroud 300 in the recessed areas 340, 360. In the first recessed area 340 the snap-fit openings 346 are dedicated to said purpose, whereas in the second recessed area 360 some of the snap-fit openings 366 serve a double purpose, and can, depending on the situation, be used as snap-fit openings 366 or as the connection openings 364 for connecting the push button 272 to the back wall 310 of the shroud 300 and to the connection profile 500. The first recessed area 340 is covered by a single cover element 350, in which two openings 351, 352 are provided such that both the first receiving opening 242 and the second receiving opening 252 of the gate lock 200 exposed through the first opening 320 and the second opening 330 in the first recessed area 340 remain accessible for receiving the first handling means 370, 372, 374 and the second handling means. In case a handle 370 is used as the first handling means 370, 374, the second recessed area 360 is also covered by a single cover element 370, such as can be seen in Figure 10. In case a push button 372 is used as the first handling means 372, 374, the sections of the second recessed area 360 not occupied by the push button 372 are covered by two cover elements 371, 372, such as can be seen in Figure 11.

[0054] To further obstruct access to the first handling

means 370, 372, 374 at the second side 314 of the back wall 310 of the shroud 300 for a person reaching through the vertical bars 840 of the barred gate 800 from the side of the barred gate 800 opposite of the side where the shroud 300 is located, the shrouded gate lock system 100 further comprises a protection plate 400 which is arranged against the barred gate 800 and surrounds the shroud 300. Therefore, the protection plate 400 is provided with a shroud opening 401 with a shape corresponding to the shape of the shroud wall 380 of the shroud 300, such that when the protection plate 400 is arranged over the shroud 300 the shroud wall 380 protrudes through the shroud opening 401. The protection plate 400 prevents a person at the opposite side of the barred gate 800 from reaching through the barred gate 800 in the perimeter around the shroud 300 that is covered by the protection plate 400. The Figures 1 and 3 show a large version of such a protection plate 400, and the Figures 12 and 13 show a small version of such a protection plate 400, but the protection plate 400 can be provided in any suitable size or shape.

[0055] In case of an outer bar 820 having a width of 40 mm, as shown in Figures 12 and 14, the protection plate 400, when arranged over the shroud 300, is supported against the outer bar 820 of the barred gate 800 by means of an intermediate support 410, and against a flange 390 of the shroud 300. The flange 390 of the shroud 300 surrounds the back wall 310 of the shroud 300 and is planar with the back wall 310 of the shroud 300. The intermediate support 410 has approximately the same thickness as the flange 390 of the shroud 300, this because, when the shroud 300 is connected to the connection profile 500 on the outer bar 820 of the barred gate 800, the flange 390 of the shroud 300 is positioned right in front of the outer bar 820. Hence, to have a support for the protection plate 400 in the same plane, the intermediate support 410 is given approximately the same thickness as the flange 390 of the shroud 300.

[0056] In case of an outer bar 820 having a larger width of 50 mm, as shown in Figures 13 and 15, the outer bar 820 extends beyond the flange 390 of the shroud 300 when the same connection profile 500 and shroud 300 are used. In this case the protection plate 400 can thus no longer be supported directly against the flange 390 of the shroud 300. To be able to still support the protection plate 400 against the flange 390 of the shroud 300, a spacer 420 is arranged between the protection plate 400 and the flange 390 of the shroud 300, which fills up the gap between the protection plate 400 and the flange 390 of the shroud 300. To aid in correctly positioning the spacer 420 on the flange 390 of the shroud 300, the spacer 420 is provided with positioning pins 422 that can be received in corresponding positioning openings 393 provided through the flange 390.

[0057] In case of outer bars 820 having even a larger width, for example of 60 mm as shown in Figure 16, further spacers 420 can be arranged between the protection plate 400 and the flange 390 of the shroud 300, such that

the protection plate 400 can be supported against the flange 390 of the shroud 300. To aid in correctly positioning the further spacers 420 onto each other, the spacers 420 are provided on opposing sides with corresponding positioning pins 422 and positioning openings 423, whereby the positioning pins 422 of the further spacer 420 are received in the corresponding positioning openings 423 of the previous spacer 420.

[0058] The protection plate 400 is connected to the outer bar 820 of the barred gate 800 by means of suitable connection means 403, such as for example the connection means described in EP 3 575 617 A1, extending through corresponding connection openings 402, 411, 823 in the protection plate 400, the intermediate support 410 and the outer bar 820 of the barred gate 800. As can be seen in Figure 2, the protection plate 400 can also be connected to one or more of the vertical bars 840 of the barred gate 800 by means of suitable connections means 430. The protection plate 400 is connected to the flange 390 of the shroud 300 by means of suitable connection means 405, such as for example bolts, extending through corresponding connection openings 404, 421, 392 in the protection plate 400, any used spacer 420 and the flange 390 of the shroud 300. The connection openings 392 in the flange 390 of the shroud 300 are provided in thickened portions 391 of the flange 390, such that a strong connection can be formed between the protection plate 400 and the flange 390 of the shroud 300 by means of the connection means 405.

Claims

1. A shrouded gate lock system (100) for a barred gate (800), the system (100) comprising:

a gate lock (200), the gate lock (200) comprising:

a housing (210), the housing (210) having a front face (220), and two opposing side faces (230), the housing (210) having a first section and a second section, different from the first section, selected from an upper section (211) and a lower section (212) of the housing (210);

at least one locking bolt (261, 262) arranged through the front face (220) of the housing (210), wherein the at least one locking bolt (261, 262) is moveable between a projected position and a retracted position, wherein the gate lock (200) is arranged such that the movement of a first locking bolt (261) of the at least one locking bolt (261, 262) is operable by means of a first handling means (270, 272, 274), and such that the movement of the first locking bolt (261) or a second locking bolt (262) of the at least one locking bolt (261, 262) is operable and

blockable in the projected position by means of a second handling means;
a first protruding portion (240) on each of the side faces (230) of the housing (210) at the first section, each first protruding portion (240) having a first receiving opening (242) for receiving the first handling means (270, 272, 274);

a second protruding portion (250) on each of the side faces (230) of the housing (210) at the second section, each second protruding portion (250) having a second receiving opening (252) for receiving the second handling means;

a shroud (300), the shroud (300) comprising:

a back wall (310), the back wall (310) having a first side (313) with which the shroud (300) is to be arranged against the side faces (230) of the housing (210) of the gate lock (200), and a second side (314) opposite of the first side (313);

a first opening (320) through each of an upper section (311) and a lower section (312) of the back wall (310), wherein one first opening (320) is configured for providing access to the first receiving opening (242) of the first protruding portion (240) of the gate lock (200) at the second side (314) of the back wall (310) of the shroud (300) when the shroud (300) is arranged against one side face (230) of the gate lock (200), and wherein the other first opening (320) is configured for providing access to the first receiving opening (242) of the first protruding portion (240) of the gate lock (200) at the second side (314) of the back wall (310) of the shroud (300) when the shroud (300) is arranged upside down against the other side face (230) of the gate lock (200);

a second opening (330) through each of the upper section (311) and the lower section (312) of the back wall (310), wherein one second opening (330) is configured for providing access to the second receiving opening (252) of the second protruding portion (250) of the gate lock (200) at the second side (314) of the back wall (310) of the shroud (300) when the shroud (300) is arranged against one side face (230) of the gate lock (200), and wherein the other second opening (330) is configured for providing access to the second receiving opening (252) of the second protruding portion (250) of the gate lock (200) at the second side (314) of the back wall (310) of the shroud (300) when the shroud (300) is arranged up-

side down against the other side face (230) of the gate lock (200);

a shroud wall (380) arranged on the second side (314) of the back wall (310), wherein the shroud (300) is arranged for obstructing access to the second side (314) of the back wall (310).

2. The system (100) of claim 1, wherein each first opening (320) of the shroud (300) is configured for receiving the corresponding first protruding portion (240) of the gate lock (200) by means of an inner wall (321) at least along a part of its circumference having a shape complementary to the shape of the outer wall (241) of the first protruding portion (240), and/or wherein each second opening (330) of the shroud (300) is configured for receiving the corresponding second protruding portion (250) of the gate lock (200) by means of an inner wall (331) at least along a part of its circumference having a shape complementary to the shape of the outer wall (251) of the second protruding portion (250).
3. The system (100) of claim 1 or 2, wherein the first opening (320) and the second opening (330) in the same section of the upper section (311) and the lower section (312) of the back wall (310) of the shroud (300) partially overlap.
4. The system (100) of any one of the claims 1-3, wherein the shroud wall (380) runs at least partially along the circumference of the back wall (310).
5. The system (100) of any one of the claims 1-4, wherein the system (100) further comprises a protection plate (400) for further obstructing access to the second side (314) of the back wall (310), the protection plate (400) having a shroud opening (401) with a shape corresponding to the shape of the shroud wall (380), such that the protection plate (400) can be arranged over the shroud (300) with the shroud wall (380) protruding through the shroud opening (401), and wherein the system (100) further comprises connection means (403, 405, 430) for connecting the protection plate (400) to at least one of the barred gate (800) and the shroud (300).
6. The system (100) according to claim 5, wherein the shroud (300) comprises a flange (390) around the back wall (310).
7. The system (100) according to claim 6, wherein the system (100) further comprises at least one spacer (420) for being arranged between the flange (390) and the protection plate (400).
8. The system (100) according to any one of the claims 1-7, wherein the system (100) further comprises a

connection profile (500) provided for connecting the shroud (300) to the outer bar (820) of the barred gate (800), wherein the connection profile (500) comprises a front wall (510) provided for being connected to the outer bar (820) of the barred gate (800), the connection profile (500) further comprises two side walls (520) between which the gate lock (200) is received when the gate lock (200) is connected to the outer bar (820) of the barred gate (800), and wherein the side walls (520) are both provided for being connected to the shroud (300).

9. The system (100) according to claim 8, wherein the side walls (520) of the connection profile (500) and the back wall (310) of the shroud are provided with corresponding connection openings (522, 362) for connecting the shroud (300) to the connection profile (500).

10. The system (100) according to any one of the claims 1-9, wherein the back wall (310) is provided with connection openings (364) for connecting a pushable means (272) as the first handling means (272, 274) to the back wall (310) at the second side (314).

11. The system (100) according to any one of the claims 1-10, wherein the back wall (310) is provided at the second side (314) with at least one recessed area (340, 360) in which openings (320, 330, 362, 364) in the back wall (310) are located, and wherein the shroud (300) further comprises at least one cover element (350, 370, 371, 372) for being arranged in the at least one recessed area (340, 360) for at least partially covering the openings (320, 330, 362, 364) located in the at least one recessed area (340, 360).

12. The system (100) according to any one of the claims 1-11, wherein the shroud (300) is arranged symmetrically.

13. The system (100) according to any one of the claims 1-12, wherein the shroud (300) is a retrofit shroud (300).

14. A barred gate (800) comprising the shrouded gate lock system (100) according to any one of the claims 1-13, wherein the gate lock (200) is connected within the barred gate (800) against the outer bar (820) of the barred gate (800), with the front face (220) of the housing (210) of the gate lock (200) arranged against the outer bar (820) of the barred gate (800), and with the at least one locking bolt (261, 262) passed through at least one corresponding locking bolt opening (821) in the outer bar (820) of the barred gate (800), wherein the shroud (300) is arranged with the first side (313) of the back wall (310) against one of the side faces (230) of the gate lock (200), with the first protruding portion (240) and the second pro-

truding portion (250) on said side face (230) located respectively at the first opening (320) and the second opening (330) in a different section of the upper section (311) and the lower section (312) of the back wall (310), and wherein the shroud (300) is connected directly and/or indirectly with at least one of the outer bar (820) of the barred gate (800) and the gate lock (200).

15. A method for installing the shrouded gate lock system (100) according to any one of the claims 1-13 on a barred gate (800), the method comprising the steps of:

connecting the gate lock (200) within the barred gate (800) against the outer bar (820) of the barred gate (800), with the front face (220) of the housing (210) of the gate lock (200) arranged against the outer bar (820) of the barred gate (800), and with the at least one locking bolt (261, 262) passed through at least one corresponding locking bolt opening (821) in the outer bar (820) of the barred gate (800);

arranging the shroud (300) with the first side (313) of the back wall (310) against one of the side faces (230) of the gate lock (200), with the first protruding portion (240) and the second protruding portion (250) on said side face (230) located respectively at the first opening (320) and the second opening (330) in a different section of the upper section (311) and the lower section (312) of the back wall (310); and

connecting the shroud (300) directly and/or indirectly with at least one of the outer bar (820) of the barred gate (800) and the gate lock (200).

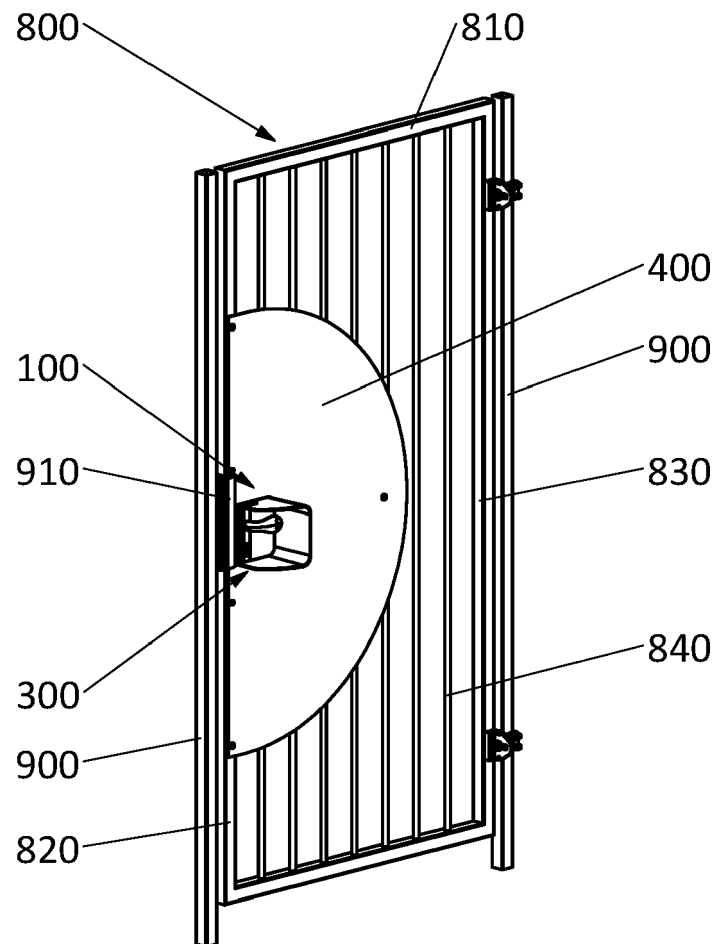


FIG. 1

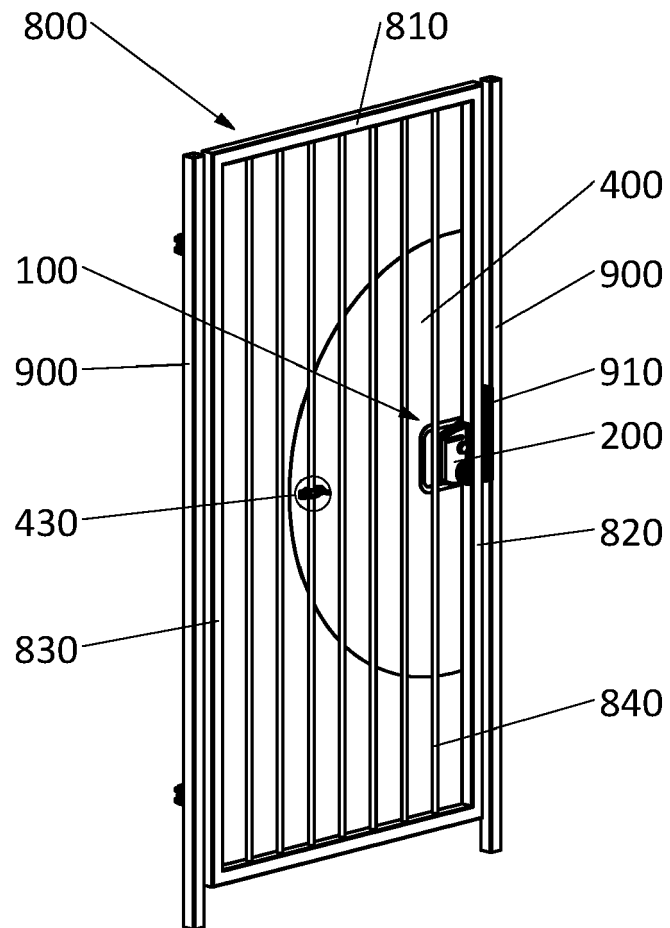


FIG. 2

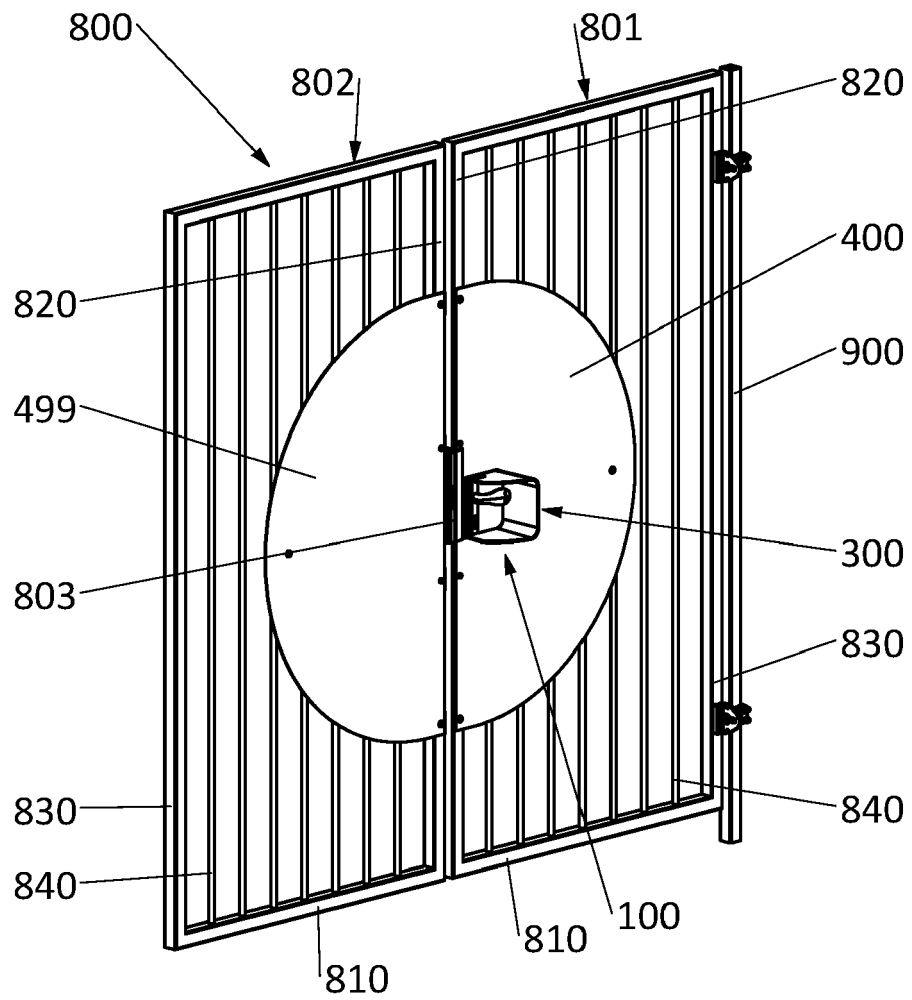


FIG. 3

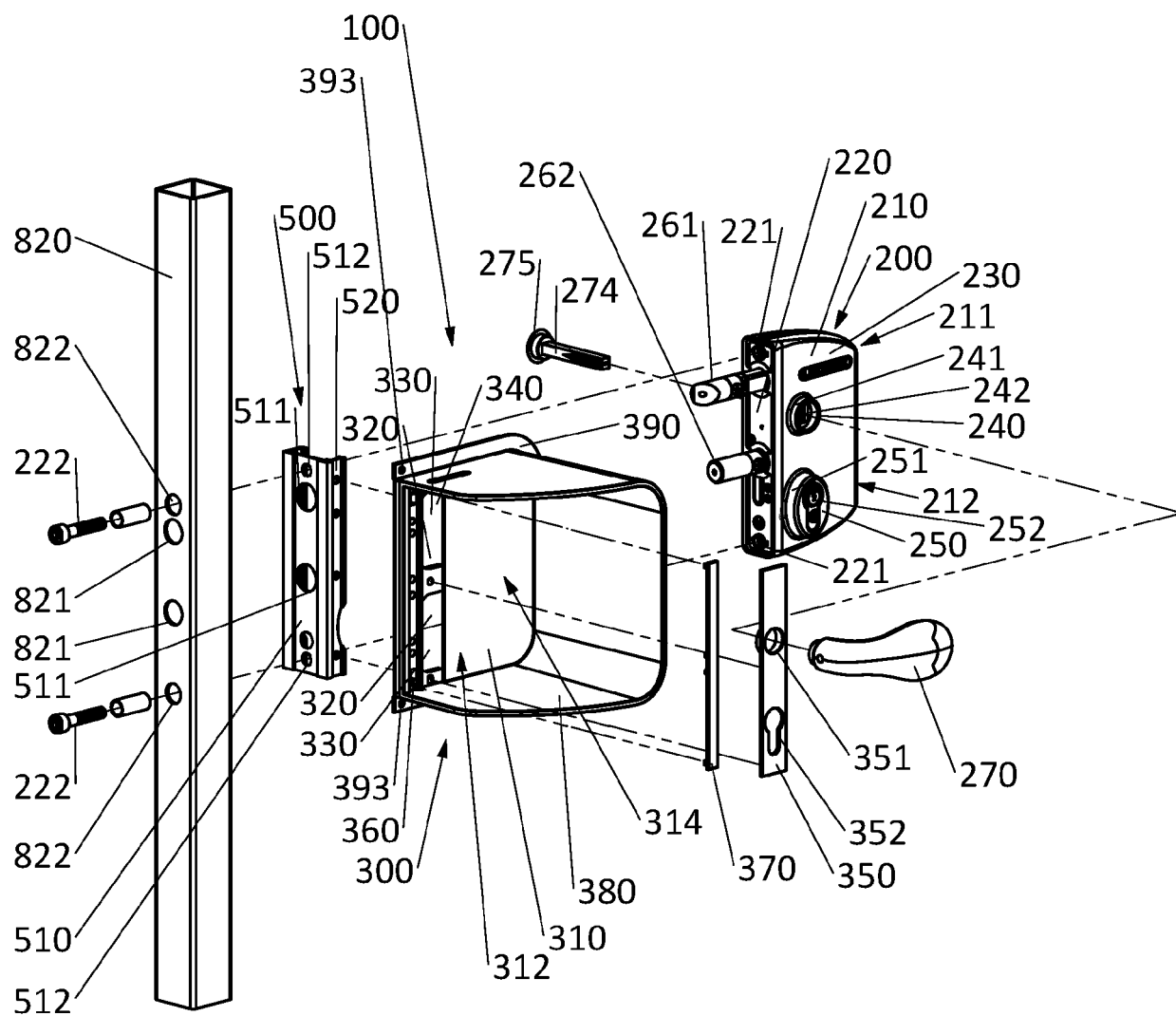


FIG. 4

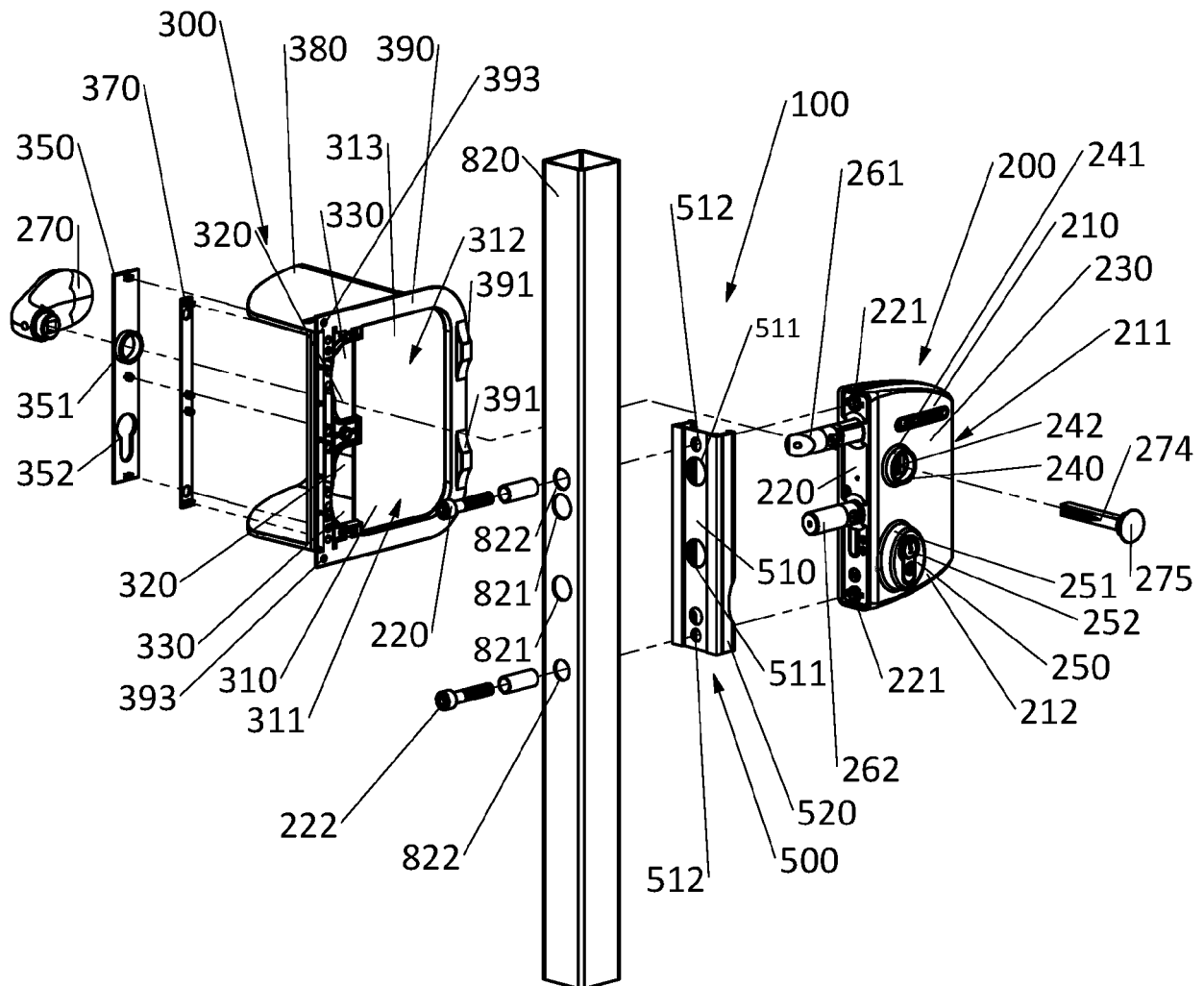


FIG. 5

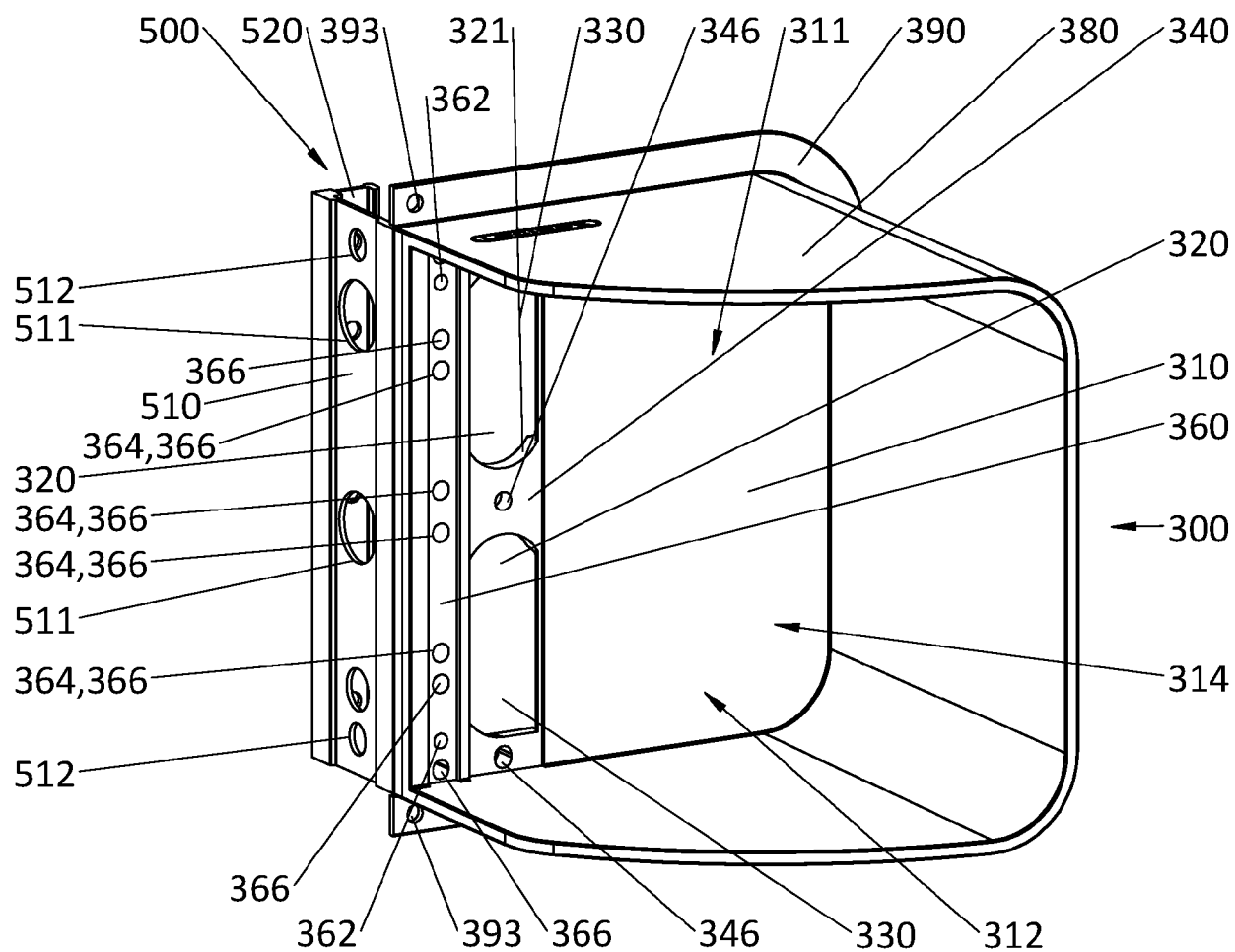


FIG. 6

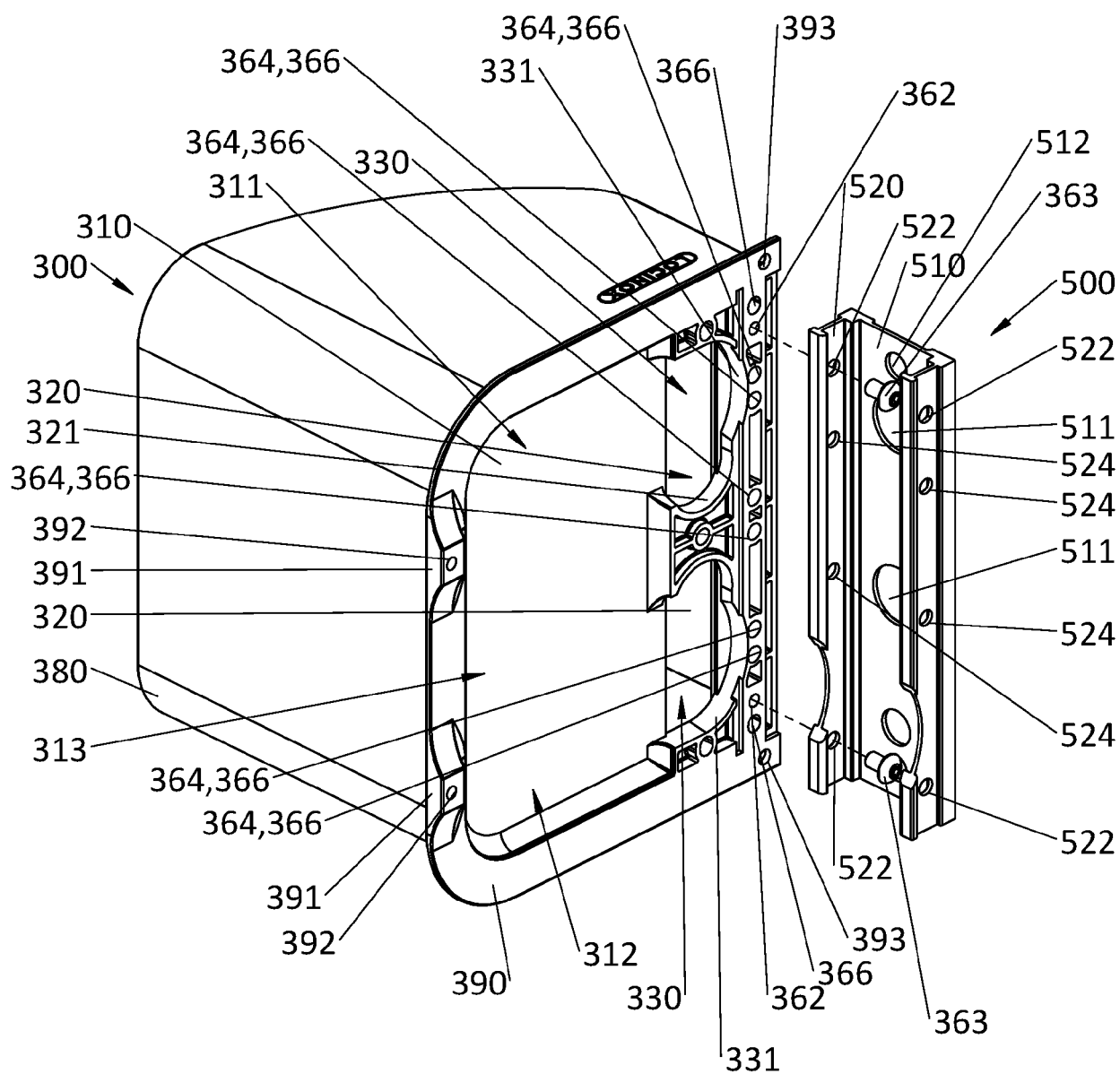


FIG. 7

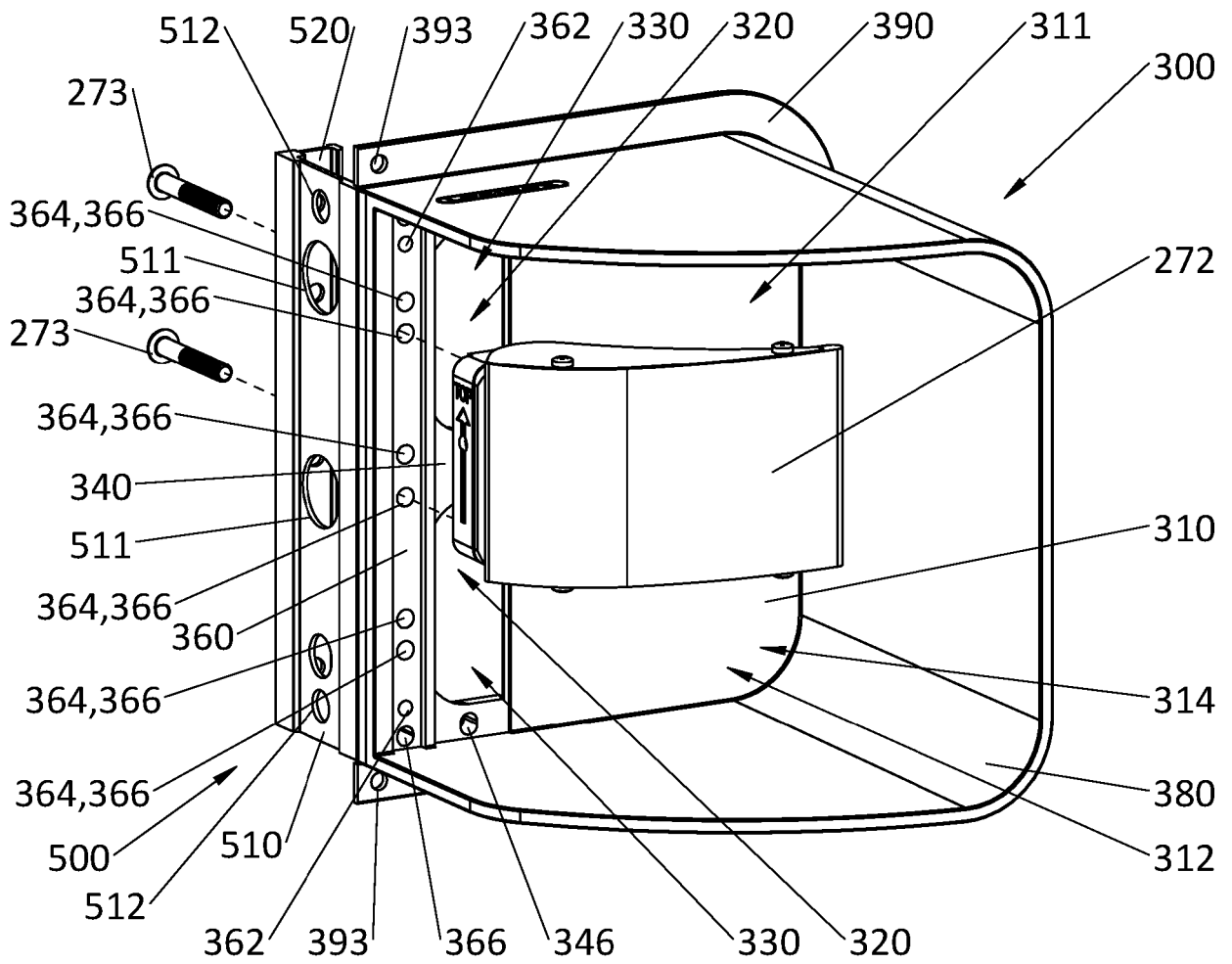


FIG. 8

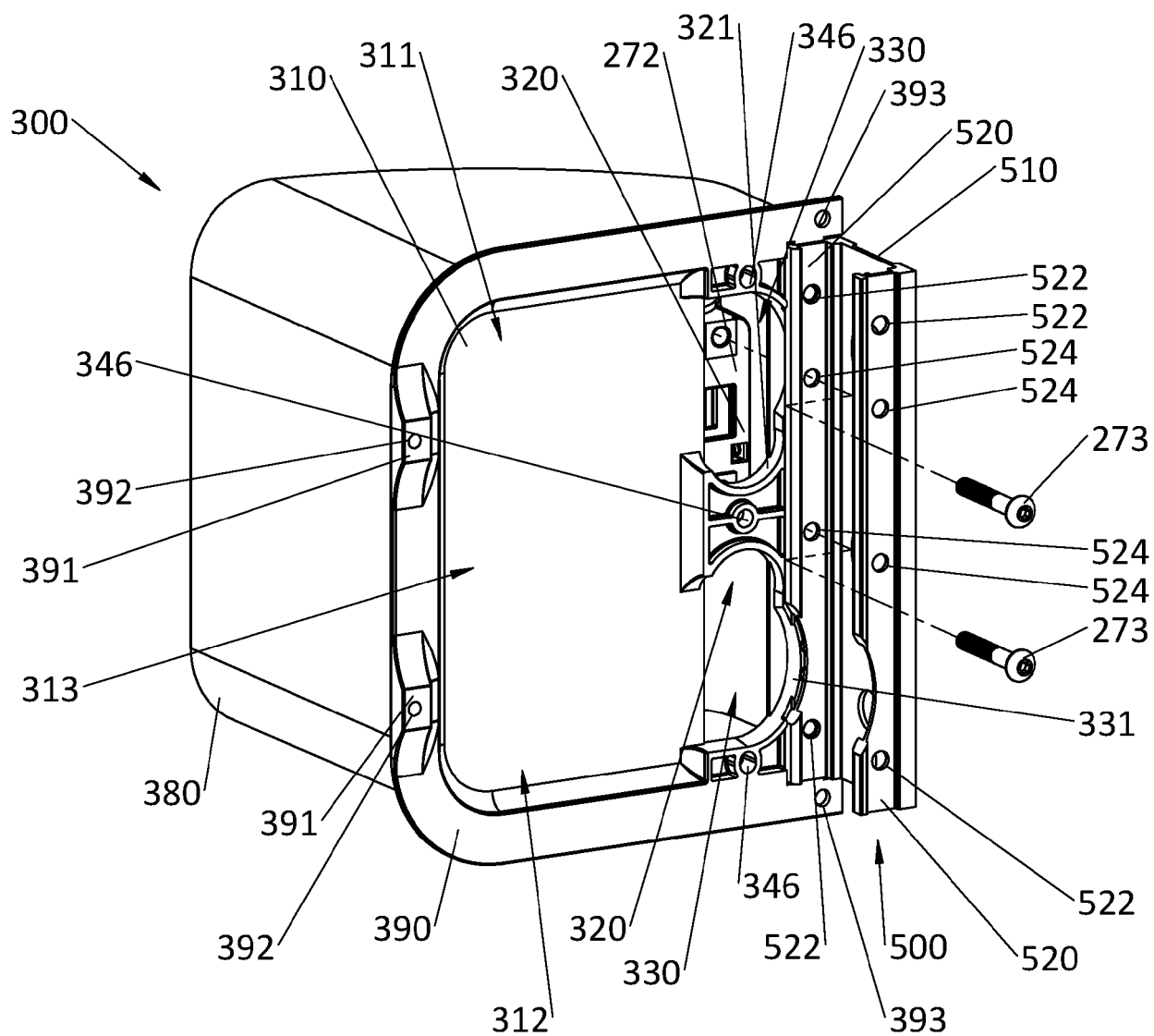


FIG. 9

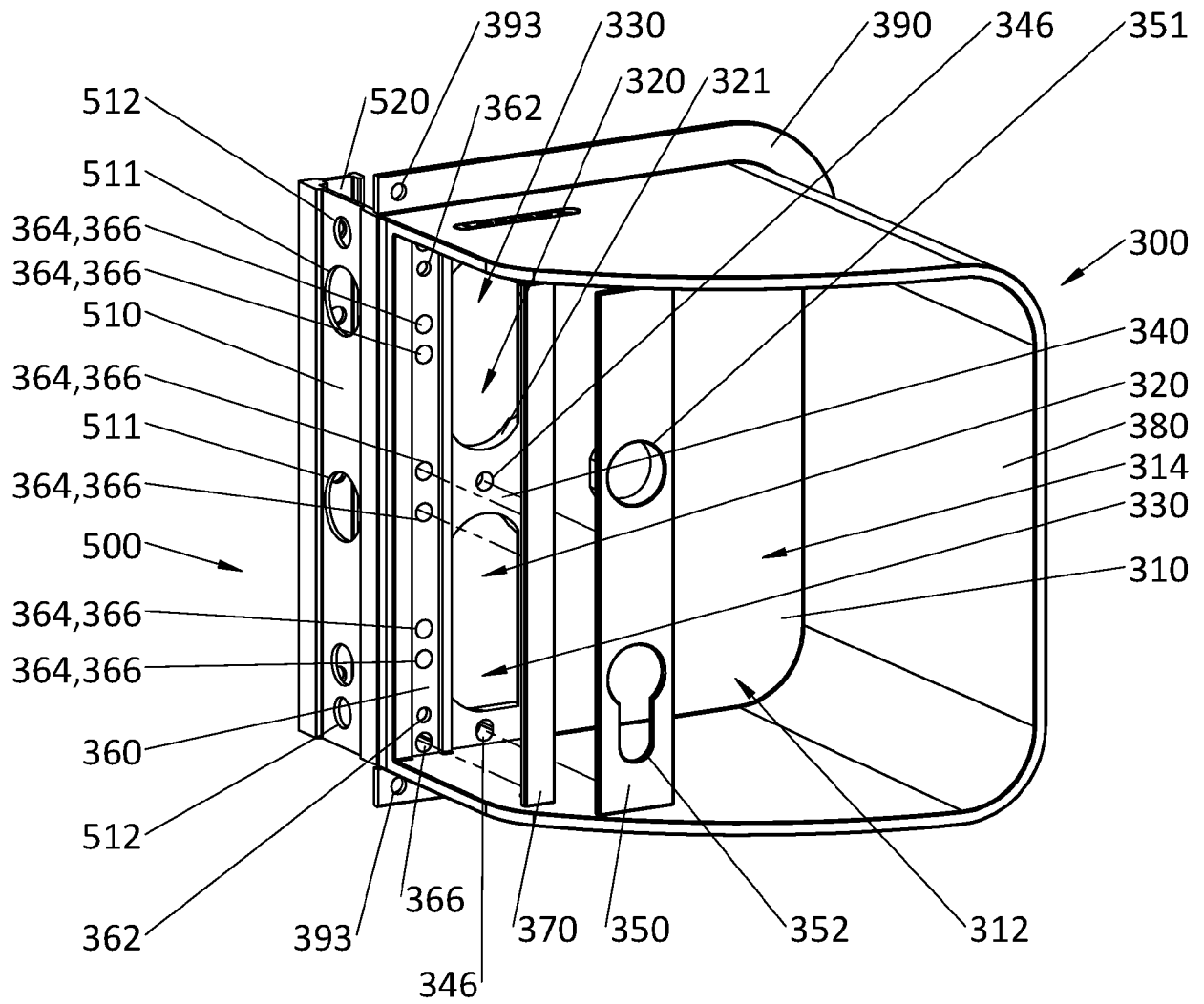


FIG. 10

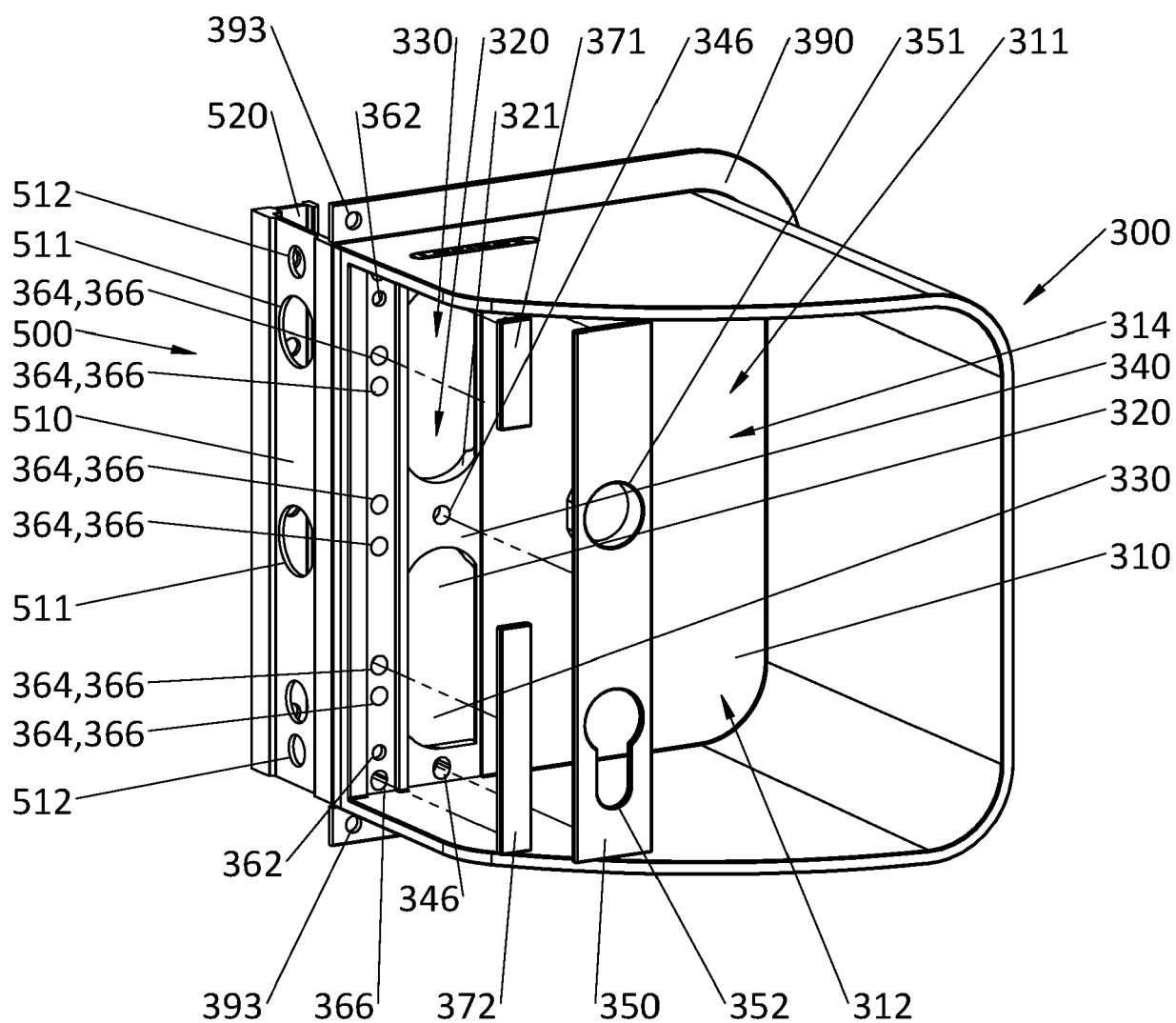


FIG. 11

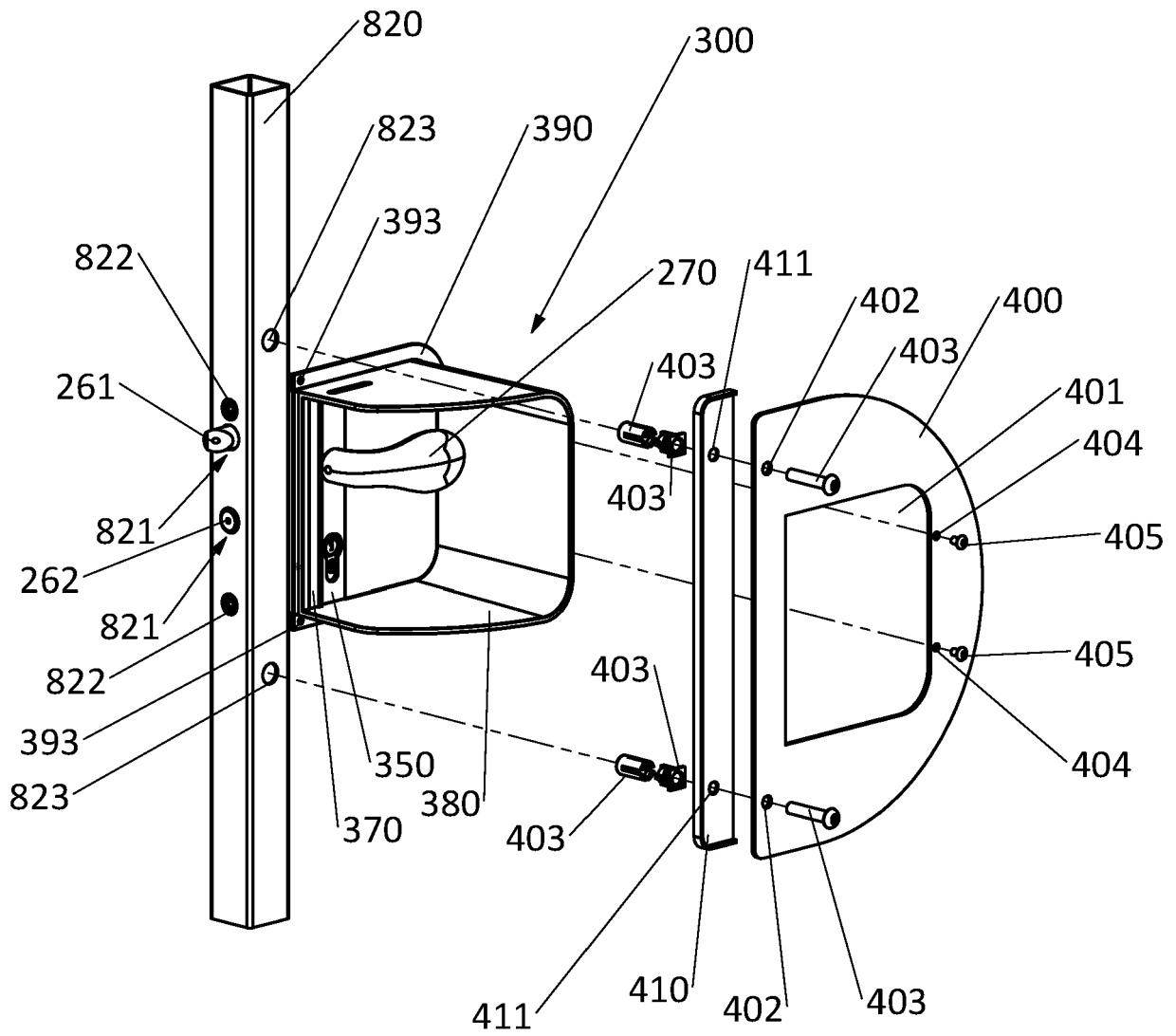


FIG. 12

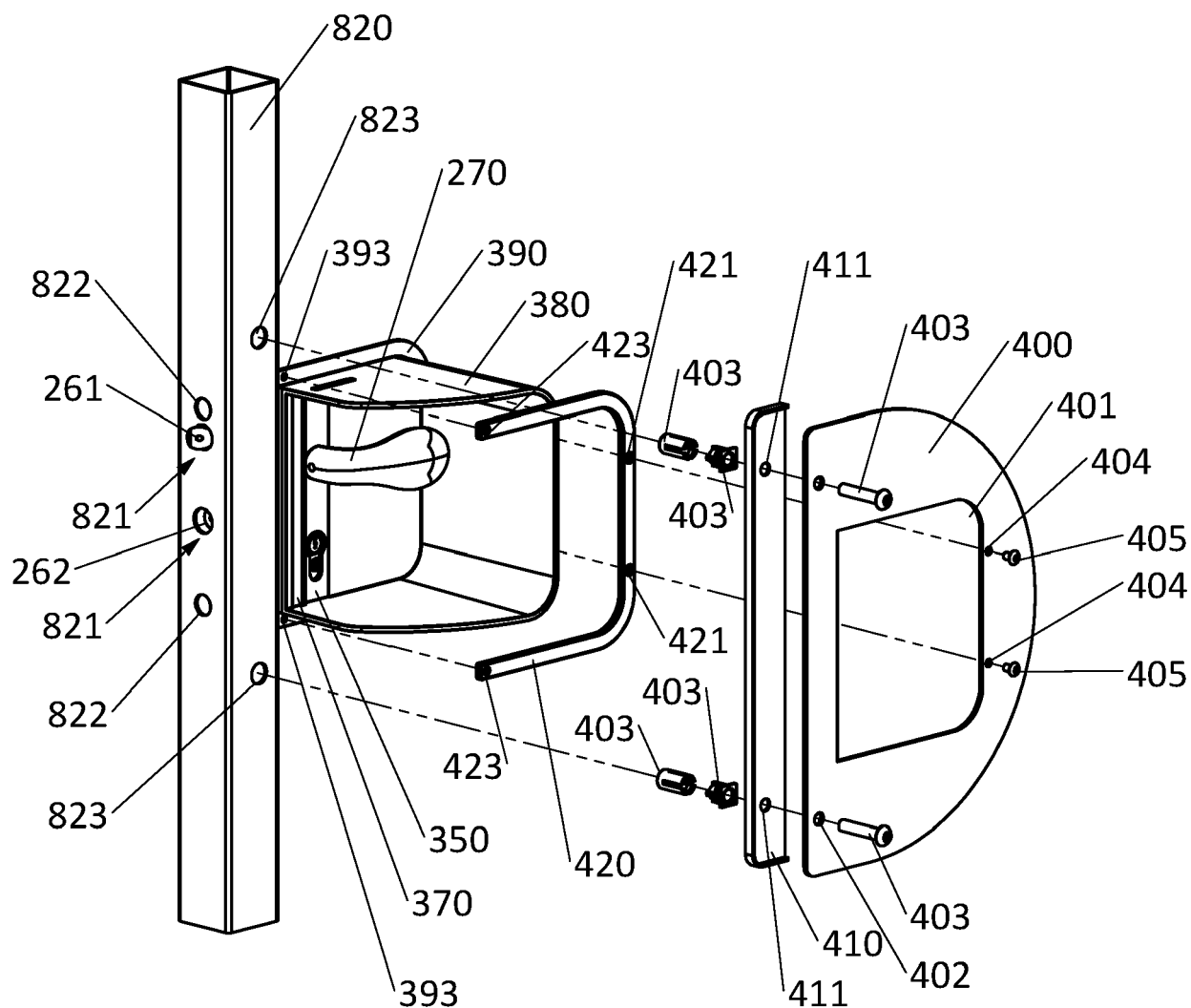


FIG. 13

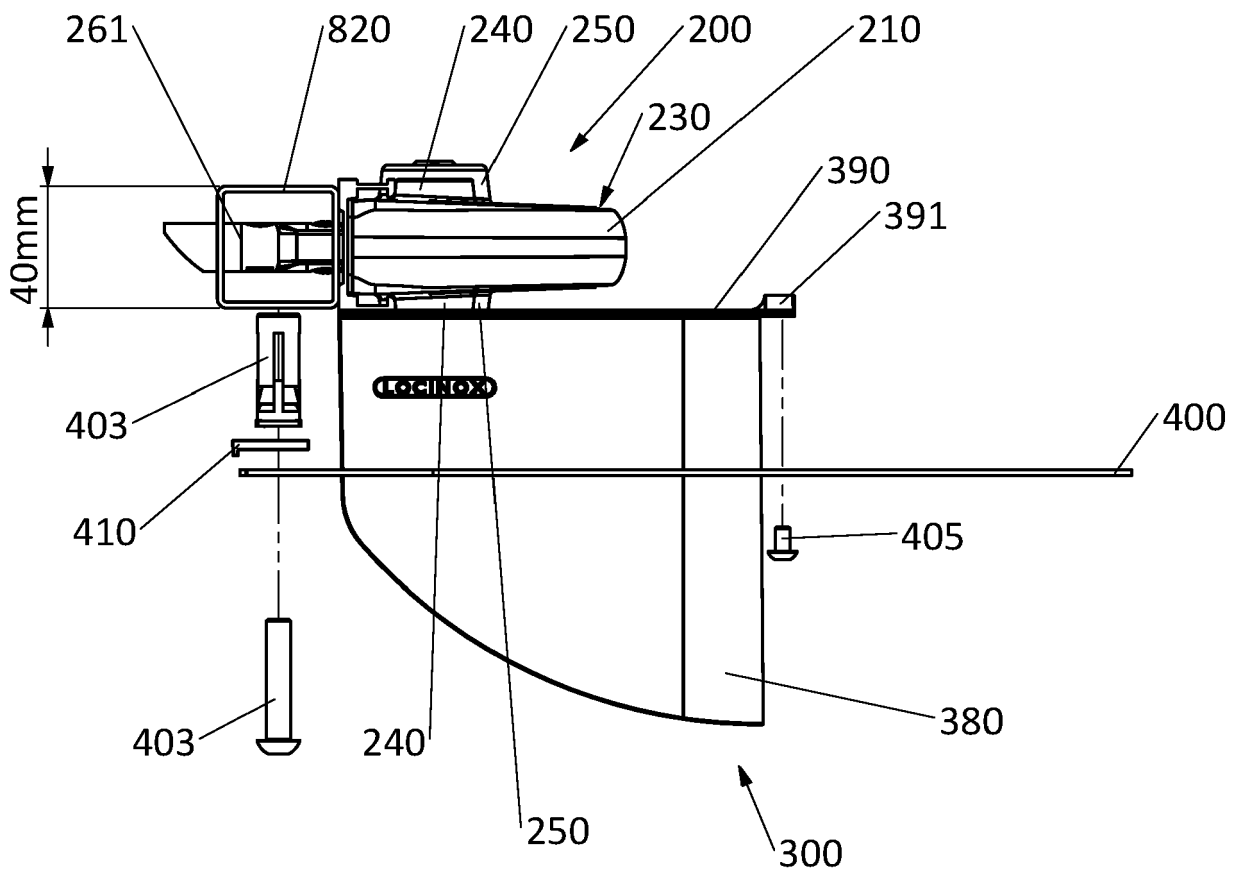


FIG. 14

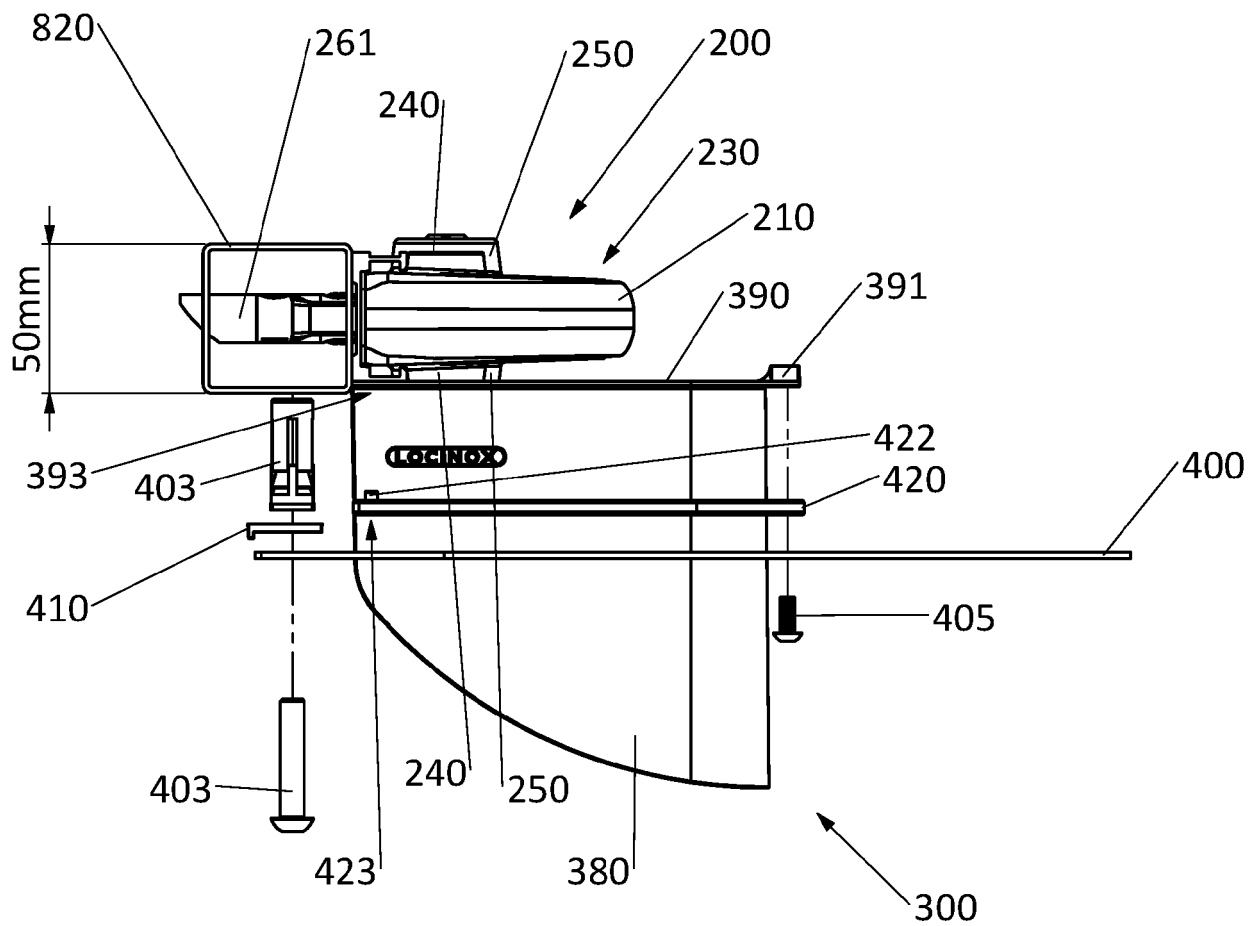


FIG. 15

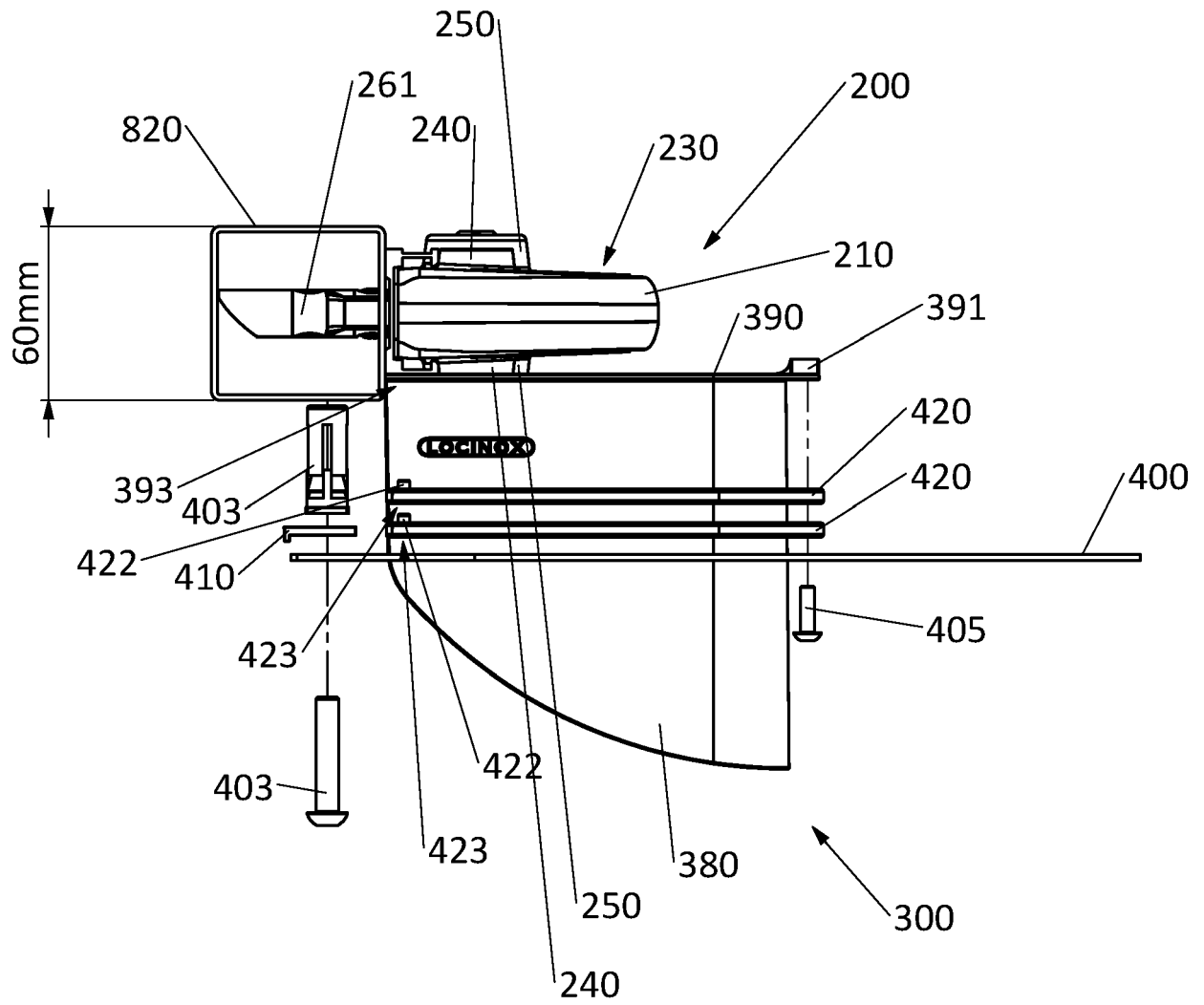


FIG. 16



EUROPEAN SEARCH REPORT

Application Number
EP 21 16 4061

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	EP 3 421 696 A1 (LOCINOX [BE]) 2 January 2019 (2019-01-02) * the whole document *	1-15	INV. E05B65/00 E05B63/04
A	AU 2005 211 522 A1 (ASSA ABLOY AUSTRALIA PTY LTD) 6 April 2006 (2006-04-06) * the whole document *	1-15	ADD. E05B13/00 E05B15/02 E05B17/20 E05B59/00 E06B9/01
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