



(11) **EP 3 467 237 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
12.05.2021 Bulletin 2021/19

(51) Int Cl.:
E05B 15/02 ^(2006.01) **E05B 9/08** ^(2006.01)
E05B 17/20 ^(2006.01) **E05B 63/00** ^(2006.01)
E05B 15/16 ^(2006.01)

(21) Application number: **18207622.4**

(22) Date of filing: **21.06.2012**

(54) **DOOR LOCK DEVICE, DOOR AND METHOD OF MOUNTING A DOOR LOCK CONSTRUCTION**

TÜRVERRIEGELUNGSVORRICHTUNG, TÜR UND VERFAHREN ZUR MONTAGE EINER
TÜRVERRIEGELUNGSKONSTRUKTION

DISPOSITIF DE VERROUILLAGE DE PORTE, PORTE ET PROCÉDÉ DE MONTAGE D'UNE
STRUCTURE DE VERROU DE PORTE

(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**

(30) Priority: **14.07.2011 SE 1150681**

(43) Date of publication of application:
10.04.2019 Bulletin 2019/15

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
12172960.2 / 2 546 436

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Description

BACKGROUND OF THE INVENTION AND PRIOR ART

[0001] The present invention concerns a door lock device configured for a door. The invention also concerns a door with a door lock device and a method of mounting a door lock construction at a door.

[0002] A large number of door lock devices are known. Different details of such devices are also known. The Norwegian design registration number 82202 shows for example a door lock device.

[0003] Further examples of prior art door lock devices are disclosed in: EP-0072803 comprising a cylinder-lock attachment means, and in FORTRESS AXALUC: "Det inbrottsaekra laasskyddet aer haer", 12 August 2010 (2010-08-12, XP002767076).

[0004] It is often desirable that door lock devices have a high security and that they are robust in order to resist burglary.

SUMMARY OF THE INVENTION

[0005] An object of the present invention is to provide a door lock device with high security, which is also adapted to be very stable and relatively simple to mount at a door.

[0006] These objects are achieved with the door lock device which is defined in claim 1.

[0007] Since the lock cylinder protection abuts with its first surface against the plate, and since the lock cylinder protection, or the distance element, is configured to reach the lock case, a very stable construction is obtained, with the help of the attachment means, where the plate, the lock cylinder protection, possible distance elements and the lock case in a mounted state form a stable unit, at the same time as a very high security against burglary is achieved, inter alia because of the use of the particular lock cylinder protection.

[0008] It should be noted that the term "first", "second", "third" etc. is primarily used in order to distinguish the different parts from each other and should therefore not be seen as specifying a certain number.

[0009] With cross-sectional dimension of a recess and lock cylinder is intended the dimension in a direction which in a mounted state is substantially parallel with the inside or the outside of the door.

[0010] With a lock cylinder is meant the part of the lock that interacts with a key and that has at least some movable part, for example a so-called cam, which can be moved with the help of a key and which directly or indirectly interacts with a latch bolt or similar device in the lock case for locking the door in a closed position. The concept "key" includes in this document a traditional mechanical key which is inserted into a keyhole in the lock cylinder, but also different forms of electronic keys which interact with the lock cylinder, either through direct contact with the lock cylinder or through a wireless connection

with the lock cylinder. The lock can thus for example be electromechanical, wherein the cam or similar member can be moved with an "electronic" key. Such an electronic key can communicate with the lock cylinder through said first lock cylinder protection hole - either by direct contact through the first lock cylinder protection hole with a corresponding part of the lock cylinder or through wireless communication, via the first lock cylinder protection hole. The lock cylinder can have different designs, for example of the kind that is shown in Fig. 5 or of the kind that is shown in Fig. 6.

[0011] It should be noted that lock cylinders with a circular cross-section are known. Such lock cylinders often fill substantially the whole hole in the door. According to the present invention it is however that part of the first lock cylinder protection etc. which protrudes into the hole in the door which substantially fills the hole in the door. The lock cylinder is thus only configured to be positioned in the first recess. The cross-sectional area of the first recess is thus substantially smaller than the cross-sectional area of that part of the first lock cylinder protection which protrudes into the hole in the door. It is possible to configure the first recess according to the present invention for receiving a lock cylinder which has a substantially circular cross-section. According to preferred embodiments, the lock cylinder has however another cross-sectional shape, for example an oval cross-sectional shape, such as the lock cylinder which is shown in Fig. 5, or the cross-sectional shape that the lock cylinder shown in Fig. 6 has.

[0012] In case one or more distance elements are used, this or these elements thus extend, in a mounted state, all the way from the second side of the lock cylinder protection to the lock case. The same is the case preferably also for possible distance elements in connection with the second lock cylinder protection and the first and second stabilizing member, and possibly also for the holding member, which are mentioned below.

[0013] The first plate may for example be at least 15 cm, preferably at least 20 cm, long (in the vertical direction of the door in a mounted state). It may for example be at least 4.0 cm, preferably at least 5.0 cm, wide, in a direction crosswise to the length. It can have a thickness of for example at least 1.0 mm, preferably at least 2.0 mm, or at least 3.00 mm. The plate is preferably made of metal, for example of a steel alloy, preferably a hard manganese steel alloy. The same preferred dimensions and materials are also the case for the second plate, which is mentioned below.

[0014] The first plate hole is preferably circular. The hole may have an extension (diameter, if it is circular), of for example between 30 mm and 60 mm, preferably between 35 mm and 45 mm. The same preferred dimensions are the case for the second, third and fourth plate hole which are mentioned below.

[0015] The first lock cylinder protection may for example have a length such that it in a mounted state protrudes in at least 1.0 cm, preferably at least 2.0 cm inside the

outside of the first plate. The same preferred length is the case for the second lock cylinder protection and for the first and second stabilizing member, and may also be the case for the holding member, which are mentioned below.

[0016] The second side of the lock cylinder protection, which side in a mounted state abuts against the lock case or against a distance element, preferably has an area of at least 2.0 cm², preferably at least 4.0 cm², most preferred at least 5.0 cm², since such an abutment surface makes the construction more stable. The corresponding preferred dimension is the case for possible distance elements and for the second side of the second lock cylinder protection, the first stabilizing member and the second stabilizing member which are mentioned below. The same dimension may also be case for the second side of the holding member which is mentioned below.

[0017] The first surface of the first lock cylinder protection preferably has an area of at least 10 cm², more preferred at least 15 cm² and most preferred at least 20 cm² in order to give a sufficient stability to the construction when this surface abuts against the first plate. Corresponding preferred dimensions are the case for the first surface of the second lock cylinder protection which is mentioned below. The corresponding first surface of the first stabilizing member preferably has an area of at least 8 cm², more preferred at least 12 cm² and most preferred at least 16 cm². The same preferred dimension is the case for the corresponding surface of the second stabilizing member and can also be the case for the corresponding surface of the holding member.

[0018] The first lock cylinder protection is preferably configured such that the lock cylinder can be locked in position in the first recess with locking means which in a mounted state is not available to a user.

[0019] An embodiment of the door lock device according to the invention is defined in claim 2. Through this embodiment, the first attachment means is implemented in a simple and secure manner. Since the screws do not reach to the outside of the door, the security of the device is increased.

[0020] According to a preferred embodiment of the door lock device, the first lock cylinder protection has only one hole on the first side, i.e. the first lock cylinder protection hole. This makes the device very safe against burglary.

[0021] A further embodiment of the door lock device according to the invention is defined in claim 3. Through this embodiment, a high stability and security is achieved.

[0022] A further embodiment of the door lock device according to the invention is defined in claim 4. Since the part with the first surface can be moved to different positions relative to the first recess, a flexibility is achieved with the lock protection in order to be able to adapt it to different construction cases. Since the adjustable part can also be locked in a selected position, the lock protection has a high security, since in a locked position, the lock cylinder protection functions as a fixed unit. A high

security is achieved since said locking means is not available from the outside of the door (and neither from the inside of the door).

[0023] A further embodiment of the door lock device according to the invention is defined in claim 5. Through this embodiment a high stability and security is achieved through the design of the first stabilizing member and possible distance elements. The plate, the stabilizing member, possible distance elements and the lock case form in a mounted state a stable unit, which makes the whole door lock construction very stable and safe.

[0024] In a similar manner as concerning the first lock cylinder protection, the portion of the first stabilizing member which comprises said first surface can, according to an embodiment, constitute a part the position of which can be adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion of the first stabilizing member which comprises said second side, wherein this adjustable part can be locked in a selected position with the help of a locking means which, in a mounted state, is not available from the outside of the door (and neither from the inside of the door). Thereby a high flexibility is achieved with the first stabilizing member. It is thereby possible to adjust how much the second side protrudes into the door in a mounted state. It is therefore for example possible to ensure that in a mounted state the second side reaches the lock case and that therefore no distance element is needed in order to reach the lock case.

[0025] A further embodiment of the door lock device according to the invention is defined in claim 6. Thereby the second attachment means is realized in a simple manner.

[0026] A further feature of the door lock device according to the invention is defined in claim 1. Through a second plate the stability and the security are further increased.

[0027] The second plate may be constructed and dimensioned in the same manner as the first plate.

[0028] A further feature of the door lock device according to the invention is defined in claim 1. Through this feature, a lock turning mechanism is thus used for the inside of the door instead of a lock cylinder. The holding member thus contributes to hold the lock turning mechanism in position in a secure manner.

[0029] In a similar manner as concerning the first lock cylinder protection, that portion of the holding member which comprises said first surface, can, according to an embodiment, constitute a part the position of which can be adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion of the holding member which comprises said second side, wherein this adjustable part can be locked in a selected position with the help of a locking means which, in a mounted state, is not available from the inside of the door (and neither from the outside of the door).

[0030] A further feature of the door lock device according to the invention is defined in claim 1. Through this feature, the stability of the construction is increased also when using a lock turning mechanism on the inside of the door.

[0031] A further embodiment of the door lock device according to the invention is defined in claim 7. Through this embodiment, a high stability and security are achieved through the design of the second stabilizing member and possible distance elements. The plate, the stabilizing member, possible distance elements and the lock case form, together with the corresponding parts at the outside of the lock case, in a mounted state a stable unit, which makes the whole door lock construction very stable and safe.

[0032] In a similar manner as concerning for example the first stabilizing member, that portion of the second stabilizing member which comprises said first surface can, according to an embodiment, constitute a part the position of which can be adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion of the second stabilizing member which comprises said second side, wherein this adjustable part can be locked in a selected position with the help of a locking means which, in a mounted state, is not available from the inside of the door (and neither from the inside of the door).

[0033] A further embodiment of the door lock device according to the invention is defined in claim 8. This embodiment has the advantage that no extra screws or screw holes are needed in the plates for safely arranging the plates at the door. This simplifies essentially the mounting of the door lock device at a door.

[0034] A door according to the invention is defined in claim 9. This door has the advantage that it has a door lock device according to the invention, which makes the door/lock-construction very stable and secure against burglary.

[0035] A method according to the invention is defined in claim 10. With this method a door according to the invention is realized, with the advantages that this door has, in a simple manner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036]

Fig. 1 shows schematically a front view of a first lock cylinder protection.
 Fig. 2 shows schematically a perspective view from behind of the lock cylinder protection of Fig. 1.
 Fig. 3 shows schematically an inclined perspective view from the front of a second lock cylinder protection.
 Fig. 4 shows schematically a perspective view from behind of the lock cylinder protection of Fig. 3.
 Fig. 5 shows schematically an exploded view of an alternative embodiment of the first lock cylinder

der protection.

Fig. 6 shows schematically a perspective view of one kind of lock cylinder.
 Fig. 7-9 show schematically a front view of different embodiments of a first and a second plate.
 Fig. 10 shows schematically an exploded view of a door with a door lock device according to an example not forming part of the invention.
 Fig. 11 shows an exploded view similar to that of Fig. 10 of an embodiment according to the invention.

DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0037] Embodiments of the invention will now be described with reference to the annexed drawings. The embodiments describe lock cylinders with a keyhole for interaction with a traditional mechanical key. However, as mentioned above, the invention is also applicable for other kinds of lock cylinders which interact with an "electronic" key.

[0038] An example of a door lock device not forming part of the invention, but which is useful for understanding the invention will now first be described with reference to Fig. 10. This figure shows for the purpose of clarity an exploded view of a door 30 with a door lock device. The door 30 has a first door hole 21 which extends through the door from its outside 31 to its inside 32. The door also has a second door hole 22 which also extends from the outside 31 of the door to the inside 32 of the door. In the door a lock case 23 is arranged. In the first door hole 21, a lock cylinder 40 is arranged (the lock cylinder is shown in one embodiment in Fig. 5 and in another in Fig. 6). The lock cylinder is arranged in a first lock cylinder protection 41. In a mounted state, the lock cylinder 40 extends from the outside 31 of the door into the door hole 21 to the lock case 23 such that the lock cylinder 40 can interact with the lock case 23 in order to lock and unlock the lock.

[0039] The door lock device also has a first plate 51 with a first plate hole 53 and a second plate hole 54. The plate 51 abuts, in a mounted state, against the outside 31 of the door such that the first plate hole 53 coincides with the first door hole 21 and the second plate hole 54 coincides with the second door hole 22. Different examples of the design of such a first plate is shown in Fig. 7-9.

[0040] The door lock device also comprises a second plate 52 with a third plate hole 55 and a fourth plate hole 56. The second plate 52 abuts in a mounted state against the inside 32 of the door. The third plate hole 55 coincides thereby with the first door hole 21 and the fourth plate hole 56 coincides with the second door hole 22. The second plate 52 can have the same appearance as the first plate 51. Fig. 7-9 thus also show examples of different embodiments of the second plate 52. As can be seen in Fig. 8, the plates 51, 52 may also possibly have a further hole 122. This hole 122 is intended for a screw which

goes into or through the lock case 23 which is mounted in the door. Fig. 9 shows another hole 120. The hole 120 is intended for a door handle, which is used in certain door constructions and which is connected to the lock case 23 which is arranged in the door.

[0041] According to these embodiments of the plates 51, 52 there are no further holes through the plates 51, 52 which are intended for screws which are to hold the plates 51, 52 attached at the door 30. Such further holes are not necessary with the present invention since the plates 51, 52 anyway are held safely mounted at the door 30.

[0042] The first lock cylinder protection 41 is shown in more detail in Fig. 1 and 2. This lock cylinder protection 41 has a first side 43 which in a mounted state lies outside the door surface and outside the first plate 51. The lock cylinder protection 41 has a second side 45 which in a mounted state lies in the door 30 in the door hole 21. Furthermore, the lock cylinder protection 41 has a first recess 47.

[0043] This recess 47 has a cross-sectional dimension which is adapted for receiving the lock cylinder 40. The recess 47 extends from the second side 45 towards the first side 43 but not all the way to the first side 43. However, there is a first lock cylinder protection hole 49 which has a smaller cross-sectional dimension than the first recess 47 and than the lock cylinder 40 and which extends from the first recess 47 out through the first side 43. A key can thus be inserted in through the first lock cylinder protection hole 49 into a keyhole 60 in the lock cylinder 40 (see Fig. 5 and 6) in order to lock or unlock the lock. As mentioned above, it is also possible to use some kind of "electronic" key which communicates with the lock cylinder via the first lock cylinder protection hole 49.

[0044] The lock cylinder 40 can be locked in position in the first recess 47 for example in that one or more lock screws 128 (see Fig. 5) are screwed into holes 126 and thereby lock the lock cylinder 40 fixed in the lock cylinder protection 41.

[0045] The lock cylinder protection 41 has a first surface 62 which in a mounted state abuts against the surface of the first plate 51 around the first plate hole 53.

[0046] When we in this application say that the part abuts against the surface, this includes the possibility that the abutment takes place via some intermediate element. Fig. 2 thus shows a sealing packing 124 arranged in a recess in the first surface 62. Fig. 2 shows also another sealing packing 124 which seals against the lock cylinder 40 when it is inserted in the recess 47.

[0047] The first lock cylinder protection 41 is held in position at the door 30 with the help of a first attachment means 64 in the form of two screws (one such screw is shown in Fig. 10). The screws 64 extend from the inside 32 of the door and are connected to the first lock cylinder protection 41 by being screwed into screw holes 68 in the first lock cylinder protection 41. These screw holes 68 extend from the second side 45 but not through the

whole first lock cylinder protection 41 to its first side 43. When the screws 64 have been screwed, these exert a force on the first lock cylinder protection 41 in the direction in towards the door 30. The first surface 62 thus exerts a pressure force against the first plate 51 in the direction towards the outside 31 of the door. The first plate 51 is thus held in position against the outside of the door.

[0048] The first lock cylinder protection 41 can have such a length that it in a mounted state reaches the surface of the lock case 23 in such a manner that the second side 45 of the lock cylinder protection 41 abuts directly against the surface of the lock case when the lock cylinder protection 41 is held attached at the door with the help of the screws 64. Alternatively, the device can comprise one or more distance elements 66 (only shown in the lower part of Fig. 10) which are arranged between the second side 45 of the lock cylinder protection 41 and the lock case 23 in such a manner that in a mounted state that side of said distance element which is facing the lock case 23 reaches to the lock case 23 and abuts against the surface of the lock case when the lock cylinder protection 41 is held attached at the door with the help of the screws 64.

[0049] In Fig. 1 and 2 it is shown that the portion of the first lock cylinder protection 41 which comprises the first surface 62 constitutes one single solid part together with the portion of the lock cylinder protection 41 which comprises the recess 47.

[0050] In Fig. 5 an alternative embodiment is shown where the portion of the lock cylinder protection 41 which comprises the first surface 62 constitutes a separate part 70 the position of which can be adjusted relative to the portion 72 of the first lock cylinder protection 41 which comprises the first recess 47. The adjustment can be made possible in that the outer surface of the portion 72 is threaded and in that there is a corresponding internal thread in a hole in the part 70. The position of the part 70 can thus be selected in that this part is screwed onto the portion 72 until a selected position has been achieved. The part 70 can be locked in the selected position with the help of a locking means 74. The locking means 74 is according to this embodiment a ball. This ball 74 can be inserted from the recess 47 (which is hidden in Fig. 5) through a hole 132 through the wall of the portion 72 in order to protrude into a selected recess 130 at the part 70. The ball 74 thus locks the part 70 relative to the portion 72 in the selected position.

[0051] Fig. 10 also shows a turning device 76 from a door handle 78. In a mounted state, the turning device 76 extends from the door handle 78 on the outside 31 or the door into the second door hole 22 to the lock case 23. The turning device 76 interacts with the lock case 23 such that you can open and close the door 30 with the help of the door handle 78. On the inside 32 of the door there is a corresponding arrangement.

[0052] A first stabilizing member 80 has a first side 82 which in a mounted state lies outside the door surface and outside the first plate 51. The stabilizing member 80

has a second side 84 which in a mounted state lies in the door 30 in the second door hole 22. The stabilizing member 80 has a first surface 86 which in a mounted state abuts, directly or indirectly, against the surface of the first plate 51 around the second plate hole 54.

[0053] In a corresponding manner there is a door handle 78 on the inside 32 of the door 30. The door handle interacts with the turning device 76 which extends from the inside 32 of the door into the door hole 22 to the lock case 23. You can thus open and close the door with the help of the door handle 78 on the inside of the door 30, in that the turning device 76 interacts with the lock case 23. The turning device 76 can for example be a through shaft which extends through the whole second hole 22 and through the lock case 23.

[0054] A second stabilizing member 110 is arranged in a corresponding manner as the first stabilizing member 80. The second stabilizing member 110 thus has a first side 82 which in a mounted state lies inside the door surface on the inside 32 of the door and inside the second plate 52. A second side 84 lies in a mounted state in the door in the second door hole 22. A first surface 86 of the second stabilizing member 110 abuts in a mounted state directly or indirectly against the second plate 52 around the fourth plate hole 56.

[0055] A second attachment means 65 in the form of two screws holds the first stabilizing member 80 and the second stabilizing member 110 attached. In the shown embodiment, the screws 65 extend through a flat member 111 at the door handle 78, through the second stabilizing member 110, through the distance element 66, through, or at the side of, the lock case 23, through further distance elements 66, through the first stabilizing member 80 and through a flat member 87 arranged at the door handle 78 on the outside of the door, such that the screws 65 are screwed into sex bolts 65b.

[0056] According to an alternative embodiment, the screws 65 can be screwed into threaded screw holes in the first stabilizing member 80, which screw holes extend from the second side 84 but which do not reach to the first side 86 (i.e. in a similar manner as the screws 64 are screwed into the screw holes 68 in the first lock cylinder protection 41).

[0057] When the screws 65 have been screwed, the screws 65 exert a force on the first stabilizing member 80 in the direction towards the door such that the first surface 86 of the first stabilizing member 80 exerts a pressure force against the first plate 51 in the direction towards the outside of the door such that the first plate 51 is held in position against the outside of the door. At the same time, the screws 65 exert a force on the second stabilizing member 110 in the direction in towards the door 30 such that the first surface 86 of the second stabilizing member 110 exerts a pressure force against the second plate 52 in the direction towards the inside 32 of the door such that the second plate 52 is held in position against the inside 32 of the door.

[0058] The first stabilizing member 80 can have such

a length that it in a mounted state reaches a surface of the lock case 23 such that it abuts with its second side 84 against the surface of the lock case when the first stabilizing member 80 is held attached at the door with the help of the screws 65. Alternatively, as is shown in Fig. 10, there is one or more distance elements 66 which are arranged between the second side 84 of the first stabilizing member 80 and the lock case 23, such that in a mounted state that side of the distance elements 66 which is facing the lock case 23 abuts against the surface of the lock case when the stabilizing member 80 is held attached at the door with the help of the screws 65.

[0059] In a similar manner, the second stabilizing member 110 can have a length such that it reaches the lock case 23 and such that it abuts with its second side 84 against the lock case when the stabilizing member 110 is held attached with the help of the screws 65. Alternatively, one or more distance elements 66 can be arranged also between the second side 84 of the second stabilizing member and the lock case 23 such that that side of the distance elements which is facing the lock case 23 abuts against the lock case when the second stabilizing member 110 is held attached at the door with the help of the screws 65.

[0060] A second lock cylinder protection 91 is arranged from the inside of the door. Such a second lock cylinder protection 91 is shown in Fig. 3 and 4. The second lock cylinder protection 91 has a similar construction as the first lock cylinder protection 41. The second lock cylinder protection 91 thus has a second recess 93 which is adapted to receive a lock cylinder 40. The recess 93 extends from the second side 45 towards the first side 43 but not all the way to the first side. A second lock cylinder protection hole 95 which has a smaller cross-sectional dimension than the second recess 93 and than the lock cylinder 40 extends however from the second recess 93 out through the first side 43 in a corresponding manner as at the first lock cylinder protection 41. A key may thus interact with a lock cylinder 40 which is arranged in the recess 93 via the second lock cylinder protection hole 95.

[0061] The second lock cylinder protection 91 differs however from the first lock cylinder protection 41 in that there are through screw holes 130, which extend from the first side 43 to the second side 45.

[0062] These screw holes 130 are intended for the first attachment means, that is the screws 64. Furthermore, there are two screw holes 132 which extend from the first side 43 into the recess 93. These screw holes 132 are intended for screws which are screwed through holes in a lock cylinder 40 which is arranged in the recess 93.

[0063] The second lock cylinder protection 91 has a first surface 62 which in a mounted state, directly or indirectly, abuts against the surface of the second plate 52 around the third plate hole 55. In a mounted state, the screws 64 hold the second lock cylinder protection 91 attached at the door. The screws thereby exert a force on the second lock cylinder protection 91 in the direction towards the door (in that they are screwed into the screw

holes 68 in the first lock cylinder protection 41) such that the first surface 62 of the second lock cylinder protection 91 exerts a pressure force against the second plate 52 in the direction towards the inside 32 of the door. In such a manner, the second plate 52 is held in position against the inside 32 of the door.

[0064] The second lock cylinder protection 91 can have such a length that it in a mounted state reaches the lock case 23 such that the second side 45 abuts against the lock case 23 when the second lock cylinder protection 91 is held attached at the door with the help of the screws 64. Alternatively, one or more distance elements 66 can be arranged between the second side 45 of the second lock cylinder protection 91 and the lock case 23 such that that side of the distance elements which is facing the lock case 23 reaches the lock case and abuts against the surface of the lock case when the second lock cylinder protection 91 is held attached at the door with the help of the screws 64.

[0065] In a similar manner as concerning the embodiment of the first lock cylinder protection 41 which is shown in Fig. 5, that portion of the second lock cylinder protection 91 which comprises said first surface 62 can, according to a not shown embodiment, constitute a part the position of which can be adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion of the second lock cylinder protection 91 which comprises said second recess 93, wherein this adjustable part can be locked in a selected position with the help of a locking means which, in a mounted state, is not available from the inside of the door.

[0066] Fig. 11 shows an embodiment according to the invention which differs from the example in Fig. 10 in that there is a lock turning mechanism 100 at the inside of the door at the first door hole 21 and in that there at the second door hole 22 are no door handles or no turning device similar to that which has been shown in connection with Fig. 10.

[0067] Instead of the second lock cylinder protection 91 which is shown in Fig. 10, there is in the embodiment according to Fig. 11 a holding member 101 which has a first side 43 which in a mounted state lies inside the door surface on the inside 32 of the door and inside the second plate 52. The holding member 101 has a second side 45 which in a mounted state lies in the door in the first door hole 21. In a mounted state, a lock turning mechanism 100 extends through the holding member 101 to the lock case 23 such that the lock turning mechanism can interact with the lock case 23 in order to lock and unlock the lock. The holding member 101 has a first surface (corresponding to the surface 62 which has been described above) which in a mounted state abuts, directly or indirectly, against the second plate 52 around the third plate hole 55. Screws 64 hold the holding member 101 attached at the door such that the holding member 101 exerts a force in the direction towards the door such that the first surface of the holding member 101 exerts a pres-

sure force against the second plate 52 in the direction towards the inside 32 of the door. The second plate 52 is thereby held in position against the inside of the door.

[0068] Also the holding member 101 can possibly have such a length that it in a mounted state reaches the lock case 23, such that the second side 45 abuts against the surface of the lock case when the holding member 101 is held attached at the door with the help of the screws 64. Alternatively, one or more distance elements 66 can possibly be arranged between the second side 45 of the holding member 101 and the lock case 23 such that in a mounted state that side of the distance elements which is facing the lock case 23 reaches the lock case and abuts against the surface of the lock case when the holding member 101 is held attached at the door with the help of the screws 64.

[0069] Since there in the embodiment according to Fig. 11 is no turning device 76, the first stabilizing member 80 and the second stabilizing member 110 do not, according to this embodiment, need to have any holes, except for holes for the screws 65. These holes for the screws are extending through the second stabilizing member 110 and can be extending through the first stabilizing member 80, and thereby be screwed into for example sex bolts 65b. According to a preferred embodiment, the first stabilizing member 80 does however have threaded screw holes which do not reach out through the first side 82, whereby no sex bolts 65b are needed.

[0070] In a corresponding manner, possible distance elements 66 according to the embodiment of Fig. 11 only need to have holes for the screws 65.

[0071] Although not shown in the figures, in a similar manner as concerning the embodiment of the first lock cylinder protection 41 which is shown in Fig. 5, that portion of the first stabilizing member 80 and/or the second stabilizing member 110 and/or the holding member 101 which comprises said first surface 86 can constitute a part the position of which can be adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion of the first stabilizing member 80, the second stabilizing member 110 and the holding member 101, respectively, which comprises said second side 84, 45, wherein this adjustable part can be locked in a selected position with the help of a locking means which, in a mounted state, is not available from the outside or the inside of the door.

[0072] In order to further strengthen the arrangement of the first and/or second stabilizing member 80, 110 at the respective plate 51, 52, the respective stabilizing member 80, 110 can, according to a not shown embodiment, be attached at the respective plate 51, 52 with the help of further screws. For example, the first stabilizing member 80 can have two or more threaded screw holes in through the first surface 86, but which do not reach out through the first stabilizing member 80. The plate 51 can have corresponding non-threaded holes for screws. In such a manner, screws can be screwed (before mounting the plate at the door) from the inside of the plate 51

through the holes in the plate 51 into the screw holes in the surface 86 in order to further ensure that the first stabilizing member 80 is held attached at the plate 51. Alternatively, non-threaded screw holes can be arranged which extend in through the surface 86 out through the outside of the first stabilizing member 80. Screws can then for example be screwed in from the outside, through these non-threaded screw holes and into corresponding threaded screw holes in the plate 51 (or, alternatively, be screwed into nuts or sex bolts at the inside of the plate 51). In a corresponding manner, the second stabilizing member 110 can be connected to the plate 52 via further threaded or non-threaded screw holes in through the surface 86 on the second stabilizing member 110.

[0073] Possibly, corresponding screw holes (non-threaded through screw holes or threaded non-through holes) can also be arranged in the upper part in the first surface 62 of the first and/or second lock cylinder protection 41, 91 or of the holding member 101, with corresponding threaded or non-threaded holes at the respective plate 51, 52.

[0074] A door 30 according to the invention comprises a door lock device according to the invention in a mounted state. When the parts have been mounted and when the screws 64 and 65 have been tightened, Fig. 11 thus illustrate an embodiment of a door according to the invention.

[0075] A method of mounting a door lock construction according to the invention can comprise the following steps.

[0076] A lock case 23, at least one lock cylinder 40 and a door lock device according to the invention are provided.

[0077] The lock case 23 is arranged in the door 30 at a position intended therefor in level with the first door hole 21 and the second door hole 22.

[0078] The lock cylinder 40 is arranged in the recess 47 in the first lock cylinder protection 41.

[0079] The door lock device is arranged as has been described above at the door with the help of the screws 64, 65.

[0080] The invention is not limited to the described embodiments but can be modified within the scope of the following claims.

Claims

1. Door lock device configured for a door (30) with a first door hole (21) which extends from the outside (31) of the door to the inside (32) of the door and in which a lock cylinder (40) is intended to be arranged such that it extends from the outside (31) of the door into the first door hole (21) in the direction towards a lock case (23) which is arranged in the door (30) in such a manner that the lock cylinder (40) can interact with the lock case (23) in order to lock and unlock the lock, wherein the door lock device comprises:

prises:

a first plate (51) with a first plate hole (53), which plate (51) is intended to abut against the outside (31) of the door such that the first plate hole (53) coincides with the first door hole (21),
 a first lock cylinder protection (41) with a first side (43), which in a mounted state lies outside the door surface and outside the first plate (51), a second side (45), which in a mounted state lies in the door (30) in said first door hole (21), wherein said first lock cylinder protection (41) has a first recess (47), with a cross-sectional dimension adapted to receive a lock cylinder (40), which recess extends from the second side (45) towards the first side (43) but not all the way to the first side, but where a first lock cylinder protection hole (49) which has a smaller cross-sectional dimension than the first recess (47) and than the lock cylinder (40), extends from said first recess (47) out through the first side (43), wherein the first lock cylinder protection hole (49) is configured such that in a mounted state a key via the first lock cylinder protection hole (49) can interact with the lock cylinder (40) which is positioned in the first recess (47), either in that the key is inserted into a key hole (60) in the lock cylinder (40) or in that the key in another manner communicates with the lock cylinder (40), wherein the first lock cylinder protection (41) comprises a first surface (62) which in a mounted state is configured to, directly or via one or more further elements, abut against the surface of the first plate (51) around the first plate hole (53) and thus around the first door hole (21), first attachment means (64) intended to hold the first lock cylinder protection (41) attached at the door, which first attachment means (64) is intended to extend from the inside (32) of the door and be connected to the first lock cylinder protection (41) without extending out through the first side (43) of the first lock cylinder protection (41), wherein the first attachment means (64) is intended to exert a force on the first lock cylinder protection (41) in the direction in towards the door such that through this force said first surface (62) exerts a pressure force against the first plate (51) in the direction towards the outside (31) of the door such that the first plate (51) is held in position against the outside of the door, wherein either

a) the first lock cylinder protection (41) has such a length that it in a mounted state reaches a surface of the lock case (23) which is mounted in the door and abuts with its second side (45) against the surface of the lock case (23) when the first lock cylinder

der protection (41) is held attached at the door with the help of the first attachment means (64),

or

b) the door lock device comprises at least one distance element (66) configured to be arranged between the second side (45) of the first lock cylinder protection (41) and the lock case (23) which is mounted in the door such that in a mounted state that side of said distance element (66) which is facing the lock case (23) in the door reaches a surface of the lock case (23) and abuts against this surface when the first lock cylinder protection (41) is held attached at the door with the help of the first attachment means (64),

wherein the door lock device comprises:

a second plate (52) with a third plate hole (55), which plate (52) is intended to abut against the inside (32) of the door such that the third plate hole (55) coincides with the first door hole (21), and

a lock turning mechanism (100) intended for being able to lock and unlock the lock from the inside of the door without using a key, wherein the door lock device further comprises:

a holding member (101) with a first side (43), which in a mounted state lies inside the door surface on the inside (32) of the door and inside the second plate (52), a second side (45), which in a mounted state lies in the door in said first door hole (21), wherein in a mounted state the lock turning mechanism (100) extends through the holding member (101) to the lock case (23) such that in a mounted state the lock turning mechanism (100) can interact with the lock case (23) for locking and unlocking the lock, wherein the holding member (101) comprises a first surface which in a mounted state is configured to, directly or via one or more further elements, abut against the surface of the second plate (52) around the third plate hole (55) and thus around the first door hole (21),

wherein the first attachment means (64) is also intended to hold the holding member (101) attached at the door, wherein the first attachment means (64) is intended to exert a force on the holding member (101) in the direction towards the door such that through this

force said first surface of the holding member (101) exerts a pressure force against the second plate (52) in the direction towards the inside (32) of the door such that the second plate (52) is held in position against the inside of the door,

wherein either

a) the holding member (101) has such a length that it in a mounted state reaches a surface of the lock case (23) which is mounted in the door and abuts with its second side (45) against the surface of the lock case (23) when the holding member (101) is held attached at the door with the help of the first attachment mean (64),

or

b) the door lock device comprises at least one distance element (66) configured to be arranged between the second side (45) of the holding member (101) and the lock case (23) which is mounted in the door such that in a mounted state that side of the distance element (66) which is facing the lock case (23) in the door reaches a surface of the lock case and abuts against this surface when the holding member (101) is held attached at the door with the help of the first attachment mean (64).

2. Door lock device according to claim 1, wherein the first attachment means (64) comprises at least two screws which in a mounted state are connected to the first lock cylinder protection (41) by being screwed into threaded screw holes (68) in the first lock cylinder protection (41), which threaded screw holes (68) extend from the second side (45) of the first lock cylinder protection (41) but not through the whole first lock cylinder protection (41) to its first side (43).
3. Door lock device according to any one of the preceding claims, wherein that portion of the first lock cylinder protection (41) which comprises said first surface (62) constitutes one single solid part together with that portion of the first lock cylinder protection (41) which comprises said first recess (47).
4. Door lock device according to any one of the claims 1-2, wherein that portion of the first lock cylinder protection (41) which comprises said first surface (62) constitutes a part (70) the position of which can be

adjusted in a direction which is substantially perpendicular to the surface of the door, as seen in a mounted state, relative to that portion (72) of the first lock cylinder protection (41) which comprises said first recess (47), wherein this adjustable part (70) can be locked in a selected position with the help of a locking means (74) which, in a mounted state, is not available from the outside of the door.

5. Door lock device according to any one of the preceding claims, configured for a door (30) which also has a second door hole (22) which extends from the outside (31) of the door to the inside (32) of the door, and in which for example a turning device (76) from a door handle (78) is intended to be arranged such that it extends from the outside (31) of the door into the second door hole in the direction towards a lock case (23) which is arranged in the door in such a manner that the turning device (76) can interact with the lock case (23) in order to open and close the door (30), wherein the first plate (51) comprises a second plate hole (54), arranged such that in a mounted state the second plate hole (54) coincides with the second door hole (22), and wherein the door lock device comprises:

a first stabilizing member (80) with a first side (82), which in a mounted state lies outside the door surface and outside the first plate (51), a second side (84), which in a mounted state lies in the door in said second door hole (22), wherein the first stabilizing member comprises a first surface (86) which in a mounted state is configured to, directly or via one or more further elements, abut against the surface of the first plate (51) around the second plate hole (54) and thus around the second door hole (22), second attachment means (65) intended to hold the first stabilizing member (80) attached at the door, which second attachment means (65) is intended to extend from the inside (32) of the door and be connected to the first stabilizing member (80), or with a member (87) arranged externally of the first stabilizing member (80), wherein the second attachment means (65) is intended to exert a force on the first stabilizing member (80) in the direction in towards the door such that through this force said first surface (86) of the first stabilizing member (80) exerts a pressure force against the first plate (51) in the direction towards the outside (31) of the door such that the first plate (51) is held in position against the outside of the door, wherein either

a) the first stabilizing member (80) has such a length that it in a mounted state reaches

a surface of the lock case (23) which is mounted in the door and abuts with its second side (84) against the surface of the lock case when the first stabilizing member (80) is held attached at the door with the help of the second attachment means (65), or

b) the door lock device comprises at least one distance element (66) configured to be arranged between the second side (84) of the first stabilizing member (80) and the lock case (23) which is mounted in the door such that in a mounted state that side of said distance element (66) which is facing the lock case (23) in the door reaches a surface of the lock case and abuts against this surface when the first stabilizing member (80) is held attached at the door with the help of the second attachment means (65).

6. Door lock device according to claim 5, wherein the second attachment means comprises at least two screws (65).

7. Door lock device according to any one of the preceding claims, configured for a door which also has a second door hole (22) which extends from the outside (31) of the door to the inside (32) of the door, and in which for example a turning device (76) from a door handle (78) is intended to be arranged such that it extends from the inside (32) of the door into the second door hole (22) in the direction towards a lock case (23) which is arranged in the door in such a manner that the turning device (76) can interact with the lock case (23) in order to open and close the door, wherein the second plate (52) comprises a fourth plate hole (56), arranged such that in a mounted state the fourth plate hole (56) coincides with the second door hole (22), and wherein the door lock protection comprises:

a second stabilizing member (110) with a first side (82), which in a mounted state lies inside the door surface on the inside (32) of the door and inside the second plate (52), a second side (84), which in a mounted state lies in the door in said second door hole (22), wherein the second stabilizing member (110) comprises a first surface (86) which in a mounted state is configured to, directly or via one or more further elements, abut against the surface of the second plate (52) around the fourth plate hole (56) and thus around the second door hole (22), second attachment means (65) intended to hold the second stabilizing member (110) attached at the door, which second attachment means (65)

is intended to extend from the inside (32) of the door and be connected to the second stabilizing member (110), or with a member (111) arranged inside of the second stabilizing member (110), wherein the second attachment means (65) is intended to exert a force on the second stabilizing member (110) in the direction in towards the door such that through this force said first surface (86) of the second stabilizing member (110) exerts a pressure force against the second plate (52) in the direction towards the inside (32) of the door such that the second plate (52) is held in position against the inside of the door, wherein either

a) the second stabilizing member (110) has such a length that it in a mounted state reaches a surface of the lock case (23) which is mounted in the door and abuts with its second side (84) against the surface of the lock case when the second stabilizing member (110) is held attached at the door with the help of the second attachment means (65),

or

b) the door lock device comprises at least one distance element (66) configured to be arranged between the second side (84) of the second stabilizing member and the lock case (23) which is mounted in the door such that in a mounted state that side of said distance element which is facing the lock case (23) in the door reaches a surface of the lock case and abuts against this surface when the second stabilizing member (110) is held attached at the door with the help of the second attachment mean (65).

8. Door lock device according to any one of the preceding claims, wherein said first plate (51) and said second plate (52) except for said first (53), second (54), third (55) and fourth (56) plate holes do not have any holes positioned such that they are intended for screws which are to hold the plates (51, 52) attached at the door without extending to or through the lock case (23) which is arranged in the door.

9. Door (30) comprising at least a first door hole (21) which extends from the outside (31) of the door to the inside (32) of the door, a lock case (23) which is arranged in the door in level with the first door hole (21) and a lock cylinder (40) which is arranged such that it extends from the outside (31) of the door into the first door hole (21) in the direction towards the lock case (23) which is arranged in the door in such a manner that the lock cylinder (40) can interact with the lock case (23) in order to lock and unlock the lock, wherein the door also comprises a door lock

device according to any one of the preceding claims, wherein the door lock device is mounted as intended at the door.

10. Method of mounting a door lock construction at a door (30) which has at least a first door hole (21) which extends from the outside (31) of the door to the inside (32) of the door, which method comprises to:

provide a lock case (23), at least one lock cylinder (40) and a door lock device according to any one of the claims 1-8, arrange the lock case (23) in the door in level with the first door hole (21), arrange the lock cylinder (40) in the first recess (47) in the first lock cylinder protection (41), arrange the door lock device as intended at the door.

Patentansprüche

1. Türverriegelungsvorrichtung, die für eine Tür (30) mit einem ersten Türloch (21) gestaltet ist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt und in dem ein Schließzylinder (40) so angeordnet werden soll, dass er sich von der Außenseite (31) der Tür in das erste Türloch (21) in der Richtung zu einem Schlosskasten (23) hin erstreckt, der in der Tür (30) in einer solchen Weise angeordnet ist, dass der Schließzylinder (40) mit dem Schlosskasten (23) zusammenwirken kann, um das Schloss zu verriegeln und zu entriegeln, wobei die Türverriegelungsvorrichtung umfasst:

eine erste Platte (51) mit einem ersten Plattenloch (53), wobei die Platte (51) dazu bestimmt ist, an der Außenseite (31) der Tür so anzuliegen, dass sich das erste Plattenloch (53) mit dem ersten Türloch (21) deckt, einen ersten Schließzylinderschutz (41) mit einer ersten Seite (43), die in einem montierten Zustand außerhalb der Türoberfläche und außerhalb der ersten Platte (51) liegt, einer zweiten Seite (45), die in einem montierten Zustand in der Tür (30) in dem ersten Türloch (21) liegt, wobei der erste Schließzylinderschutz (41) eine erste Aussparung (47) mit einer Querschnittsabmessung aufweist, die dafür angepasst ist, einen Schließzylinder (40) aufzunehmen, wobei sich die Aussparung von der zweiten Seite (45) zur ersten Seite (43), aber nicht den gesamten Weg zur ersten Seite erstreckt, wo sich jedoch ein erstes Schließzylinderschutzloch (49), das eine kleinere Querschnittsabmessung als die erste Aussparung (47) und als der Schließzylinder (40) aufweist, von der ersten Aussparung (47) durch die erste Seite (43) hinaus erstreckt,

wobei das erste Schließzylinderschutzloch (49) so gestaltet ist, dass in einem montierten Zustand ein Schlüssel durch das erste Schließzylinderschutzloch (49) mit dem in der ersten Ausparung (47) positionierten Schließzylinder (40) zusammenwirken kann, indem entweder der Schlüssel in ein Schlüsselloch (60) in dem Schließzylinder (40) eingeführt wird oder der Schlüssel in einer anderen Weise mit dem Schließzylinder (40) kommuniziert, wobei der erste Schließzylinderschutz (41) eine erste Oberfläche (62) umfasst, die dafür gestaltet ist, in einem montierten Zustand direkt oder über ein oder mehrere weitere Elemente an der Oberfläche der ersten Platte (51) um das erste Plattenloch (53) und somit um das erste Türloch (21) herum anzuliegen, ein erstes Befestigungsmittel (64), das dazu bestimmt ist, den ersten Schließzylinderschutz (41) an der Tür befestigt zu halten, wobei das erste Befestigungsmittel (64) dazu bestimmt ist, sich von der Innenseite (32) der Tür zu erstrecken und mit dem ersten Schließzylinderschutz (41) verbunden zu werden, ohne sich durch die erste Seite (43) des ersten Schließzylinderschutzes (41) heraus zu erstrecken, wobei das erste Befestigungsmittel (64) dafür vorgesehen ist, auf den ersten Schließzylinderschutz (41) in der Richtung zur Tür hin eine Kraft auszuüben, so dass durch diese Kraft die erste Oberfläche (62) eine Druckkraft gegen die erste Platte (51) in der Richtung zur Außenseite (31) der Tür hin ausübt, so dass die erste Platte (51) gegen die Außenseite der Tür in Position gehalten wird, wobei entweder

- a) der erste Schließzylinderschutz (41) eine solche Länge aufweist, dass er in einem montierten Zustand eine Oberfläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (45) an der Oberfläche des Schlosskastens (23) anliegt, wenn der erste Schließzylinderschutz (41) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird, oder
- b) die Türverriegelungsvorrichtung mindestens ein Abstandselement (66) umfasst, das dafür gestaltet ist, zwischen der zweiten Seite (45) des ersten Schließzylinderschutzes (41) und dem in der Tür montierten Schlosskasten (23) angeordnet zu werden, so dass in einem montierten Zustand jene Seite des Abstandselements (66), die dem Schlosskasten (23) in der Tür zugewandt ist, eine Oberfläche des Schlosskastens (23) erreicht und an dieser Oberfläche an-

liegt, wenn der erste Schließzylinderschutz (41) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird,

wobei die Türverriegelungsvorrichtung umfasst:

eine zweite Platte (52) mit einem dritten Plattenloch (55), wobei die Platte (52) dazu bestimmt ist, an der Innenseite (32) der Tür so anzuliegen, dass sich das dritte Plattenloch (55) mit dem ersten Türloch (21) deckt, und einen Schlossdrehmechanismus (100), der dafür vorgesehen ist, das Schloss von der Innenseite der Tür her ohne Verwendung eines Schlüssels verriegeln und entriegeln zu können, wobei die Türverriegelungsvorrichtung ferner umfasst:

ein Halteelement (101) mit einer ersten Seite (43), die in einem montierten Zustand innerhalb der Türoberfläche auf der Innenseite (32) der Tür und innerhalb der zweiten Platte (52) liegt, einer zweiten Seite (45), die in einem montierten Zustand in der Tür in dem ersten Türloch (21) liegt, wobei sich in einem montierten Zustand der Schlossdrehmechanismus (100) durch das Halteelement (101) hindurch zum Schlosskasten (23) erstreckt, so dass in einem montierten Zustand der Schlossdrehmechanismus (100) zum Verriegeln und Entriegeln des Schlosses mit dem Schlosskasten (23) zusammenwirken kann, wobei das Halteelement (101) eine erste Oberfläche umfasst, die dafür gestaltet ist, in einem montierten Zustand direkt oder über ein oder mehrere weitere Elemente an der Oberfläche der zweiten Platte (52) um das dritte Plattenloch (55) und somit um das erste Türloch (21) herum anzuliegen, wobei das erste Befestigungsmittel (64) auch dazu bestimmt ist, das Halteelement (101) an der Tür befestigt zu halten, wobei das erste Befestigungsmittel (64) dafür vorgesehen ist, auf das Halteelement (101) in der Richtung zur Tür hin eine Kraft auszuüben, so dass durch diese Kraft die erste Oberfläche des Halteelements (101) eine Druckkraft gegen die zweite Platte (52) in der Richtung zur Innenseite (32) der Tür hin ausübt, so dass die zweite Platte (52) gegen die Innenseite der Tür in Position gehalten wird, wobei entweder

- a) das Halteelement (101) eine solche Länge aufweist, dass es in einem montierten Zustand eine Oberfläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (45) an der Oberfläche des Schlosskastens (23) anliegt, wenn das Halteelement (101) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird, oder
- b) die Türverriegelungsvorrichtung mindestens ein Abstandselement (66) umfasst, das dafür gestaltet ist, zwischen der zweiten Seite (45) des Halteelements (101) und dem in der Tür montierten Schlosskasten (23) angeordnet zu werden, so dass in einem montierten Zustand jene Seite des Abstandselements (66), die dem Schlosskasten (23) in der Tür zugewandt ist, eine Oberfläche des Schlosskastens erreicht und an dieser Oberfläche anliegt, wenn das Halteelement (101) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird.
2. Türverriegelungsvorrichtung nach Anspruch 1, wobei das erste Befestigungsmittel (64) mindestens zwei Schrauben umfasst, die in einem montierten Zustand mit dem ersten Schließzylinderschutz (41) verbunden sind, indem sie in Schraubgewindelöcher (68) im ersten Schließzylinderschutz (41) eingeschraubt sind, wobei sich die Schraubgewindelöcher (68) von der zweiten Seite (45) des ersten Schließzylinderschutzes (41), jedoch nicht durch den gesamten ersten Schließzylinderschutz (41) hindurch zu dessen erster Seite (43) erstrecken.
3. Türverriegelungsvorrichtung nach einem der vorhergehenden Ansprüche, wobei jener Abschnitt des ersten Schließzylinderschutzes (41), der die erste Oberfläche (62) umfasst, zusammen mit jenem Abschnitt des ersten Schließzylinderschutzes (41), der die erste Aussparung (47) umfasst, ein einziges solides Teil bildet.
4. Türverriegelungsvorrichtung einem der Ansprüche 1 bis 2, wobei jener Teil des ersten Schließzylinderschutzes (41), der die erste Oberfläche (62) umfasst, ein Teil (70) bildet, dessen Position in einer Richtung, die, bei Betrachtung in einem montierten Zustand, im Wesentlichen senkrecht zur Oberfläche der Tür ist, in Bezug auf jenen Abschnitt (72) des ersten Schließzylinderschutzes (41), der die erste Ausspa-

rung (47) umfasst, verstellbar ist, wobei dieses verstellbare Teil (70) mit Hilfe eines Verriegelungsmittels (74), das in einem montierten Zustand von der Außenseite der Tür her nicht zugänglich ist, in einer ausgewählten Position verriegelt werden kann.

5. Türverriegelungsvorrichtung nach einem der vorhergehenden Ansprüche, die für eine Tür (30) gestaltet ist, die zusätzlich ein zweites Türloch (22) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt und in dem zum Beispiel eine Drehvorrichtung (76) von einem Türgriff (78) so angeordnet werden soll, dass sie sich von der Außenseite (31) der Tür in das zweite Türloch in der Richtung zu einem Schlosskasten (23) hin erstreckt, der in der Tür in einer solchen Weise angeordnet ist, dass die Drehvorrichtung (76) mit dem Schlosskasten (23) zusammenwirken kann, um die Tür (30) zu öffnen und zu schließen, wobei die erste Platte (51) ein zweites Plattenloch (54) umfasst, das so angeordnet ist, dass sich in einem montierten Zustand das zweite Plattenloch (54) mit dem zweiten Türloch (22) deckt, und wobei die Türverriegelungsvorrichtung umfasst:

ein erstes Stabilisierungselement (80) mit einer ersten Seite (82), die in einem montierten Zustand außerhalb der Türoberfläche und außerhalb der ersten Platte (51) liegt, einer zweiten Seite (84), die in einem montierten Zustand in der Tür in dem zweiten Türloch (22) liegt, wobei das erste Stabilisierungselement eine erste Oberfläche (86) umfasst, die dafür gestaltet ist, in einem montierten Zustand direkt oder über ein oder mehrere weitere Elemente an der Oberfläche der ersten Platte (51) um das zweite Plattenloch (54) und somit um das zweite Türloch (22) herum anzuliegen, ein zweites Befestigungsmittel (65), das dazu bestimmt ist, das erste Stabilisierungselement (80) an der Tür befestigt zu halten, wobei das zweite Befestigungsmittel (65) dazu bestimmt ist, sich von der Innenseite (32) der Tür zu erstrecken und mit dem ersten Stabilisierungselement (80) oder mit einem äußerlich des ersten Stabilisierungselements (80) angeordneten Element (87) verbunden zu werden, wobei das zweite Befestigungsmittel (65) dafür vorgesehen ist, auf das erste Stabilisierungselement (80) in der Richtung zur Tür hin eine Kraft auszuüben, so dass durch diese Kraft die erste Oberfläche (86) des ersten Stabilisierungselements (80) eine Druckkraft gegen die erste Platte (51) in der Richtung zur Außenseite (31) der Tür hin ausübt, so dass die erste Platte (51) gegen die Außenseite der Tür in Position gehalten wird, wobei entweder

- a) das erste Stabilisierungselement (80) eine solche Länge aufweist, dass es in einem montierten Zustand eine Oberfläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (84) an der Oberfläche des Schlosskastens anliegt, wenn das erste Stabilisierungselement (80) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird, oder
- b) die Türverriegelungsvorrichtung mindestens ein Abstandselement (66) umfasst, das dafür gestaltet ist, zwischen der zweiten Seite (84) des ersten Stabilisierungselements (80) und dem in der Tür montierten Schlosskasten (23) angeordnet zu werden, so dass in einem montierten Zustand jene Seite des Abstandselements (66), die dem Schlosskasten (23) in der Tür zugewandt ist, eine Oberfläche des Schlosskastens erreicht und an dieser Oberfläche anliegt, wenn das erste Stabilisierungselement (80) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird.
6. Türverriegelungsvorrichtung nach Anspruch 5, wobei das zweite Befestigungsmittel mindestens zwei Schrauben (65) umfasst.
7. Türverriegelungsvorrichtung nach einem der vorhergehenden Ansprüche, die für eine Tür gestaltet ist, die zusätzlich ein zweites Türloch (22) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt und in dem zum Beispiel eine Drehvorrichtung (76) von einem Türgriff (78) so angeordnet werden soll, dass sie sich von der Innenseite (32) der Tür in das zweite Türloch (22) in der Richtung zu einem Schlosskasten (23) hin erstreckt, der in der Tür in einer solchen Weise angeordnet ist, dass die Drehvorrichtung (76) mit dem Schlosskasten (23) zusammenwirken kann, um die Tür zu öffnen und zu schließen, wobei die zweite Platte (52) ein viertes Plattenloch (56) umfasst, das so angeordnet ist, dass sich in einem montierten Zustand das vierte Plattenloch (56) mit dem zweiten Türloch (22) deckt, und wobei der Türverriegelungsschutz umfasst:
- ein zweites Stabilisierungselement (110) mit einer ersten Seite (82), die in einem montierten Zustand innerhalb der Türoberfläche auf der Innenseite (32) der Tür und innerhalb der zweiten Platte (52) liegt, einer zweiten Seite (84), die in einem montierten Zustand in der Tür in dem zweiten Türloch (22) liegt, wobei das zweite Stabilisierungselement (110) eine erste Oberfläche (86) umfasst, die dafür gestaltet ist, in einem montierten Zustand direkt oder über ein oder

mehrere weitere Elemente an der Oberfläche der zweiten Platte (52) um das vierte Plattenloch (56) und somit um das zweite Türloch (22) herum anzuliegen,

ein zweites Befestigungsmittel (65), das dazu bestimmt ist, das zweite Stabilisierungselement (110) an der Tür befestigt zu halten, wobei das zweite Befestigungsmittel (65) dazu bestimmt ist, sich von der Innenseite (32) der Tür zu erstrecken und mit dem zweiten Stabilisierungselement (110) oder mit einem innerhalb des zweiten Stabilisierungselements (110) angeordneten Element (111) verbunden zu werden, wobei das zweite Befestigungsmittel (65) dafür vorgesehen ist, auf das zweite Stabilisierungselement (110) in der Richtung zur Tür hin eine Kraft auszuüben, so dass durch diese Kraft die erste Oberfläche (86) des zweiten Stabilisierungselements (110) eine Druckkraft gegen die zweite Platte (52) in der Richtung zur Innenseite (32) der Tür hin ausübt, so dass die zweite Platte (52) gegen die Innenseite der Tür in Position gehalten wird, wobei entweder

- a) das zweite Stabilisierungselement (110) eine solche Länge aufweist, dass es in einem montierten Zustand eine Oberfläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (84) an der Oberfläche des Schlosskastens anliegt, wenn das zweite Stabilisierungselement (110) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird, oder
- b) die Türverriegelungsvorrichtung mindestens ein Abstandselement (66) umfasst, das dafür gestaltet ist, zwischen der zweiten Seite (84) des zweiten Stabilisierungselements und dem in der Tür montierten Schlosskasten (23) angeordnet zu werden, so dass in einem montierten Zustand jene Seite des Abstandselements, die dem Schlosskasten (23) in der Tür zugewandt ist, eine Oberfläche des Schlosskastens erreicht und an dieser Oberfläche anliegt, wenn das zweite Stabilisierungselement (110) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird.
8. Türverriegelungsvorrichtung nach einem der vorhergehenden Ansprüche, wobei die erste Platte (51) und die zweite Platte (52) abgesehen von dem ersten (53), dem zweiten (54), dem dritten (55) und dem vierten (56) Plattenloch keinerlei Löcher aufweisen, die so positioniert sind, dass sie für Schrauben vor-

gesehen sind, welche die Platten (51, 52) an der Tür befestigt halten sollen, ohne sich zu dem oder durch den in der Tür angeordneten Schlosskasten (23) zu erstrecken.

9. Tür (30), umfassend mindestens ein erstes Türloch (21), das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt, einen Schlosskasten (23), der in der Tür in Höhe des ersten Türlochs (21) angeordnet ist, und einen Schließzylinder (40), der so angeordnet ist, dass er sich von der Außenseite (31) der Tür in das erste Türloch (21) in der Richtung zum Schlosskasten (23) hin erstreckt, der in der Tür in einer solchen Weise angeordnet ist, dass der Schließzylinder (40) mit dem Schlosskasten (23) zusammenwirken kann, um das Schloss zu verriegeln und zu entriegeln, wobei die Tür außerdem eine Türverriegelungsvorrichtung nach einem der vorhergehenden Ansprüche umfasst, wobei die Türverriegelungsvorrichtung bestimmungsgemäß an der an der Tür montiert ist.
10. Verfahren zur Montage einer Türverriegelungskonstruktion an einer Tür (30), die mindestens ein erstes Türloch (21) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt, wobei das Verfahren umfasst:
- Bereitstellen eines Schlosskastens (23), mindestens eines Schließzylinders (40) und einer Türverriegelungsvorrichtung nach einem der Ansprüche 1 bis 8,
- Anordnen des Schlosskastens (23) in der Tür in Höhe des ersten Türlochs (21),
- Anordnen des Schließzylinders (40) in der ersten Aussparung (47) im ersten Schließzylinderschutz (41),
- bestimmungsgemäßes Anordnen der Türverriegelungsvorrichtung an der Tür.

Revendications

1. Dispositif de verrou de porte configuré pour une porte (30) avec un premier trou de porte (21) qui s'étend de l'extérieur (31) de la porte à l'intérieur (32) de la porte et dans lequel on prévoit d'agencer un barillet de serrure (40) de sorte qu'il s'étend de l'extérieur (31) de la porte dans le premier trou de porte (21) dans la direction vers un palastre (23) qui est agencé dans la porte (30) de sorte que le barillet de serrure (40) peut interagir avec le palastre (23) afin de verrouiller et de déverrouiller le verrou, dans lequel le dispositif de verrouillage de porte comprend :
- une première plaque (51) avec un premier trou de plaque (53), laquelle plaque (51) est prévue pour venir en butée contre l'extérieur (31) de la

porte de sorte que le premier trou de plaque (53) coïncide avec le premier trou de porte (21) ,

une première protection de barillet de serrure (41) avec un premier côté (43) qui, dans un état monté, est à l'extérieur de la surface de porte et à l'extérieur de la première plaque (51), un second côté (45) qui, dans un état monté, se trouve dans la porte (30) dans ledit premier trou de porte (21), dans lequel ladite première protection de barillet de serrure (41) a un premier évidement (47), avec une dimension transversale adaptée pour recevoir un barillet de serrure (40), lequel évidement s'étend du second côté (45) vers le premier côté (43) mais pas jusqu'au bout du premier côté, mais à l'endroit où un trou (49) de la première protection de barillet de serrure qui a une dimension transversale inférieure au premier évidement (47) et au barillet de serrure (40), traverse le premier côté (43) à partir dudit premier évidement (47), dans lequel le trou (49) de la première protection de barillet de serrure est configuré de sorte que, dans un état monté, une clé, via le trou (49) de la première protection de barillet de serrure peut interagir avec le barillet de serrure (40) qui est positionné dans le premier évidement (47), en ce que la clé est insérée dans un trou de serrure (60) dans le barillet de serrure (40) ou en ce que la clé communique d'une autre manière avec le barillet de serrure (40), dans lequel la première protection de barillet de serrure (41) comprend une première surface (62) qui, dans un état monté, est configurée pour, directement ou via un ou plusieurs éléments supplémentaires, venir en butée contre la surface de la première plaque (51) autour du premier trou de plaque (53) et ainsi autour du premier trou de porte (21),

un premier moyen de fixation (64) prévu pour maintenir la première protection de barillet de serrure (41) fixée à la porte, lequel premier moyen de fixation (64) est prévu pour s'étendre à partir de l'intérieur (32) de la porte et être raccordé à la première protection de barillet de serrure (41) sans traverser le premier côté (43) de la première protection de barillet de serrure (41), dans lequel le premier moyen de fixation (64) est prévu pour exercer une force sur la première protection de barillet de serrure (41) dans la direction vers la porte de sorte que par le biais de cette force, ladite première surface (62) exerce une force de pression contre la première plaque (51) dans la direction vers l'extérieur (31) de la porte de sorte que la première plaque (51) est maintenue en position contre l'extérieur de la porte,

dans lequel :

a) la première protection de barillet de ser-

rure (41) a une longueur telle qu'à l'état
 monté, elle atteint une surface du palastre
 (23) qui est monté dans la porte et vient en
 butée avec son second côté (45) contre la
 surface du palastre (23) lorsque la première
 protection de barillet de serrure (41) est
 maintenue fixée à la porte à l'aide du pre-
 mier moyen de fixation (64),
 ou bien
 b) le dispositif de verrouillage de porte com-
 prend un élément d'espacement (66) con-
 figuré pour être agencé entre le second côté
 (45) de la première protection de barillet de
 serrure (41) et le palastre (23) qui est monté
 dans la porte, de sorte que dans un état
 monté, ce côté dudit élément d'espacement
 (66) qui fait face au palastre (23) dans la
 porte, atteint une surface du palastre (23)
 et vient en butée contre cette surface lors-
 que la première protection de barillet de ser-
 rure (41) est maintenue fixée à la porte à
 l'aide du premier moyen de fixation (64),
 dans lequel le dispositif de verrouillage de
 porte comprend :

une seconde plaque (52) avec un troi-
 sième trou de plaque (55), laquelle pla-
 que (52) est prévue pour venir en butée
 contre l'intérieur (32) de la porte de sor-
 te que le troisième trou de plaque (55)
 coïncide avec le premier trou de porte
 (21), et
 un mécanisme de rotation de verrou
 (100) prévu pour pouvoir verrouiller et
 déverrouiller le verrou depuis l'intérieur
 de la porte sans utiliser de clé, dans
 lequel le dispositif de verrouillage de
 porte comprend en outre :

un élément de support (101) avec
 un premier côté (43) qui, dans un
 état monté, se trouve à l'intérieur
 de la surface de porte à l'intérieur
 (32) de la porte et à l'intérieur de la
 seconde plaque (52), un second
 côté (45) qui, dans un état monté,
 se trouve dans la porte dans ledit
 premier trou de porte (21), dans le-
 quel, dans un état monté, le méca-
 nisme de rotation de verrou (100)
 s'étend à travers l'élément de sup-
 port (101) jusqu'au palastre (23) de
 sorte que, dans un état monté, le
 mécanisme de rotation de verrou
 (100) peut interagir avec le palas-
 tre (23) pour verrouiller et déver-
 rouiller le verrou, dans lequel l'élé-
 ment de support (101) comprend

une première surface qui, dans un
 état monté, est configurée pour, di-
 rectement ou via un ou plusieurs
 éléments supplémentaires, venir
 en butée contre la surface de la se-
 conde plaque (52) autour du troi-
 sième trou de plaque (55) et ainsi
 autour du premier trou de porte
 (21),
 dans lequel le premier moyen de
 fixation (64) est également prévu
 pour maintenir l'élément de sup-
 port (101) fixé à la porte, dans le-
 quel le premier moyen de fixation
 (64) est prévu pour exercer une for-
 ce sur l'élément de support (101)
 dans la direction vers la porte de
 sorte que par le biais de cette force,
 ladite première surface de l'élé-
 ment de support (101) exerce une
 force de pression contre la secon-
 de plaque (52) dans la direction
 vers l'intérieur (32) de la porte de
 sorte que la seconde plaque (52)
 est maintenue en position contre
 l'intérieur de la porte,
 dans lequel :

a) l'élément de support (101)
 a une longueur telle que, dans
 un état monté, il atteint une
 surface du palastre (23) qui est
 monté dans la porte et vient en
 butée avec son second côté
 (45) contre la surface du pa-
 lastre (23) lorsque l'élément
 de support (101) est maintenu
 fixé à la porte à l'aide du pre-
 mier moyen de fixation (64),
 ou bien
 b) le dispositif de verrouillage
 de porte comprend au moins
 un élément d'espacement (66)
 configuré pour être agencé
 entre le second côté (45) de
 l'élément de support (101) et
 le palastre (23) qui est monté
 dans la porte de sorte que,
 dans un état monté, ce côté de
 l'élément d'espacement (66)
 qui fait face au palastre (23)
 dans la porte atteint une sur-
 face du palastre et vient en bu-
 tée contre cette surface lors-
 que l'élément de support (101)
 est maintenu fixé à la porte à
 l'aide du premier moyen de
 fixation (64).

2. Dispositif de verrouillage de porte selon la revendication 1, dans lequel le premier moyen de fixation (64) comprend au moins deux vis qui, dans un état monté, sont raccordées à la première protection de barillet de serrure (41) en étant vissées dans des trous de vis filetés (68) dans la première protection de barillet de serrure (41), lesquels trous de vis filetés (68) s'étendent à partir du second côté (45) de la première protection de barillet de serrure (41) mais pas à travers toute la première protection de barillet de serrure (41) jusqu'à son premier côté (43). 5
3. Dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, dans lequel cette partie de la première protection de barillet de serrure (41) qui comprend ladite première surface (62) constitue une partie pleine unique conjointement avec cette partie de la première protection de barillet de serrure (41) qui comprend ledit premier évidement (47). 10
4. Dispositif de verrouillage de porte selon l'une quelconque des revendications 1 à 2, dans lequel cette partie de la première protection de barillet de serrure (41) qui comprend ladite première surface (62) constitue une partie (70), dont la position peut être ajustée dans une direction qui est sensiblement perpendiculaire à la surface de la porte, comme observé dans un état monté, par rapport à cette partie (72) de la première protection de barillet de serrure (41) qui comprend ledit premier évidement (47), dans lequel cette partie ajustable (70) peut être verrouillée dans une position sélectionnée à l'aide d'un moyen de verrouillage (74) qui, dans un état monté, n'est pas disponible depuis l'extérieur de la porte. 20
5. Dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, configuré pour une porte (30) qui a également un second trou de porte (22) qui s'étend depuis l'extérieur (31) de la porte jusqu'à l'intérieur (32) de la porte, et dans lequel, par exemple, un dispositif de rotation (76) provenant d'une poignée de porte (78), est prévu pour être agencé de sorte qu'il s'étend à partir de l'extérieur (31) de la porte dans le second trou de porte dans la direction vers un palastre (23) qui est agencé dans la porte, de sorte que le dispositif de rotation (76) peut interagir avec le palastre (23) afin d'ouvrir et de fermer la porte (30), dans lequel la première plaque (51) comprend un deuxième trou de plaque (54) agencé de sorte que, dans un état monté, le deuxième trou de plaque (54) coïncide avec le second trou de porte (22), et dans lequel le dispositif de verrouillage de porte comprend : 25

un premier élément de stabilisation (80) avec un premier côté (82) qui, dans un état monté, se

trouve à l'extérieur de la surface de porte et à l'extérieur de la première plaque (51), un second côté (84) qui, dans un état monté, se trouve dans la porte dans le second trou de porte (22), dans lequel le premier élément de stabilisation comprend une première surface (86) qui, dans un état monté, est configuré pour, directement ou via un ou plusieurs éléments supplémentaires, venir en butée contre la surface de la première plaque (51) autour du deuxième trou de plaque (54) et ainsi autour du second trou de porte (22), un second moyen de fixation (65) prévu pour supporter le premier élément de stabilisation (80) fixé à la porte, lequel second moyen de fixation (65) est prévu pour s'étendre depuis l'intérieur (32) de la porte et être raccordé au premier élément de stabilisation (80) ou avec un élément (87) agencé à l'extérieur du premier élément de stabilisation (80), dans lequel le second moyen de fixation (65) est prévu pour exercer une force sur le premier élément de stabilisation (80) dans la direction vers la porte de sorte que par le biais de cette force, ladite première surface (86) du premier élément de stabilisation (80) exerce une force de pression contre la première plaque (51) dans la direction vers l'extérieur (31) de la porte de sorte que la première plaque (51) est maintenue en position contre l'extérieur de la porte, dans lequel :

a) le premier élément de stabilisation (80) a une longueur telle que dans un état monté, il atteint une surface du palastre (23) qui est monté dans la porte et vient en butée avec son second côté (84) contre la surface du palastre lorsque le premier élément de stabilisation (80) est maintenu fixé à la porte à l'aide du second moyen de fixation (65), ou bien

b) le dispositif de verrouillage de porte comprend au moins un élément d'espacement (66) configuré pour être agencé entre le second côté (84) du premier élément de stabilisation (80) et le palastre (23) qui est monté dans la porte de sorte que, dans un état monté, ce côté dudit élément d'espacement (66) qui fait face au palastre (23) dans la porte, atteint une surface du palastre et vient en butée contre cette surface lorsque le premier élément de stabilisation (80) est maintenu fixé à la porte à l'aide du second moyen de fixation (65). 30

6. Dispositif de verrouillage de porte selon la revendication 5, dans lequel le second moyen de fixation comprend au moins deux vis (65). 35

7. Dispositif de verrouillage de porte selon l'une quel-

conque des revendications précédentes, configuré pour une porte qui a également un second trou de porte (22) qui s'étend depuis l'extérieur (31) de la porte jusqu'à l'intérieur (32) de la porte, et dans lequel par exemple un dispositif de rotation (76) provenant d'une poignée de porte (78), est prévu pour être agencé de sorte qu'il s'étend depuis l'intérieur (32) de la porte dans le second trou de porte (22) dans la direction vers le palastre (23) qui est agencé dans la porte de sorte que le dispositif de rotation (76) peut interagir avec le palastre (23) afin d'ouvrir et de fermer la porte, dans lequel la seconde plaque (52) comprend un quatrième trou de plaque (56) agencé de sorte que, dans un état monté, le quatrième trou de plaque (56) coïncide avec le second trou de porte (22), et dans lequel la protection de verrou de porte comprend :

un second élément de stabilisation (110) avec un premier côté (82) qui, dans un état monté, se trouve à l'intérieur de la surface de porte à l'intérieur (32) de la porte et à l'intérieur de la seconde plaque (52), un second côté (84) qui, dans un état monté, se trouve dans la porte dans ledit second trou de porte (22), dans lequel le second élément de stabilisation (110) comprend une première surface (86) qui, dans un état monté, est configurée pour, directement ou via un ou plusieurs éléments supplémentaires, venir en butée contre la surface de la seconde plaque (52) autour du quatrième trou de plaque (56) et ainsi autour du second trou de porte (22), un second moyen de fixation (65) prévu pour maintenir le second élément de stabilisation (110) fixé à la porte, lequel second moyen de fixation (65) est prévu pour s'étendre depuis l'intérieur (32) de la porte et être raccordé au second élément de stabilisation (110) ou avec un élément (111) agencé à l'intérieur du second élément de stabilisation (110), dans lequel le second moyen de fixation (65) est prévu pour exercer une force sur le second élément de stabilisation (110) dans la direction vers la porte de sorte que par le biais de cette force, ladite première surface (86) du second élément de stabilisation (110) exerce une force de pression contre la seconde plaque (52) dans la direction vers l'intérieur (32) de la porte de sorte que la seconde plaque (52) est maintenue en position contre l'intérieur de la porte, dans lequel :

a) le second élément de stabilisation (110) a une longueur telle que, dans un état monté, il atteint une surface du palastre (23) qui est monté dans la porte et vient en butée avec son second côté (84) contre la surface du palastre lorsque le second élément de

stabilisation (110) est maintenu fixé à la porte à l'aide du second moyen de fixation (65), ou bien

b) le dispositif de verrouillage de porte comprend au moins un élément d'espacement (66) configuré pour être agencé entre le second côté (84) du second élément de stabilisation et le palastre (23) qui est monté dans la porte, de sorte que, dans un état monté, ce côté dudit élément d'espacement qui fait face au palastre (23) dans la porte atteint une surface du palastre et vient en butée contre cette surface lorsque le second élément de stabilisation (110) est maintenu fixé à la porte à l'aide du second moyen de fixation (65).

8. Dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, dans lequel ladite première plaque (51) et ladite seconde plaque (52) excepté lesdits premier (53), deuxième (54), troisième (55) et quatrième (56) trous de plaque n'ont pas de trous positionnés de sorte qu'ils sont prévus pour des vis qui doivent maintenir les plaques (51, 52) fixées à la porte sans s'étendre vers ni à travers le palastre (23) qui est agencé dans la porte.

9. Porte (30) comprenant au moins un premier trou de porte (21) qui s'étend à partir de l'extérieur (31) de la porte jusqu'à l'intérieur (32) de la porte, un palastre (23) qui est agencé dans la porte de niveau avec le premier trou de porte (21) et un barillet de serrure (40) qui est agencé de sorte qu'il s'étend depuis l'extérieur (31) de la porte dans le premier trou de porte (21) dans la direction vers le palastre (23) qui est agencé dans la porte de sorte que le barillet de serrure (40) peut interagir avec le palastre (23) afin de verrouiller et déverrouiller le verrou, dans laquelle la porte comprend également un dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, dans laquelle le dispositif de verrouillage de porte est monté comme prévu sur la porte.

10. Procédé pour monter une construction de verrouillage de porte sur une porte (30) qui a au moins un premier trou de porte (21) qui s'étend à partir de l'extérieur (31) de la porte vers l'intérieur (32) de la porte, lequel procédé comprend les étapes consistant à :

prévoir un palastre (23), au moins un barillet de serrure (40) et un dispositif de verrouillage de porte selon l'une quelconque des revendications 1 à 8,

agencer le palastre (23) dans la porte de niveau avec le premier trou de porte (21),

agencer le barillet de serrure (40) dans le premier évidement (47) dans la première protection

de barillet de serrure (41),
agencer le dispositif de verrouillage de porte,
comme prévu, sur la porte.

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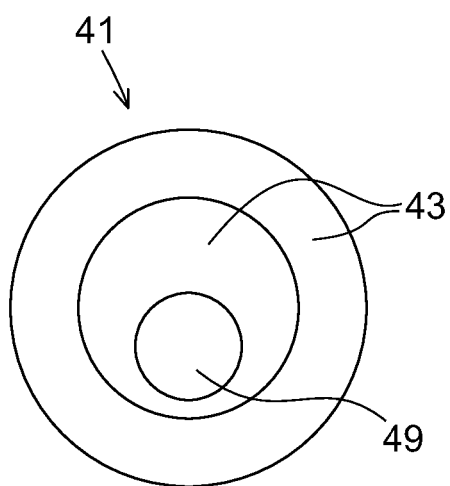


Fig. 1

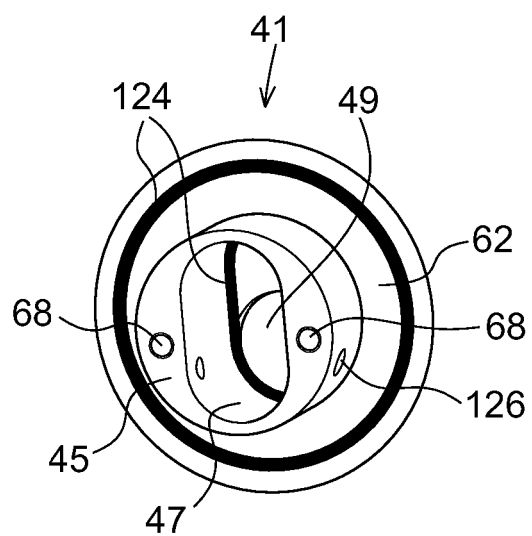


Fig. 2

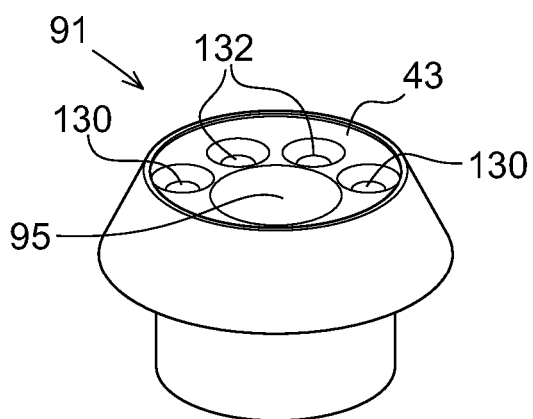


Fig. 3

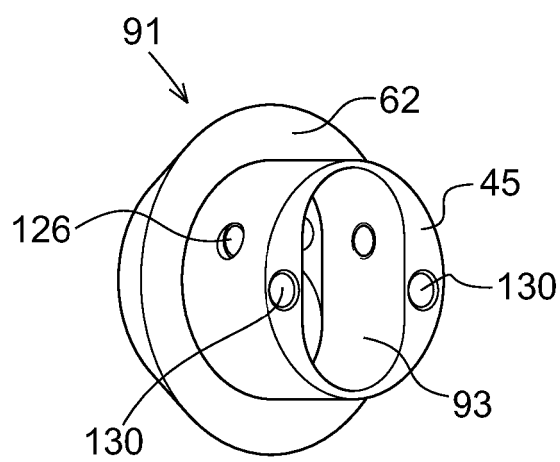


Fig. 4

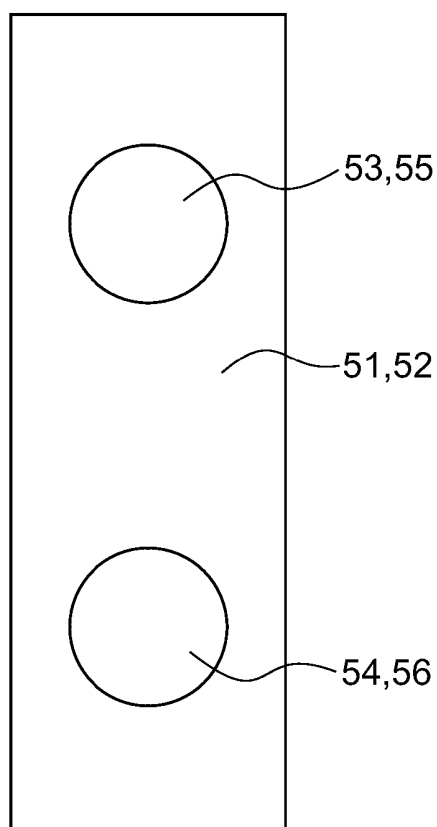
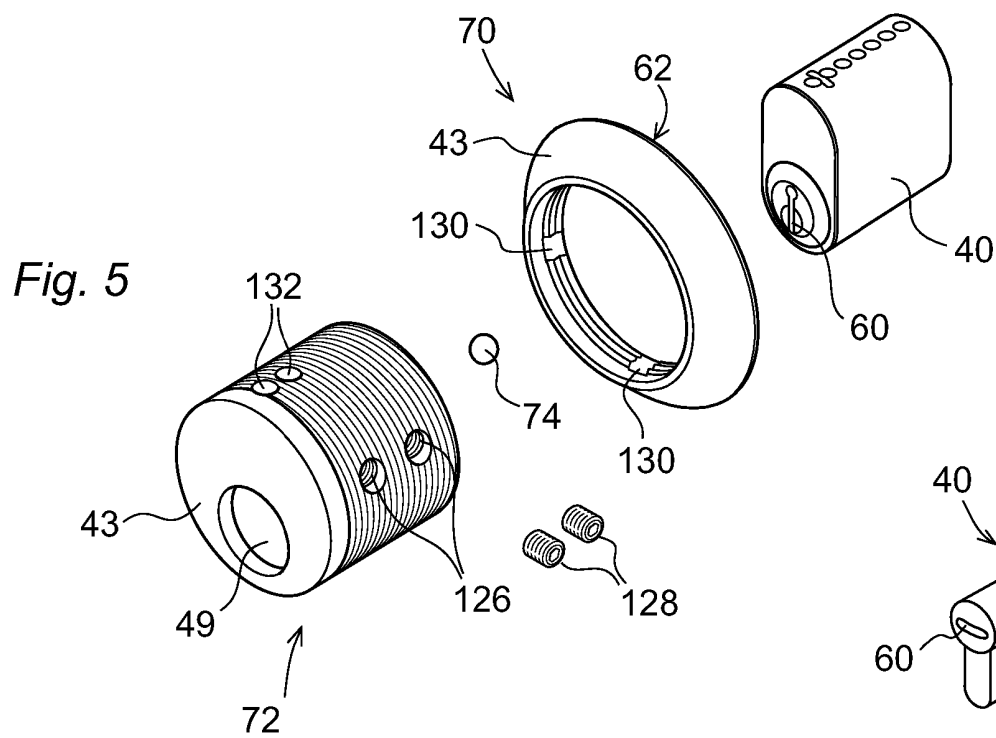


Fig. 7

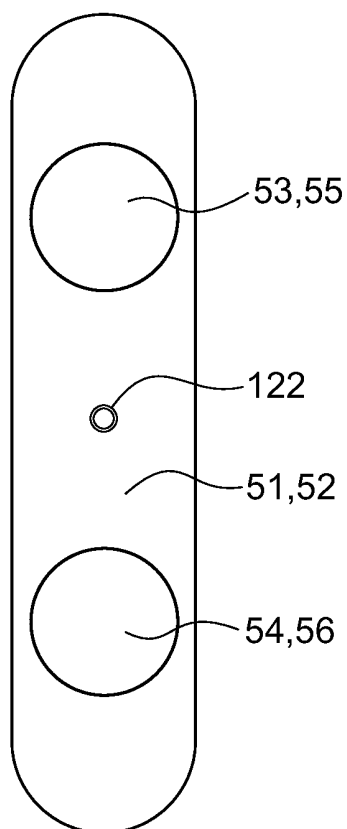


Fig. 8

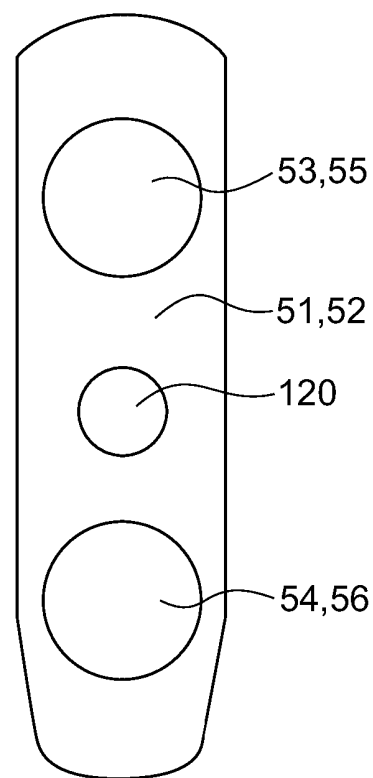


Fig. 9

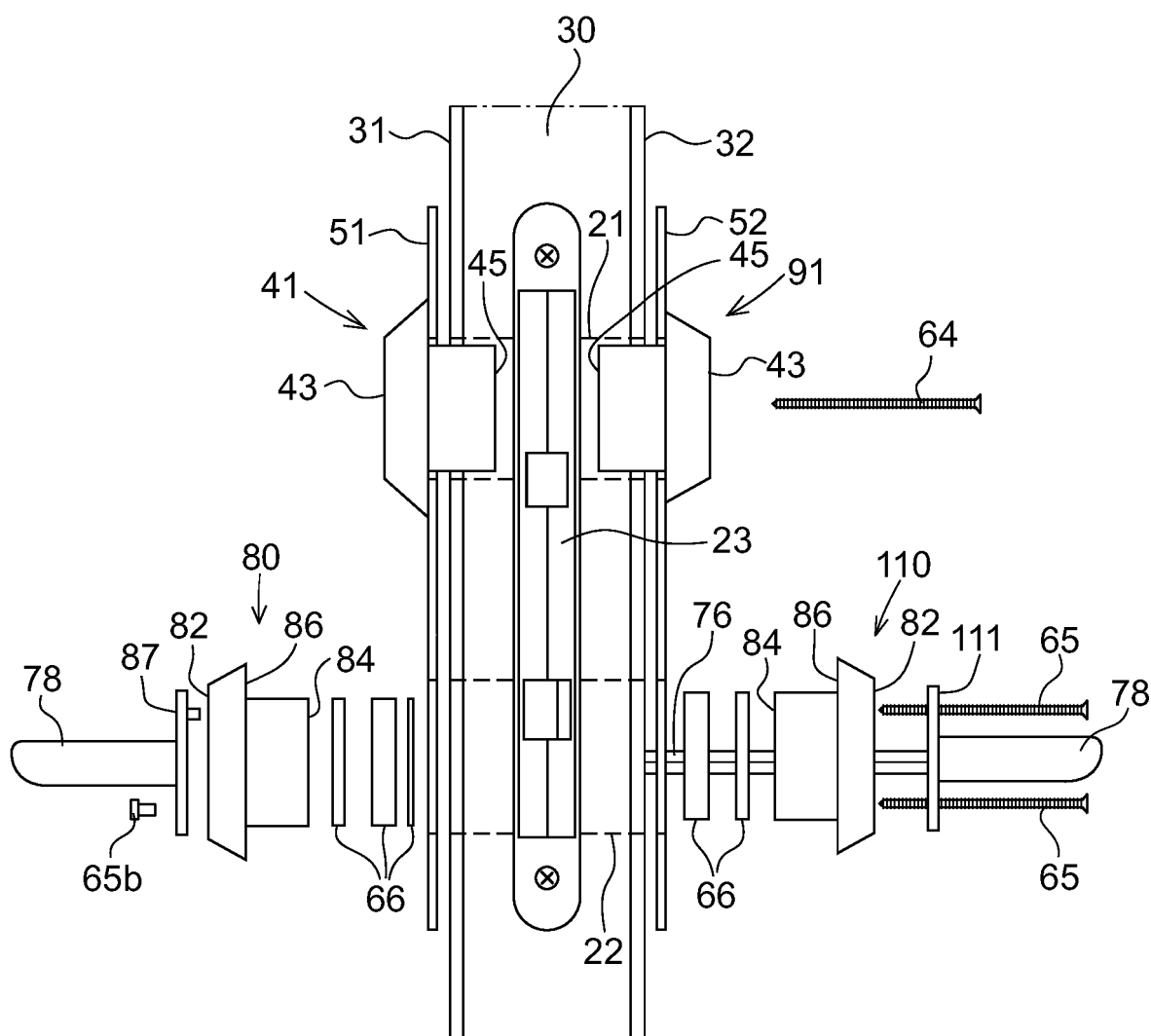


Fig. 10

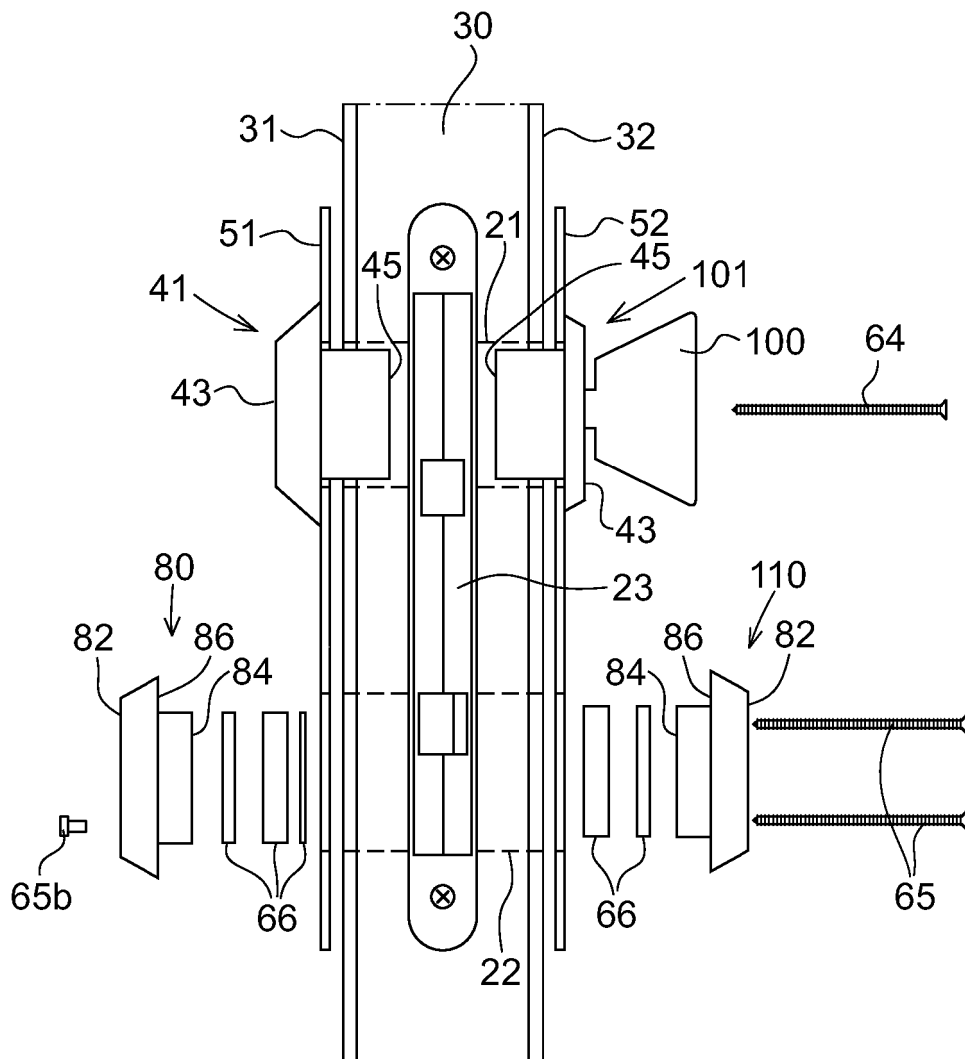


Fig. 11

REFERENCES CITED IN THE DESCRIPTION

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