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(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

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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] WO 82/01733 A1 describes a cylinder-lock attachment means. The document describes in particular in connection with Figs. 5 and 6 two mutually connected cylinder lock fittings in connection with a lock housing mounted in position on a door. Escutcheons of the cylinder fittings are joined together by means of four screws. Lock cylinders are positioned in the cylinder fittings. The lock cylinders protrude out from the cylinder fittings.

[0004] The internet publication FORTESS AXALUX: "Det inbrottssäkra låsskyddet är här", 12 August 2010 (2010-08-12), XP002767076, Retreived from the Internet:URL:http://web.archive.org/web/20100812014958/http:/ www.fortaxa.se/Produktblad/Fortsarkningstillbehor.pdf [retreived on 2017-02-09] shows schematically a lock protection arranged on the outside and the inside of a door.

[0005] 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

[0006] 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.

[0007] These objects are achieved with the door lock device which is defined in claim 1.

[0008] 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. 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.

[0009] 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.

[0010] 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] 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.

[0017] 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 cm^2, preferably at least 4.0 cm^2, most preferred at least 5.0 cm^2, 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.

[0018] The first surface of the first lock cylinder protection preferably has an area of at least 10 cm^2, more preferred at least 15 cm^2 and most preferred at least 20 cm^2 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 cm^2, more preferred at least 12 cm^2 and most preferred at least 16 cm^2. 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.

[0019] 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.

[0020] 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.

[0021] 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.

[0022] 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.

[0023] 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).

[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 5. Thereby the second attachment means is realized in a simple manner.

[0026] A further embodiment of the door lock device according to the invention is defined in claim 6. 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 embodiment of the door lock device according to the invention is defined in claim 7. Through this embodiment, the stability and the security are further increased since a lock cylinder protection is provided also for the inside of the door. This embodiment has advantages corresponding to those which have been described in connection with claim 1. The whole door lock device thus becomes very stable according to this embodiment.

[0029] In a similar manner as concerning the first lock cylinder protection, the portion of the second lock cylinder

protection 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 lock cylinder protection which comprises said second recess, 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] An alternative embodiment of the door lock device according to the invention is defined in claim 8. Through this embodiment, 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.

[0031] In a similar manner as concerning the first and second 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).

[0032] A further embodiment of the door lock device according to the invention is defined in claim 9. Through this embodiment, the stability of the construction is increased also when using a lock turning mechanism on the inside of the door.

[0033] A further embodiment of the door lock device according to the invention is defined in claim 10. 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.

[0034] 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).

[0035] A further embodiment of the door lock device according to the invention is defined in claim 11. 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.

[0036] A door according to the invention is defined in claim 12. 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.

[0037] A method according to the invention is defined in claim 13. 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

[0038]

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 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 the invention.

Fig. 11 shows an exploded view similar to that of Fig. 10 of another embodiment.

DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0039] 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.

[0040] An embodiment of a door lock device according

to 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 according to the invention. 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.

[0041] 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.

[0042] 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.

[0043] 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.

[0044] 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. 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.

[0045] 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.

[0046] 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.

[0047] 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.

[0048] 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.

[0049] 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.

[0050] 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.

[0051] 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.

[0052] 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.

[0053] 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.

[0054] 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.

[0055] 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.

[0056] 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.

[0057] 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).

[0058] 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.

[0059] 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.

[0060] 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 of 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.

[0061] 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.

[0062] 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. 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 alternative embodiment which differs from the embodiment 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 pressure 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 of 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. 10 and Fig. 11 thus illustrate different embodiments 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:

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 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 is 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 (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 (30),
wherein the first plate (51) comprises a second plate hole (54), arranged such that in a mounted state the second plate hole 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 (80) 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 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 (23) 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 (23) 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).

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 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 which comprises said first surface (62) constitutes one single solid part together with that portion of the first lock cylinder protection 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, wherein the second attachment means comprises at least two screws (65).

6. Door lock device according to any one of the preceding claims, comprising 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).

7. Door lock device according to claim 6, comprising:

a second lock cylinder protection (91) 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 said second lock cylinder protection (91) has a second recess (93), with a cross-sectional dimension adapted to receive a lock cylinder (40), which recess (93) extends from the second side (45) towards the first side (43) but not all the way to the first side, but where 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 from said second recess out through the first side (43), wherein the second lock cylinder protection hole (95) is configured such that in a mounted state a key via the second lock cylinder protection hole can interact with the lock cylinder (40) which is positioned in the second recess, either in that a 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, wherein the second lock cylinder protection (91) 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 second plate (52) around the third plate hole (55) and thus around the first door hole (21), wherein the first attachment means (64) also is intended to hold the second lock cylinder protection (91) attached at the door, wherein the first attachment means (64) is intended to exert a force on the second lock cylinder protection (91) in the direction towards the door such that through this force said 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 such that the second plate is held in position against the inside of the door,
wherein either

a) the second lock cylinder protection (91) 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 when the second lock cylinder protection (91) 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 second lock cylinder protection (91) and the lock case (23) which is mounted in the door such that in a mounted state that side of the 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 lock cylinder protection (91) is held attached at the door with the help of the first attachment means (64).

8. Door lock device according to claim 6, comprising 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 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 to the lock case (23) such that in a mounted state the lock turning mechanism 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 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 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.

9. Door lock device according to claim 8, 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 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 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).

10. Door lock device according to any one of the claims 6-9, 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 mean (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).

11. Door lock device according to claim 10, 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.

12. 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.

13. 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 1-11,
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 Schlosszylinder (40) so angeordnet sein soll, dass er sich von der Außenseite (31) der Tür in das erste Türloch (21) in der Richtung zu einem Schlosskasten (23) erstreckt, der in der Tür (30) so angeordnet ist, dass der Schlosszylinder (40) mit dem Schlosskasten (23) zusammenwirken kann, um das Schloss zu verriegeln und zu entriegeln, wobei die Türverriegelungsvorrichtung Folgendes 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 Schlosszylinderschutz (41) mit einer ersten Seite (43), die in einem montierten Zustand außerhalb der Türfläche und außerhalb der ersten Platte (51) liegt, einer zweiten Seite (45), die in einem montierten Zustand in der Tür (30) im ersten Türloch (21) liegt, wobei der erste Schlosszylinderschutz (41) eine erste Aussparung (47) mit einer Querschnittsabmessung aufweist, die dazu angepasst ist, einen Schlosszylinder (40) aufzunehmen, wobei sich die Aussparung von der zweiten Seite (45) zur ersten Seite (43), jedoch nicht den gesamten Weg zur ersten Seite erstreckt, wobei sich jedoch ein erstes Schlosszylinderschutzloch (49), das eine kleinere Querschnittsabmessung als die erste Aussparung (47) und als der Schlosszylinder (40) aufweist, aus der ersten Aussparung (47) hinaus durch die erste Seite (43) erstreckt, wobei das erste Schlosszylinderschutzloch (49) so gestaltet ist, dass in einem montierten Zustand ein Schlüssel durch das erste Schlosszylinderschutzloch (49) mit dem in der ersten Aussparung (47) positionierten Schlosszylinder (40) zusammenwirken kann, indem entweder der Schlüssel in ein Schlüsselloch (60) im Schlosszylinder (40) eingeführt wird oder der Schlüssel in einer anderen Weise mit dem Schlosszylinder (40) kommuniziert, wobei der erste Schlosszylinderschutz (41) eine erste Fläche (62) umfasst, die in einem montierten Zustand dazu gestaltet ist, unmittelbar oder durch ein oder mehrere weitere Elemente an der Fläche der ersten Platte (51) um das erste Plattenloch (53) und somit um das erste Türloch (21) anzuliegen,
ein erstes Befestigungsmittel (64), das dazu bestimmt ist, den ersten Schlosszylinderschutz (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 Schlosszylinderschutz (41) verbunden zu sein, ohne sich durch die erste Seite (43) des ersten Schlosszylinderschutzes (41) heraus zu erstrecken, wobei das erste Befestigungsmittel (64) dazu bestimmt ist, auf

den ersten Schlosszylinderschutz (41) in der Richtung zur Tür eine Kraft auszuüben, sodass durch diese Kraft die erste Fläche (62) eine Druckkraft gegen die erste Platte (51) in der Richtung zur Außenseite (31) der Tür ausübt, sodass die erste Platte (51) gegen die Außenseite der Tür in Position gehalten wird,
wobei entweder

a) der erste Schlosszylinderschutz (41) eine solche Länge aufweist, dass er in einem montierten Zustand eine Fläche des in der in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (45) an der Fläche des Schlosskastens (23) anliegt, wenn der erste Schlosszylinderschutz (41) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird, oder

b) die Türverriegelungsvorrichtung zumindest ein Abstandselement (66) umfasst, das dazu gestaltet ist, zwischen der zweiten Seite (45) des ersten Schlosszylinderschutzes (41) und dem in der Tür montierten Schlosskasten (23) angeordnet zu sein, sodass in einem montierten Zustand diejenige Seite des Abstandselements (66), die dem Schlosskasten (23) in der Tür zugewandt ist, eine Fläche des Schlosskastens (23) erreicht und an dieser Fläche anliegt, wenn der erste Schlosszylinderschutz (41) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird,

wobei die Türverriegelungsvorrichtung für eine Tür (30) gestaltet ist, die zudem ein zweites Türloch (22) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt, und in dem beispielsweise eine Drehvorrichtung (76) von einem Türgriff (78) so angeordnet sein soll, dass sie sich von der Außenseite (31) der Tür in das zweite Türloch (22) in der Richtung zu einem in der Tür angeordneten Schlosskasten (23) so erstreckt, 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 mit dem zweiten Türloch (22) deckt, und wobei die Türverriegelungsvorrichtung Folgendes umfasst:

ein erstes Stabilisierungselement (80) mit einer ersten Seite (82), die in einem montierten Zustand außerhalb der Türfläche und außerhalb der ersten Platte (51) liegt, einer zweiten Seite (84), die in einem montierten Zustand in der Tür im zweiten Türloch (22) liegt, wobei das erste Stabilisierungselement (80) eine erste Fläche (86) umfasst, die in einem montierten Zustand dazu gestaltet ist, unmittelbar oder durch ein oder mehrere Elemente an der Fläche der ersten Platte (51) um das zweite Plattenloch (54) und somit um das zweite Türloch (22) anzuliegen,
ein zweites Befestigungsmittel (65), das dazu bestimmt ist, das erste Stabilisierungselement (80) an der Tür befestigt zu halten, wobei das zweite Befestigungsmittel dazu bestimmt ist, sich von der Innenseite (32) der Tür zu erstrecken und mit dem ersten Stabilisierungselement (80) oder mit einem außerhalb des ersten Stabilisierungselements (80) angeordneten Element (87) verbunden zu sein, wobei das zweite Befestigungsmittel (65) dazu bestimmt ist, auf das erste Stabilisierungselement (80) in der Richtung zur Tür eine Kraft auszuüben, sodass durch diese Kraft die erste Fläche (86) des ersten Stabilisierungselements (80) eine Druckkraft gegen die erste Platte (51) in der Richtung zur Außenseite (31) der Tür ausübt, sodass 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 Fläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (84) an der Fläche des Schlosskastens (23) anliegt, wenn das erste Stabilisierungselement (80) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird,
oder

b) die Türverriegelungsvorrichtung zumindest ein Abstandselement (66) umfasst, das dazu gestaltet ist, zwischen der zweiten Seite (84) des ersten Stabilisierungselements (80) und dem in der Tür montierten Schlosskasten (23) angeordnet zu sein, sodass in einem montierten Zustand diejenige Seite des Abstandselements (66), die dem Schlosskasten (23) in der Tür zugewandt ist, eine Fläche des Schlosskastens (23) erreicht und an dieser Fläche anliegt, wenn das erste Stabilisierungselement (80) mit Hilfe des zweiten Be-

festigungsmittels (65) an der Tür befestigt gehalten wird.

2. Türverriegelungsvorrichtung nach Anspruch 1, wobei das erste Befestigungsmittel (64) zumindest zwei Schrauben umfasst, die in einem montierten Zustand mit dem ersten Schlosszylinderschutz (41) verbunden sind, indem sie in Gewindeschraubenlöcher (68) im ersten Schlosszylinderschutz (41) geschraubt werden, wobei sich die Gewindeschraubenlöcher (68) von der zweiten Seite (45) des ersten Schlosszylinderschutzes, jedoch nicht durch den gesamten ersten Schlosszylinderschutz (41) zu seiner ersten Seite (43) erstrecken.

3. Türverriegelungsvorrichtung nach einem der vorangehenden Ansprüche, wobei derjenige Abschnitt des ersten Schlosszylinderschutzes, der die erste Fläche (62) umfasst, zusammen mit demjenigen Abschnitt des ersten Schlosszylinderschutzes, der die erste Aussparung (47) umfasst, einen einzelnen Volumenkörper bildet.

4. Türverriegelungsvorrichtung nach einem der Ansprüche 1 - 2, wobei derjenige Abschnitt des ersten Schlosszylinderschutzes (41), der die erste Fläche (62) umfasst, einen Teil (70) bildet, dessen Position in einer Richtung, die, bei Betrachtung in einem montierten Zustand, im Wesentlichen senkrecht zur Fläche der Tür in Bezug auf denjenigen Abschnitt (72) des ersten Schlosszylinderschutzes (41), der die erste Aussparung (47) umfasst, einstellbar ist, wobei dieser einstellbare Teil (70) mit Hilfe eines Verriegelungsmittels (74), das in einem montierten Zustand von der Außenseite der Tür nicht zugänglich ist, in einer ausgewählten Position verriegelbar ist.

5. Türverriegelungsvorrichtung nach einem der vorangehenden Ansprüche, wobei das zweite Befestigungsmittel zumindest zwei Schrauben (65) umfasst.

6. Türverriegelungsvorrichtung nach einem der vorangehenden Ansprüche, umfassend 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.

7. Türverriegelungsvorrichtung nach Anspruch 6, umfassend:

einen zweiten Schlosszylinderschutz (91) mit einer ersten Seite (43), die in einem montierten Zustand innerhalb der Türfläche 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 im ersten Türloch (21) liegt, wobei der zweite Schlosszylinderschutz (91) eine zweite Aussparung (93) mit einer Querschnittsabmessung aufweist, die dazu angepasst ist, einen Schlosszylinder (40) aufzunehmen, wobei sich die Aussparung (93) von der zweiten Seite (45) zur ersten Seite (43), jedoch nicht den gesamten Weg zur ersten Seite erstreckt, wobei sich jedoch ein zweites Schlosszylinderschutzloch (95), das eine kleinere Querschnittsabmessung als die zweite Aussparung (93) und als der Schlosszylinder (40) aufweist, aus der zweiten Aussparung hinaus durch die erste Seite (43) erstreckt, wobei das zweite Schlosszylinderschutzloch (95) so gestaltet ist, dass in einem montierten Zustand ein Schlüssel durch das zweite Schlosszylinderschutzloch mit dem in der zweiten Aussparung positionierten Schlosszylinder (40) zusammenwirken kann, indem entweder der Schlüssel in ein Schlüsselloch (60) im Schlosszylinder (40) eingeführt wird oder der Schlüssel in einer anderen Weise mit dem Schlosszylinder kommuniziert, wobei der zweite Schlosszylinderschutz (91) eine erste Fläche (62) umfasst, die in einem montierten Zustand dazu gestaltet ist, unmittelbar oder durch ein oder mehrere Elemente an der Fläche der zweiten Platte (52) um das dritte Plattenloch (55) und somit um das erste Türloch (21) anzuliegen,
wobei das erste Befestigungsmittel (64) zudem dazu bestimmt ist, den zweiten Schlosszylinderschutz (91) an der Tür befestigt zu halten, wobei das erste Befestigungsmittel (64) dazu bestimmt ist, auf den zweiten Schlosszylinderschutz (91) in der Richtung zur Tür eine Kraft auszuüben, sodass durch diese Kraft die erste Fläche (62) des zweiten Schlosszylinderschutzes (91) eine Druckkraft gegen die zweite Platte (52) in der Richtung zur Innenseite (32) der Tür ausübt, sodass die zweite Platte gegen die Innenseite der Tür in Position gehalten wird,
wobei entweder

a) der zweite Schlosszylinderschutz (91) eine solche Länge aufweist, dass er in einem montierten Zustand eine Fläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (45) an der Fläche des Schlosskastens anliegt, wenn der zweite Schlosszylinderschutz (91) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird, oder
b) die Türverriegelungsvorrichtung zumindest ein Abstandselement (66) umfasst, das dazu gestaltet ist, zwischen der zweiten Seite (45) des zweiten Schlosszylinderschutzes (91) und dem in der Tür montierten

Schlosskasten (23) angeordnet zu sein, sodass in einem montierten Zustand diejenige Seite des Abstandselements, die dem Schlosskasten (23) in der Tür zugewandt ist, eine Fläche des Schlosskastens erreicht und an dieser Fläche anliegt, wenn der zweite Schlosszylinderschutz (91) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird.

8. Türverriegelungsvorrichtung nach Anspruch 6, umfassend einen Schlossdrehmechanismus (100), der dazu in der Lage sein soll, das Schloss von der Innenseite der Tür ohne Verwenden eines Schlüssels zu verriegeln, wobei die Türverriegelungsvorrichtung Folgendes umfasst:

ein Halteelement (101) mit einer ersten Seite (43), die in einem montierten Zustand innerhalb der Türfläche 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 im ersten Türloch (21) liegt, wobei sich in einem montierten Zustand der Schlossdrehmechanismus (100) durch das Halteelement zum Schlosskasten (23) erstreckt, sodass in einem montierten Zustand der Schlossdrehmechanismus zum Verriegeln und Entriegeln des Schlosses mit dem Schlosskasten (23) zusammenwirken kann, wobei das Halteelement (101) eine erste Fläche umfasst, die in einem montierten Zustand dazu gestaltet ist, unmittelbar oder durch ein oder mehrere Elemente an der Fläche der zweiten Platte (52) um das dritte Plattenloch (55) und somit um das erste Türloch (21) anzuliegen,
wobei das erste Befestigungsmittel (64) zudem dazu bestimmt ist, das Halteelement (101) an der Tür befestigt zu halten, wobei das erste Befestigungsmittel dazu bestimmt ist, auf das Halteelement (101) in der Richtung zur Tür eine Kraft auszuüben, sodass durch diese Kraft die erste Fläche des Halteelements eine Druckkraft gegen die zweite Platte (52) in der Richtung zur Innenseite (32) der Tür ausübt, sodass die zweite Platte (52) gegen die Innenseite der Tür in Position gehalten wird.

9. Türverriegelungsvorrichtung nach Anspruch 8, wobei entweder

a) das Halteelement (101) eine solche Länge aufweist, dass es in einem montierten Zustand eine Fläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (45) an der Fläche des Schlosskastens anliegt, wenn das Halteelement (101) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird,
oder
b) die Türverriegelungsvorrichtung zumindest ein Abstandselement (66) umfasst, das dazu gestaltet ist, zwischen der zweiten Seite (45) des Halteelements (101) und dem in der Tür montierten Schlosskasten (23) angeordnet zu sein, sodass in einem montierten Zustand diejenige Seite des Abstandselements, die dem Schlosskasten (23) in the Tür zugewandt ist, eine Fläche des Schlosskastens erreicht und an dieser Fläche anliegt, wenn das Halteelement (101) mit Hilfe des ersten Befestigungsmittels (64) an der Tür befestigt gehalten wird.

10. Türverriegelungsvorrichtung nach einem der Ansprüche 6 - 9, die für eine Tür gestaltet ist, die zudem ein zweites Türloch (22) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt und in dem beispielsweise eine Drehvorrichtung (76) von einem Türgriff (78) so angeordnet sein soll, dass sie sich von der Innenseite (32) der Tür in das zweite Türloch (22) in der Richtung zu einem in der Tür angeordneten Schlosskasten (23) so erstreckt, 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 Folgendes umfasst:

ein zweites Stabilisierungselement (110) mit einer ersten Seite (82), die in einem montierten Zustand innerhalb der Türfläche 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 im zweiten Türloch (22) liegt, wobei das zweite Stabilisierungselement (110) eine erste Fläche (86) umfasst, die in einem montierten Zustand dazu gestaltet ist, unmittelbar oder durch ein oder mehrere Elemente an der Fläche der zweiten Platte (52) um das vierte Plattenloch (56) und somit um das zweite Türloch (22) 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 sein, wobei das zweite Befestigungsmittel (65) dazu bestimmt ist, auf das zweite Stabilisierungselement (110) in der Richtung zur Tür eine Kraft auszuüben,

sodass durch diese Kraft die erste Fläche (86) des zweiten Stabilisierungselements (110) eine Druckkraft gegen die zweite Platte (52) in der Richtung zur Innenseite (32) der Tür ausübt, sodass 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 Fläche des in der Tür montierten Schlosskastens (23) erreicht und mit seiner zweiten Seite (84) an der Fläche des Schlosskastens anliegt, wenn das zweite Stabilisierungselement (110) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird,
oder
b) die Türverriegelungsvorrichtung zumindest ein Abstandselement (66) umfasst, das dazu gestaltet ist, zwischen der zweiten Seite (84) des zweiten Stabilisierungselements und dem in der Tür montierten Schlosskasten (23) angeordnet zu sein, sodass in einem montierten Zustand diejenige Seite des Abstandselements, die dem Schlosskasten (23) in der Tür zugewandt ist, eine Fläche des Schlosskastens erreicht und an dieser Fläche anliegt, wenn das zweite Stabilisierungselement (110) mit Hilfe des zweiten Befestigungsmittels (65) an der Tür befestigt gehalten wird.

11. Türverriegelungsvorrichtung nach Anspruch 10, wobei die erste Platte (51) und die zweite Platte (52) abgesehen von dem ersten (53), zweiten (54), dritten (55) und vierten (56) Plattenloch keinerlei Löcher aufweist, die so positioniert sind, dass sie für Schrauben bestimmt sind, die 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.

12. Tür (30), umfassend zumindest 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 Schlosszylinder (40), der so angeordnet ist, dass er sich von der Außenseite (31) der Tür in das erste Türloch (21) in der Richtung zu dem in der Tür angeordneten Schlosskasten (23) so erstreckt, dass der Schlosszylinder (40) mit dem Schlosskasten (23) zusammenwirken kann, um das Schloss zu verriegeln und zu entriegeln, wobei die Tür zudem eine Türverriegelungsvorrichtung nach einem der vorangehenden Ansprüche umfasst, wobei die Türverriegelungsvorrichtung bestimmungsgemäß an der an der Tür montiert ist.

13. Verfahren zur Montage einer Türverriegelungskonstruktion an einer Tür (30), die zumindest ein erstes Türloch (21) aufweist, das sich von der Außenseite (31) der Tür zur Innenseite (32) der Tür erstreckt, wobei das Verfahren Folgendes umfasst:

Bereitstellen eines Schlosskastens (23), zumindest eines Schlosszylinders (40) und einer Türverriegelungsvorrichtung nach einem der Ansprüche 1-11,
Anordnen des Schlosskastens (23) in der Tür in Höhe des ersten Türlochs (21),
Anordnen des Schlosszylinders (40) in der ersten Aussparung (47) im ersten Schlosszylinderschutz (41),
bestimmungsgemäßes Anordnen der Türverriegelungsvorrichtung an der Tür.

Revendications

1. Dispositif de verrouillage de porte configuré pour une porte (30) dotée d'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 et dans lequel un barillet de serrure (40) est conçu pour être agencé de manière à s'étendre à partir de l'extérieur (31) de la porte dans le premier trou de porte (21) dans la direction vers un boîtier (23) qui est agencé dans la porte (30) de sorte que le barillet de serrure (40) peut interagir avec le boîtier (23) afin de verrouiller et déverrouiller la serrure, dans lequel le dispositif de verrouillage de porte comprend :

une première plaque (51) dotée d'un premier trou de plaque (53), ladite plaque (51) étant conçue pour venir buter 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) dotée d'un premier côté (43), qui dans un état monté repose à l'extérieur de la surface de porte et à l'extérieur de la première plaque (51), d'un second côté (45), qui dans un état monté repose dans la porte (30) dans ledit premier trou de porte (21), dans lequel ladite première protection de cylindre de barillet (41) comprend un premier évidement (47), présentant une dimension transversale adaptée à recevoir un barillet de serrure (40), ledit évidement s'étendant à partir du second côté (45) en direction du premier côté (43) mais pas tout le long jusqu'au premier côté, mais où un premier trou de protection de barillet de serrure (49) qui présente une dimension transversale inférieure à celle du premier évidement (47) et à celle du barillet de

serrure (40) s'étend à partir du premier évidement (47) à travers le premier côté (43), dans lequel le premier trou de protection de barillet de serrure (49) est configuré de sorte que dans un état monté une clé via le premier trou de protection de barillet de serrure (49) peut interagir avec le barillet de serrure (40) qui est positionné dans le premier évidement (47), soit en ce que la clé est insérée dans un trou de clé (60) dans le barillet de serrure (40) soit 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 autres éléments, venir buter 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) conçu pour maintenir la première protection de barillet de serrure (41) fixée au niveau de la porte, ledit premier moyen de fixation (64) étant conçu 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 s'étendre à travers le premier côté (43) de la première protection de barillet de serrure (41), dans lequel le premier moyen de fixation (64) est conçu 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 soit

a) la première protection de barillet de serrure (41) présente une longueur telle que dans un état monté elle atteint une surface du boîtier (23) qui est monté dans la porte et vient buter avec son second côté (45) contre la surface du boîtier (23) lorsque la première protection de barillet de serrure (41) est maintenue fixée au niveau de la porte à l'aide du premier moyen de fixation (64),
soit
b) le dispositif de verrouillage de porte comprend au moins un élément de distance (66) configuré pour être agencé entre le second côté (45) de la première protection de barillet de serrure (41) et le boîtier (23) qui est monté dans la porte de sorte que dans un état monté ce côté dudit élément de distance (66) qui fait face au boîtier (23) dans la porte atteint une surface du boîtier (23) et vient buter contre cette surface lorsque la première protection de barillet de serrure (41) est maintenue fixée au niveau de la porte à l'aide du premier moyen de fixation (64),

dans lequel le dispositif de verrouillage de porte est configuré pour une porte (30) qui comprend également un second trou de porte (22) qui s'étend à partir de l'extérieur (31) de la porte vers l'intérieur (32) de la porte, et dans lequel par exemple un dispositif de rotation (76) à partir d'une poignée de porte (78) est conçu pour être agencé de manière à s'étendre à partir de l'extérieur (31) de la porte dans le second trou de porte (22) dans la direction vers un boîtier (23) qui est agencé dans la porte de sorte que le dispositif de rotation (76) peut interagir avec le boîtier (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 coïncide avec le second trou de porte (22), et dans lequel le dispositif de verrouillage de porte comprend :

un premier élément de stabilisation (80) doté d'un premier côté (82), qui dans un état monté repose à l'extérieur de la surface de porte et à l'extérieur de la première plaque (51), d'un second côté (84), qui dans un état monté repose dans la porte dans le second trou de porte (22), dans lequel le premier élément de stabilisation (80) comprend une première surface (86) qui dans un état monté est configurée pour, directement ou via un ou plusieurs autres éléments, venir buter 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) conçu pour maintenir le premier élément de stabilisation (80) fixé au niveau de la porte, ledit second moyen de fixation étant conçu pour s'étendre à partir de l'intérieur (32) de la porte et pouvant être raccordé au premier élément de stabilisation (80), ou doté d'un élément (87) agencé en externe du premier élément de stabilisation (80), dans lequel le second moyen de fixation (65) est conçu 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 con-

tre l'extérieur de la porte,

dans lequel soit

a) le premier élément de stabilisation (80) présente une longueur telle que dans un état monté il atteint une surface du boîtier (23) qui est monté dans la porte et vient buter avec son second côté (84) contre la surface du boîtier (23) lorsque le premier élément de stabilisation (80) est maintenu fixé au niveau de la porte à l'aide du second moyen de fixation (65),
soit
b) le dispositif de verrouillage de porte comprend au moins un élément de distance (66) configuré pour être agencé entre le second côté (84) du premier élément de stabilisation (80) et le boîtier (23) qui est monté dans la porte de sorte que dans un état monté ce côté dudit élément de distance (66) qui fait face au boîtier (23) dans la porte atteint une surface du boîtier (23) et vient buter contre cette surface lorsque le premier élément de stabilisation (80) est maintenu fixé au niveau de la porte à l'aide du second moyen de fixation (65).

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), lesdits trous de vis filetés (68) s'étendant à partir du second côté (45) de la première protection de barillet de serrure mais pas à travers toute la première protection de barillet de serrure (41) vers son premier côté (43).

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 qui comprend ladite première surface (62) constitue une seule partie solide conjointement avec cette partie de la première protection de barillet de serrure qui comprend ledit premier évidement (47).

4. Dispositif de verrouillage de porte selon l'une quelconque des revendications 1-2, 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 vu 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 à partir de l'extérieur de la porte.

5. Dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, dans lequel le second moyen de fixation comprend au moins deux vis (65).

6. Dispositif de verrouillage de porte selon l'une quelconque des revendications précédentes, comprenant une seconde plaque (52) dotée d'un troisième trou de plaque (55), ladite plaque (52) étant conçue pour venir buter contre l'intérieur (32) de la porte de sorte que le troisième trou de plaque (55) coïncide avec le premier trou de porte (21).

7. Dispositif de verrouillage de porte selon la revendication 6, comprenant :

une seconde protection de barillet de serrure (91) dotée d'un premier côté (43), qui dans un état monté repose à l'intérieur de la surface de porte sur l'intérieur (32) de la porte et l'intérieur de la seconde plaque (52), d'un second côté (45), qui dans un état monté repose dans la porte dans ledit premier trou de porte (21), dans lequel ladite seconde protection de barillet de serrure (91) comprend un second évidement (93), présentant une dimension transversale adaptée à recevoir un barillet de serrure (40), ledit évidement (93) s'étendant à partir du second côté (45) en direction du premier côté (43) mais pas tout le long vers le premier côté, mais où un second trou de protection de barillet de serrure (95) qui présente une dimension transversale inférieure à celle du second évidement (93) et à celle du second barillet de serrure (40) s'étend à partir dudit second évidement à travers le premier côté (43), dans lequel le second trou de protection de barillet de serrure (95) est configuré de sorte que dans un état monté une clé via le second trou de protection de barillet de serrure peut interagir avec le barillet de serrure (40) qui est positionné dans le second évidement, soit en ce qu'une clé est insérée dans un trou de clé (60) dans le barillet de serrure (40) soit en ce que la clé communique d'une autre manière avec le barillet de serrure, dans lequel la seconde protection de barillet de serrure (91) comprend une première surface (62) qui dans un état monté est configurée pour, directement ou via un ou plusieurs autres éléments, venir buter contre la surface de la seconde plaque (52) autour du troisième trou de plaque (55) et ainsi autour du premier trou de porte (21),
dans lequel le premier moyen de fixation (64)

est également conçu pour maintenir la seconde protection de barillet de serrure (91) fixée au niveau de la porte, dans lequel
le premier moyen de fixation (64) est conçu pour exercer une force sur la seconde protection de barillet de serrure (91) dans la direction vers la porte que sorte que par le biais de cette force ladite première surface (62) de la seconde protection de barillet de serrure (91) 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 est maintenue en position contre l'intérieur de la porte,
dans lequel soit

a) la seconde protection de barillet de serrure (91) présente une longueur telle que dans un état monté elle atteint une surface du boîtier (23) qui est monté dans la porte et vient buter avec son second côté (45) contre la surface du boîtier lorsque la seconde protection de barillet de serrure (91) est maintenue fixée au niveau de la porte à l'aide du premier moyen de fixation (64),
soit
b) le dispositif de verrouillage de porte comprend au moins un élément de distance (66) configuré pour être agencé entre le second côté (45) de la seconde protection de barillet de serrure (91) et le boîtier (23) qui est monté dans la porte de sorte que dans un état monté ce côté de l'élément de distance qui fait face au boîtier (23) dans la porte atteint une surface du boîtier et vient buter contre cette surface lorsque la seconde protection de barillet de serrure (91) est maintenue fixée au niveau de la porte à l'aide du premier moyen de fixation (64).

8. Dispositif de verrouillage de porte selon la revendication 6, comprenant
un mécanisme de rotation de serrure (100) conçu pour pouvoir verrouiller et déverrouiller la serrure à partir de l'intérieur de la porte sans utiliser de clé, dans lequel le dispositif de verrouillage de porte comprend :

un élément de maintien (101) doté d'un premier côté (43), qui dans un état monté repose à l'intérieur de la surface de porte sur l'intérieur (32) de la porte et l'intérieur de la seconde plaque (52), d'un second côté (45), qui dans un état monté repose dans la porte dans ledit premier trou de porte (21), dans lequel dans un état monté le mécanisme de rotation de serrure (100) s'étend à travers l'élément de maintien vers le boîtier (23) de sorte que dans un état monté le mécanisme de rotation de serrure peut interagir avec le boîtier (23) pour verrouiller et déverrouiller la serrure, dans lequel l'élément de maintien (101) comprend une première surface qui dans un état monté est configurée pour, directement ou via un ou plusieurs autres éléments, venir buter contre la surface de la seconde plaque (52) autour du troisième trou de plaque (55) et ainsi autour du premier trou de porte (21),
dans lequel le premier moyen de fixation (64) est également conçu pour maintenir l'élément de maintien (101) fixé au niveau de la porte, dans lequel le premier moyen de fixation est conçu pour exercer une force sur l'élément de maintien (101) dans la direction vers la porte de sorte que par le biais de cette force ladite première surface de l'élément de maintien 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.

9. Dispositif de verrouillage de porte selon la revendication 8,
dans lequel soit

a) l'élément de maintien (101) présente une longueur telle que dans un état monté il atteint une surface du boîtier (23) qui est monté dans la porte et vient buter avec son second côté (45) contre la surface du boîtier lorsque l'élément de maintien (101) est maintenu fixé au niveau de la porte à l'aide du premier moyen de fixation (64),
soit
b) le dispositif de verrouillage de porte comprend au moins un élément de distance (66) configuré pour être agencé entre le second côté (45) de l'élément de maintien (101) et le boîtier (23) qui est monté dans la porte de sorte que dans un état monté ce côté de l'élément de distance qui fait face au boîtier (23) dans la porte atteint une surface du boîtier et vient buter contre cette surface lorsque l'élément de maintien (101) est maintenu fixé au niveau de la porte à l'aide du premier moyen de fixation (64).

10. Dispositif de verrouillage de porte selon l'une quelconque des revendications 6-9, configuré pour une porte qui comprend également un second trou de porte (22) qui s'étend à partir de l'extérieur (31) de la porte vers l'intérieur (32) de la porte, et dans lequel par exemple un dispositif de rotation (76) à partir d'une poignée de porte (78) est conçu pour être agencé de manière à s'étendre à partir de l'intérieur (32) de la porte dans le second trou de porte (22) dans la direction vers un boîtier (23) qui est agencé dans la porte de sorte que le dispositif de rotation

(76) peut interagir avec le boîtier (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 verrouillage de porte comprend :

un second élément de stabilisation (110) doté d'un premier côté (82), qui dans un état monté repose à l'intérieur de la surface de porte sur l'intérieur (32) de la porte et l'intérieur de la seconde plaque (52), d'un second côté (84), qui dans un état monté repose 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 autres éléments, venir buter 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) conçu pour maintenir le second élément de stabilisation (110) fixé au niveau de la porte, ledit second moyen de fixation (65) étant conçu pour s'étendre à partir de l'intérieur (32) de la porte et être raccordé au second élément de stabilisation (110), ou doté d'un élément (111) agencé à l'intérieur du second élément de stabilisation (110), dans lequel le second moyen de fixation (65) est conçu pour exercer une force sur le second élément de stabilisation (110) dans la direction vers la porte que 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 soit

a) le second élément de stabilisation (110) présente une longueur telle que dans un état monté il atteint une surface du boîtier (23) qui est monté dans la porte et vient buter avec son second côté (84) contre la surface du boîtier lorsque le second élément de stabilisation (110) est maintenu fixé au niveau de la porte à l'aide du second moyen de fixation (65),
soit
b) le dispositif de verrouillage de porte comprend au moins un élément de distance (66) configuré pour être agencé entre le second côté (84) du second élément de stabilisation et le boîtier (23) qui est monté dans la porte de sorte que dans un état monté ce côté dudit élément de distance qui fait face au boîtier (23) dans la porte atteint une surface du boîtier et vient buter contre cette surface lorsque le second élément de stabilisation (110) est maintenu fixé au niveau de la porte à l'aide du second moyen de fixation (65).

11. Dispositif de verrouillage de porte selon la revendication 10, dans lequel ladite première plaque (51) et ladite seconde plaque (52) à l'exception desdits premier (53), deuxième (54), troisième (55) et quatrième (56) trous de plaque ne comprennent pas de trous positionnés de manière à être conçus pour des vis qui sont destinées à maintenir les plaques (51, 52) fixées au niveau de la porte sans s'étendre vers ou à travers le boîtier (23) qui est agencé dans la porte.

12. Porte (30) comprenant 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, un boîtier (23) qui est agencé dans la porte à niveau avec le premier trou de porte (21) et un barillet de serrure (40) qui est agencé de manière à s'étendre à partir de l'extérieur (31) de la porte dans le premier trou de porte (21) dans la direction vers le boîtier (23) qui est agencé dans la porte de sorte que le barillet de serrure (40) peut interagir avec le boîtier (23) afin de verrouiller et déverrouiller la serrure, 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 au niveau de la porte.

13. Procédé de montage d'une structure de serrure de porte au niveau d'une porte (30) qui comprend 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, ledit procédé comprenant les étapes consistant à :

fournir un boîtier (23), au moins un barillet de serrure (40) et un dispositif de verrouillage de porte selon l'une quelconque des revendications 1-11,
agencer le boîtier (23) dans la porte à 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 au niveau de la porte.

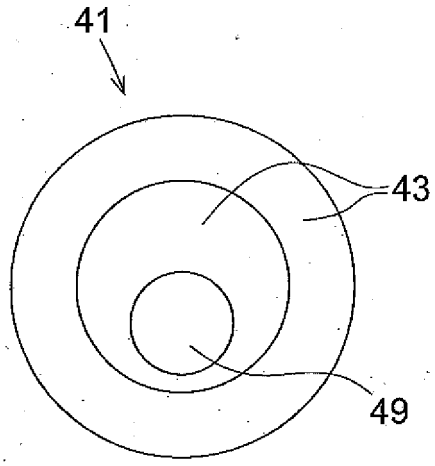


Fig. 1

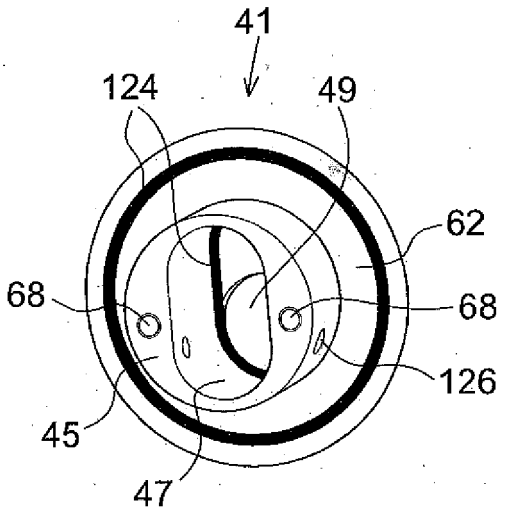


Fig. 2

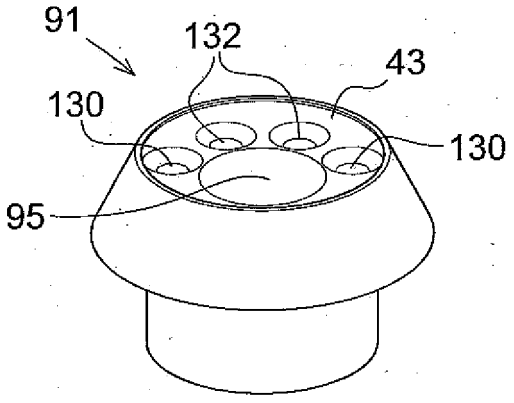


Fig. 3

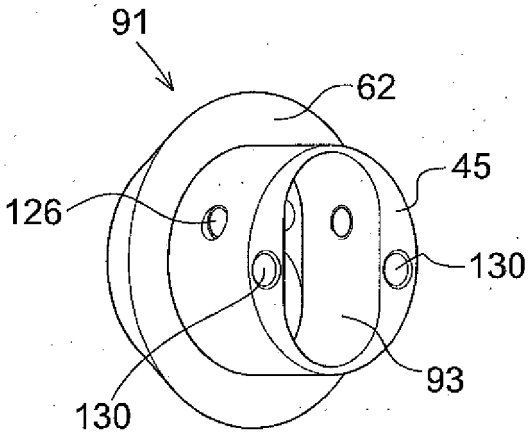


Fig. 4

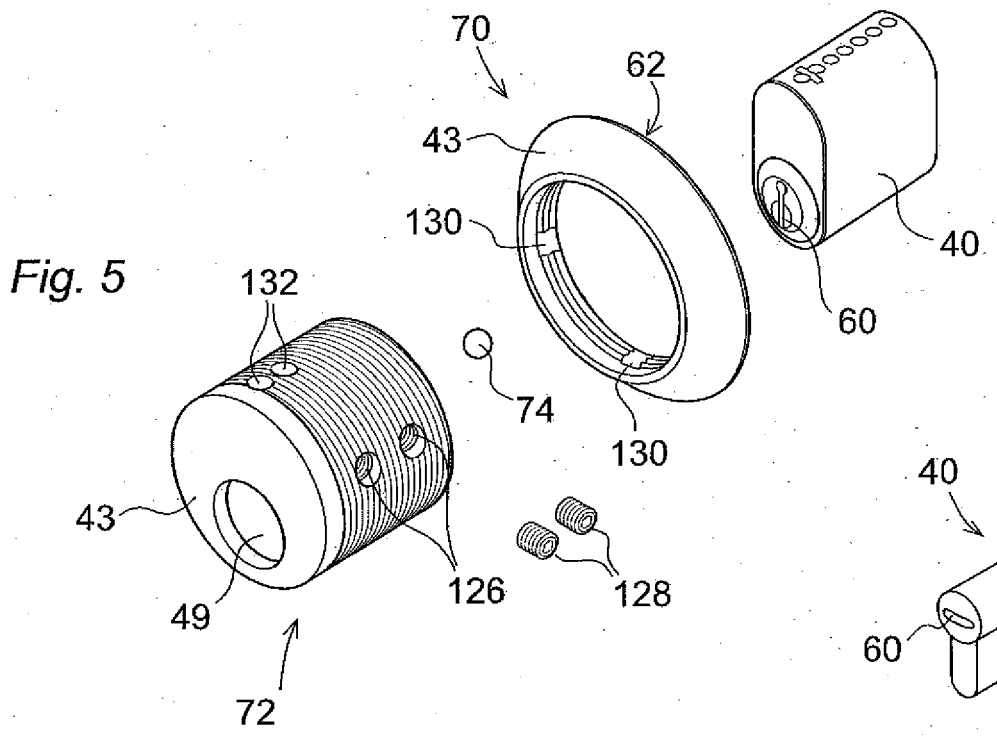


Fig. 5

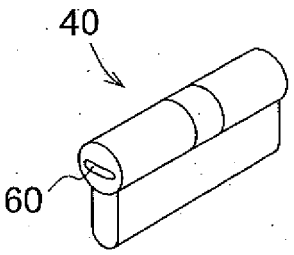


Fig. 6

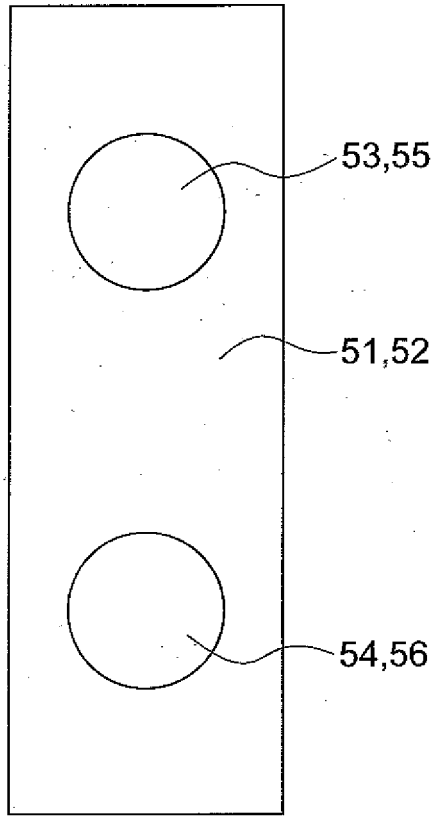


Fig. 7

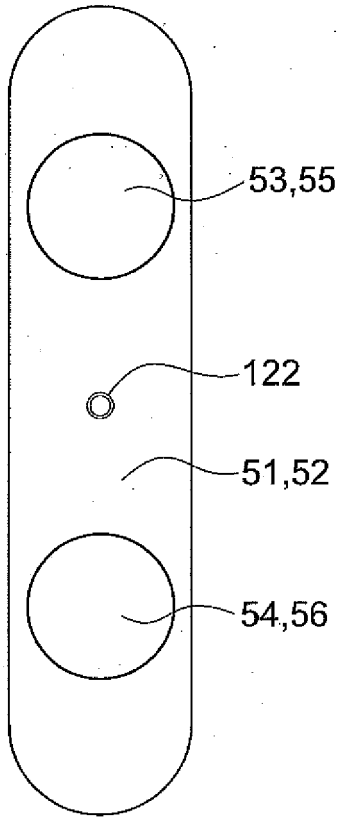


Fig. 8

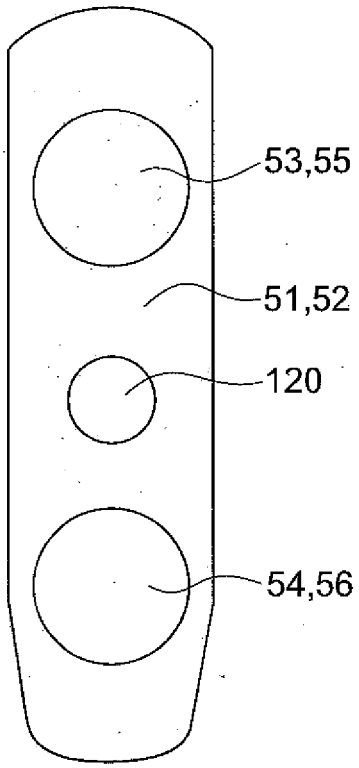
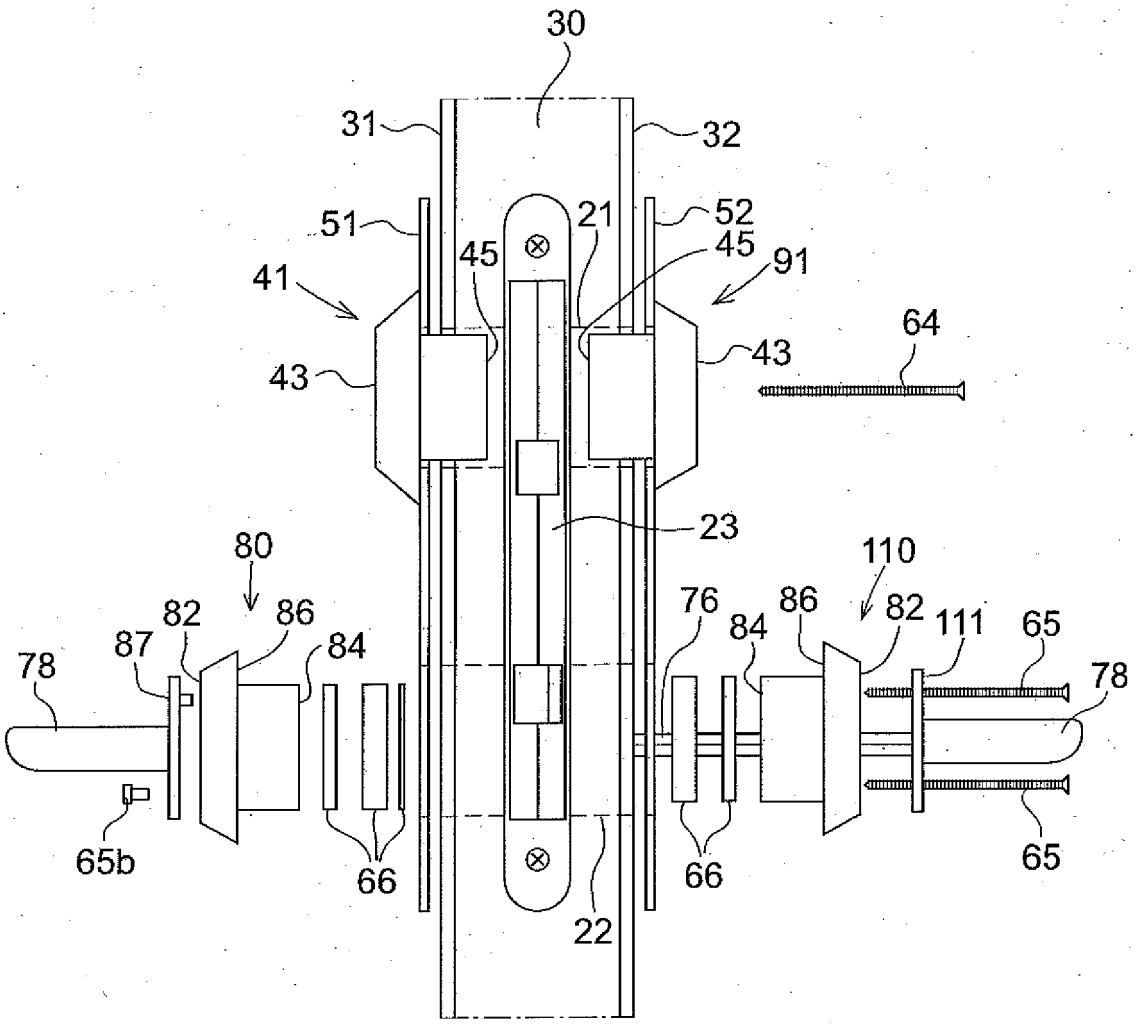


Fig. 9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65b
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65
22

Fig. 10

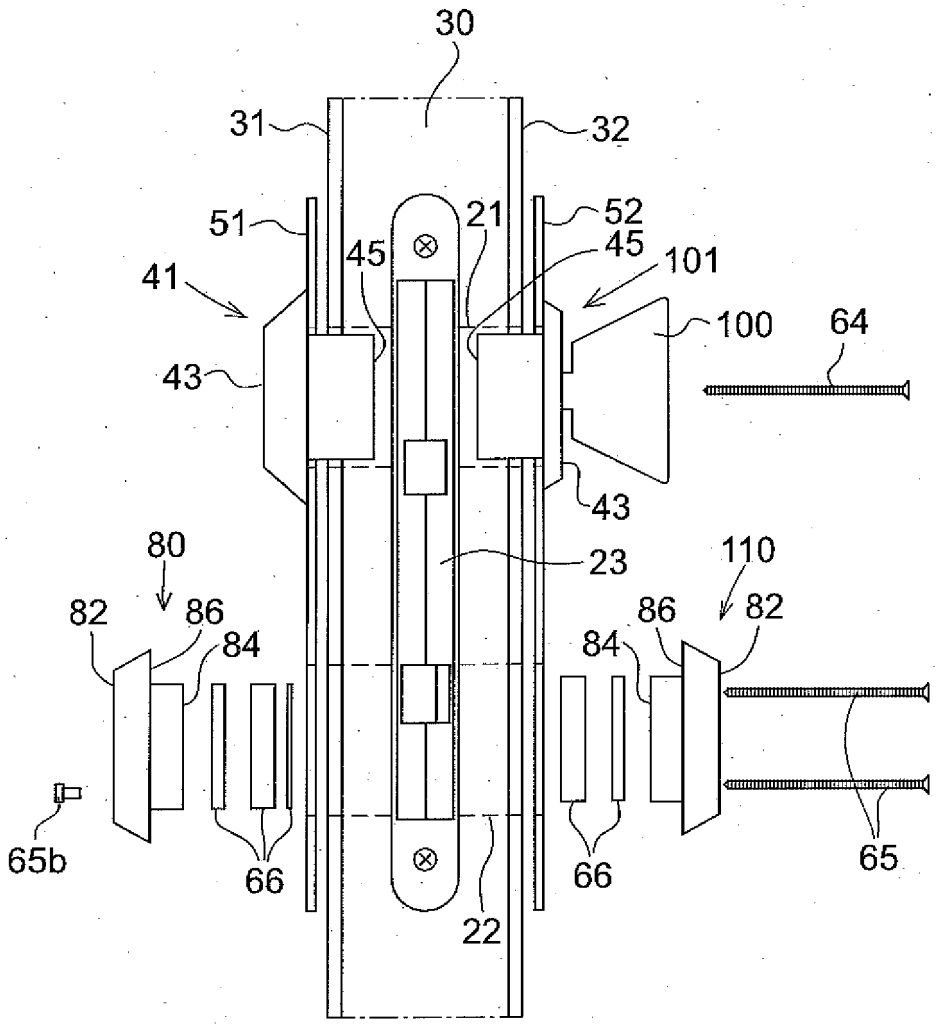
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Fig. 11

REFERENCES CITED IN THE DESCRIPTION

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- WO 8201733 A1 **[0003]**

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- *Det inbrottssäkra låsskyddet är här,* 12 August 2010, http://web.archive.org/web/20100812014958 **[0004]**