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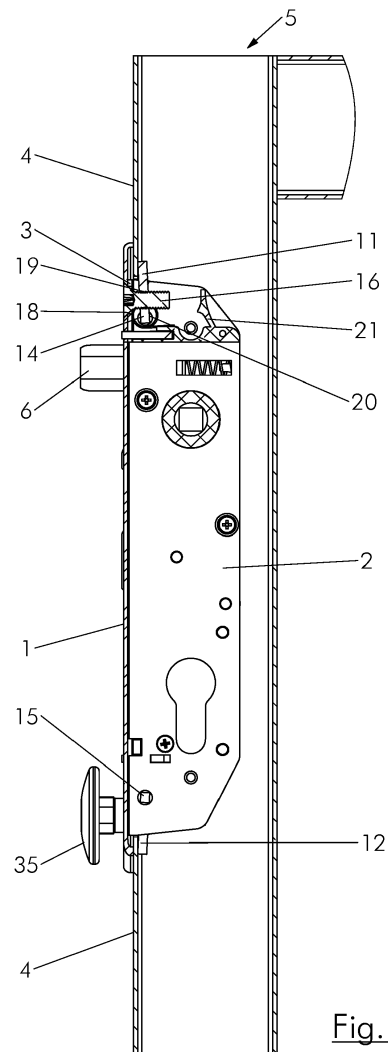
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(54) **DOOR LOCK FIXTURE ARRANGED TO BE MOUNTED ONTO A TUBULAR MEMBER**

(57) The door lock fixture, in particular the mortice lock, comprises a faceplate (1) and a lock body (2) which is configured to be inserted through a slot (3) in a tubular member (5). In order to enable to fix the faceplate (1) by means of at least one bolt (16) against the wall (4) of the tubular member (5), the lock comprises further at least one clamping lever (11) which is pivoted onto the lock body (2) between a retracted position, wherein the lock body (2) can be inserted through said slot (3) into the tubular member (5), and an extended position, wherein the clamping lever (11) engages the inner surface of the wall (4) of the tubular member (5) to clamp this wall (4) between the faceplate (1) and the clamping lever (11). The clamping lever (11) is provided with a screw threaded hole (19) wherein said bolt (16) can be screwed through an opening (18) in the faceplate (1) to fix the lock strongly and reliably onto the tubular member (5) and this independent of the wall thickness thereof.



**Fig. 8**

## Description

**[0001]** The present invention relates to a door lock fixture which comprises a faceplate and a fixture body and which is configured to be mounted with its fixture body through a slot in a wall portion of a tubular member, with the faceplate of the fixture being configured to engage an outer surface of said wall portion of the tubular member and to be fixed to said wall portion by means of at least one bolt which is applied through an opening in said faceplate.

**[0002]** The door lock fixture is in particular a mortice lock or a keep for a door lock. The word "door" is used in the present specification to embrace all kinds of closure members such as doors, having a full door panel, and gates. The door can either be a hinged or a sliding closure member.

**[0003]** EP-B-2 186 974 discloses a mortice lock which is arranged to be mounted onto a tubular member of for example a garden gate. This mortice lock comprises a latch bolt which is operable by means of two handles and a dead bolt which is operable by means of a key operated lock cylinder. The lock itself consists of a lock body and of a faceplate which is fixed thereto by means of two bolts. To mount the lock onto the tubular member, the lock body is inserted through a slot which is cut in a wall portion of the tubular member until the faceplate engages the outer surface of this wall portion. Above and below the slot a hole is made in the wall of the tubular member. By means of two self-tapping screws/bolts, which are applied through openings in the faceplate into the respective holes in the tubular member, the lock is fixed to the tubular member.

**[0004]** A drawback of such a fixation system is that the holes for the self-tapping screws/bolts have to be made in the correct position in a lateral wall of the tubular member. This position has to be determined quite accurately since in the front and the back walls of the tubular member holes are made for the lock cylinder and the handles. Since the handle shaft and the lock cylinder extend entirely through the tubular member, the position of the lock within the tubular member is fixed by these elements. The holes for the self-tapping screws/bolts and for the lock cylinder and the handles have thus to be made in the right mutual positions which is not so easy since these holes are situated on three different sides of the tubular member.

**[0005]** A further drawback of the fixation system of this prior art lock is that the slot for the lock body and the holes for the handles and the lock cylinder have to be made in the tubular member before it is coated with a protective coating so that also at the location of this slot and these holes the coating remains intact. The tubular member is for example painted or galvanised to protect it against oxidation. However, even when making first the holes in the tubular member before coating it, the coating layer is damaged at the location of the holes when screwing the self-tapping screws/bolts into these holes in the

tubular member.

**[0006]** Still a further drawback of this know fixation system is that the screw threads of commercial screws generally do not start directly from the head of the screws. Consequently, since the faceplate is clamped directly against the relatively thin wall of the tubular member and since the holes in the faceplate have to be countersunk to receive the heads of the screws/bolts, the faceplate has to be quite thick. Such a thick faceplate is not only more expensive but is also less aesthetic.

**[0007]** A final drawback of the prior art fixation system is that, due to the limited thickness of the wall of the tubular member, which comprises in practice for example only 1 to 1.5 mm, a strong fixation is or cannot always be obtained. In particular when tensioning the screws too strongly into the holes, the holes in the tubular member may even be damaged so that the required grip of the screws in the holes is lost. Drilling new holes in the tubular member is not possible since the location of the holes for the screws is determined completely by the position of the holes for the handles and the lock cylinder.

**[0008]** WO 2007/009998 discloses a bolt and plug fixation system which enables to fix for example a keep for a lock to a tubular member. This fixation system enables to achieve a strong fixation. A drawback of this fixation system is however that the holes for the bolts need to be drilled again in the correct location. Moreover, it is relatively expensive due to the milling steps required to make especially the metal plug part.

**[0009]** In order to avoid having to drill holes in the lateral wall of the tubular member for fixing the faceplate thereto, US 2012/0034021 proposes to provide snap-fitting tabs right behind the faceplate on the lock body. When pushing the lock into the tubular member, these tabs snap behind the wall portion of the tubular member that surrounds the slot through which the lock is inserted into the tubular member so that the lock is automatically fixed to the tubular member.

**[0010]** A drawback such an automatic fixation system is that the lock is not always solidly fixed to the tubular member since the distance between the faceplate and the snap-fitting tabs should generally be somewhat larger than the thickness of the wall of the tubular member to enable the tabs to snap behind the wall of the tubular member. Moreover, the thickness of this wall may vary quite considerably in particular due to the coating material which is applied onto the tubular member. This coating material can indeed run off somewhat and accumulate in particular in the form of droplets at the edges of the slot. When this occurs, it may become problematic to mount the lock onto the tubular member. As a matter of fact, at the location of such droplets, the wall of the tubular member would be too thick to enable the snap-fitting tabs to snap behind this wall to fix the lock in the tubular member.

**[0011]** A further drawback of this prior art automatic fixation system is that once the lock has been snap-fitted into the tubular member, it is no longer possible to remove

it, for example when it needs to be oiled or when it is broken and should be replaced.

**[0012]** An object of the present invention is therefore to provide a new door lock fixture which can be fixed strongly and reliably into a slot in a tubular member and this independent of the wall thickness of the tubular member.

**[0013]** To this end, the fixture according to the invention is characterised in that comprises at least one clamping lever which is movably mounted onto the fixture body between a retracted position, wherein the fixture body can be inserted through said slot into the tubular member, and an extended position, wherein the clamping lever is arranged to engage an inner surface of said wall portion of the tubular member to clamp said wall portion between the faceplate and the clamping lever, the clamping lever being provided with a screw threaded hole which is axially aligned with said opening in the faceplate in the extended position of the clamping lever and which is arranged to receive said bolt.

**[0014]** Since the bolt used to fix the fixture in the tubular member is screwed in the screw threaded hole in the clamping lever, it can be tightened strongly so that the wall of the tubular member is clamped strongly and reliably between the faceplate and the clamping lever. The functioning of the clamping lever is hereby not affected by the thickness of the wall of the tubular member. The clamping lever does not hamper the insertion of the body of the fixture into the tubular member since it is held in its retracted position when the fixture is inserted into the tubular member.

**[0015]** In a preferred embodiment of the door lock fixture according to the invention, said clamping lever is pivoted about a pivot axis onto the fixture body between said retracted position and said extended position, which pivot axis is preferably substantially parallel to said faceplate.

**[0016]** In this embodiment, the clamping lever can simply pivot within the tubular member from its retracted to its extended position until it engages the inner surface of the wall of the tubular member.

**[0017]** In a further preferred embodiment of the door lock fixture according to the invention, it comprises a spring for urging the clamping lever towards its extended position.

**[0018]** In this way, once inserted in the tubular member, the clamping lever has only to be released to be brought automatically by the spring into its extended position.

**[0019]** The fixture preferably comprises a latch for holding the clamping lever in its retracted position.

**[0020]** By simply actuating this latch, the clamping lever is released and is brought by the spring into its extended position. Actuation of the latch can for example be done through the hole for the bolt in the faceplate.

**[0021]** Alternatively, the lock may comprise a removable locking element which holds the clamping lever in its retracted position and which is in particular inserted

through said opening in the faceplate to engage the clamping lever.

**[0022]** By simply removing this locking element, in particular by simply pulling this locking element through the opening in the faceplate out of the lock, the clamping lever is released and moves under the action of said spring in the tubular member until it projects behind the inner surface of the wall of the tubular member. In this position, the bolt can be inserted through said opening in the faceplate in the fixture and can be screwed in the screw threaded hole in the clamping lever to clamp the wall of the tubular member strongly between the faceplate of the fixture and the clamping lever.

**[0023]** Other particularities and advantages of the invention will become apparent from the following description of some particular embodiments of a mortice lock and of a keep according to the present invention. The reference numerals used in this description relate to the annexed drawings wherein:

Figure 1 shows a perspective view of a first embodiment of a mortice lock according to the invention and of a gate with a tubular member wherein the lock is to be mounted;

Figure 2 shows a same perspective view as Figure 1 with the lock inserted in the tubular member of the gate;

Figure 3 shows a side elevation view on the lock inserted in the tubular member, with a portion of the tubular member and of the frame of the lock being cut away;

Figure 4 is a detail of Figure 3 and shows the clamping lever of the fixation system held by the latch in its retracted position;

Figures 5 and 6 are the same views as Figures 3 and 4 but showing the latch in its unlatching position; Figure 7 is a same view as Figures 3 and 5 but showing the clamping lever in its extended position wherein it engages the inner surface of the tubular member; Figure 8 is a same view as Figure 7 but showing moreover a bolt screwed into the clamping lever to clamp the wall of the tubular member between the faceplate and the clamping lever of the lock;

Figure 9 is a perspective view on the lock being installed on the gate;

Figure 10 is a same perspective view as Figure 1 but shows the lock with an alternative system for holding the clamping levers in their retracted position;

Figures 11 to 13 are detail views of the mortice lock as illustrated in Figure 10 showing the clamping lever respectively in its retracted position, in its extended position and in its position wherein the wall of the tubular member is clamped by means of a bolt between the clamping lever and the faceplate of the lock;

Figure 14 is a same perspective view as Figures 1 and 10 but shows the lock with an alternative fixation

system;

Figures 15 to 17 are detail views of the mortice lock as illustrated in Figure 14 showing the clamping lever respectively in its retracted position, in its extended position wherein it is released by the latch and in its position wherein the wall of the tubular member is clamped by means of a bolt between the clamping lever and the faceplate of the lock;

Figure 18 shows a perspective view of a door lock keep according to the invention and of a poste or a leave of a double gate with a tubular member wherein the keep is to be mounted; and

Figures 19 to 21 are detail views showing the clamping lever of the fixation system of the door lock keep respectively in its retracted position, in its extended position and in its position wherein the wall of the tubular member is clamped by means of a bolt between the clamping lever and the faceplate of the keep.

**[0024]** The invention generally relates to a door lock fixture which comprises a faceplate 1 and a fixture body. The door lock fixture can in particular be a mortice lock or a door lock keep which comprises a portion that is recessed in the support onto which it is mounted. This support can either be a fixed poste or a leave of a double door or gate. The term mortice lock is used to indicate that the body 2 of the lock, i.e. the lock body 2, is to be inserted in a recess in a closure member.

**[0025]** The invention will now first be explained in detail with reference to a mortice lock. The mortice lock of the present invention is configured to be mounted with its lock body 2 through a slot 3 in a wall portion 4 of a tubular member 5. This tubular member 5 is part of a gate, as illustrated for example in Figure 1, or of a door or any other type of hinged closure member.

**[0026]** The locking mechanism of the lock can be of any type. It may comprises a latch bolt 6 which is operated by means of handles 7, a deadbolt 8 which is operated by means of a key in particular through the intermediary of a lock cylinder 29 (for example a eurocylinder), or it may comprise a combination of a latch bolt 6 and a deadbolt 8 as in the embodiments illustrated in the drawings. Usually the latch bolt 6 and the deadbolt 8 are slidably mounted in the lock to slide between a retracted and an extended position. In the embodiments illustrated in the drawings, the deadbolt 8 is however hook-shaped and pivots in the lock between its extended and its retracted positions. The lock illustrated in the drawings is in particular a lock as disclosed in EP 2 186 974. Further details about this lock can thus be found in this prior art patent which is incorporated herein by way of reference.

**[0027]** An essential difference between the lock illustrated in EP 2 186 974 and the lock according to the present invention is the way wherein the lock is fixed in the tubular member 5. The lock according to the present invention comprises at least one clamping lever which is movably mounted onto the lock body 2 between a re-

tracted position and an extended position. In the embodiment illustrated in the drawings, the lock body 2 comprises a front cover plate 9 and a back cover plate 10 which enclose the lock mechanism and which project at the top and at the bottom beyond this lock mechanism to provide space for the clamping levers, i.e. for a first clamping lever 11 at the uppermost extremity of the lock body 2 and a second clamping lever 12 at the lowermost extremity of the lock body 2. Both clamping levers 11, 12 are in the form of a plate which fits transversally between the projecting portions of the front and the back cover plates 9, 10 and which has at one extremity two opposite projections. In the embodiment illustrated in Figures 1 to 13, these projections are received in holes 13 in the front and the back cover plates 9, 10 so that the two clamping levers 11, 12 can pivot about a first pivot axis 14 and respectively about a second pivot axis 15 with respect to the cover plates 9, 10. Both pivot axes 14, 15 are substantially parallel to the faceplate 1. They preferably extend moreover substantially perpendicularly to the front and the back cover plates 9, 10 of the lock body 2.

**[0028]** In the positions illustrated in Figures 1 to 4 and 10 to 11 the two clamping levers 11, 12 are held in a retracted position, more particularly in a position wherein they are retracted into the lock body 2, i.e. between the front and the back cover plates 9, 10, so that the lock can be inserted easily with its lock body 2 through the slot 3 into the tubular member 5. In its retracted position, the clamping lever 11, 12 therefore does not project out of the lock body 2. Each of the clamping levers 11, 12 can pivot about its pivot axis 14, 15 from this retracted position to an extended position wherein they project out of the lock body 2 to engage the inner surface of the wall portion 4 of the tubular member 5 that surrounds the slot 3 therein. This extended position is illustrated in Figures 7 and 12. In this extended position, the clamping levers 11, 12 project respectively above and below the lock body 2 to engage the inner surface of the wall 4 of the tubular member 5. In this position, the wall 4 of the tubular member 5 can be clamped between the faceplate 1 and the clamping levers 11, 12 by means of bolts 16, 17 so that the faceplate 1 of the lock is fixed to the wall 4 of the tubular member 5. The bolts 16, 17 are applied through openings 18 in the faceplate 1 and are screwed into screw threaded holes 19 in the clamping levers 11, 12. To enable to screw the bolts 16, 17 in the screw threaded holes 19 in the clamping levers 11, 12, these screw threaded holes 19 are axially aligned with the openings 18 in the faceplate 1 in the extended position of the clamping levers 11, 12.

**[0029]** The lock preferably comprises a spring, in particular a torsion spring 20, for urging the clamping lever 11, 12 towards its extended position. In this way, the clamping lever 11, 12 has only to be held in its retracted position when inserting the lock body 2 into the tubular member 5. Once inserted, the clamping lever 11, 12 can be released so that the clamping lever 11, 12 is automatically brought by the spring 20 into its extended position.

**[0030]** The clamping lever 11, 12 could for example be

held in its retracted position by means of a rubber band applied around the lock body 2. Such a rubber band could be pushed off the lock body 2 through one of the openings 18 in the faceplate 1, or could be cut through these openings 18, which is however not so easy and may require appropriate tools. Moreover, the rubber band can break when inserting the lock in the tubular member 5, especially when there is only a small gap between the lock body 2 and the slot 3 in the tubular member 5, or can break as such when stored for some time especially in day light so that problems arise when having to insert the lock in the tubular member 5.

**[0031]** In order to avoid such problems, the lock comprises in the first embodiment, which is illustrated in Figures 1 to 9, for each of the clamping levers 11, 12 a latch 21 which is configured to hold the respective clamping lever 11, 12 in its retracted position. As can be seen in Figure 4, the latch 21 has a hook shaped portion 22 which engages the clamping lever 11, 12 to hold it in its retracted position. In the embodiment illustrated in the drawings, the latch 21 is made of a flexible material so that it can be flexed to release the clamping lever 11, 12. Alternatively, the latch 21 could also be hinged onto the lock body 2.

**[0032]** To enable to release the clamping lever 11, 12 when the lock body 2 is inserted in the tubular member 5, the latch 21 comprises a distal extremity 23 which projects from the hook shaped portion 22 of the latch 21. By simply pushing onto this distal extremity 23, the clamping lever 11, 12 is released and is pivoted automatically by the torsion spring 20 until it engages the inner surface of the wall 4 of the tubular member 5. As illustrated in Figure 6, the latch 21 can be actuated to release the clamping lever 11, 12 by means of any thin, elongated tool 24, for example a screw driver, an Allan key or simply a nail or any other rod-like element, through the opening 18 provided for the bolt 16, 17 in the faceplate 1. A passage 25 is indeed provided in the lock between the opening 18 in the faceplate 1 and the latch 21 to enable to actuate the latch 21 by means of an elongated tool 24 through this opening 18 to release the clamping lever 11, 12.

**[0033]** In the second embodiment, illustrated in Figures 10 to 13, the lock comprises for each of the clamping levers 11, 12 a removable locking element 26 which holds the clamping lever 11, 12 in its retracted position. This removable locking element 26 is inserted through the opening 18 in the faceplate 1 into the lock body 2 to engage the clamping lever 11, 12. The illustrated locking element 26 is in the form of a peg which is pushed into the opening 18 of the faceplate 1 so as to be clamped therein. The locking element 26 comprises more particularly a compressible portion 27 which has an outer diameter which is somewhat larger than the inner diameter of the opening 18 and which is arranged to be pushed through the opening 18 to fix the locking element 26 within the opening 18. The locking element 26 has, opposite to the compressible portion 27 a thicker portion 28 which

projects out of the lock and which can be easily gripped to remove the locking element 26 from the lock. As illustrated in Figure 12, when released, the clamping lever 11, 12 is pivoted by the torsion spring 20 to engage the inner surface of the wall 4 of the tubular member 5. In this position, the bolt 16, 17 can be screwed into the clamping lever 11, 12, which is illustrated in Figure 13.

**[0034]** An alternative embodiment of the clamping levers 11, 12, wherein they are slidably mounted onto the lock body 2, is illustrated in Figures 15 to 17. In this embodiment, both clamping levers 11, 12 are again in the form of a plate which fits transversally between the projecting portions of the front and the back cover plates 9, 10 and which has at one extremity two opposite projections. These projections have a non-circular cross-section, in particular a square cross-section as can be seen in Figure 14, and are received in opposite slots 36 in the front and back cover plates 9, 10 so that the clamping levers 11, 12 can slide up and down substantially in the longitudinal direction of the faceplate 1. In the extended positions of the clamping levers 11, 12, the projections arrive into an enlarged section of the slots 36 so that they can pivot somewhat with respect to the faceplate 1. They are however prevented from pivoting away from the faceplate 1 by the latches 21. The springs 20 for urging the clamping levers 11, 12 in this embodiment towards their extended positions are compression springs instead of torsion springs.

**[0035]** The latches 21 are configured to hold the respective clamping lever 11, 12 in its retracted position. As can be seen in Figure 15, the latches 21 have a hook shaped portion 22 which engages the clamping lever 11, 12 to hold it in its retracted position. The latches 21 are made of a flexible material so that they can be flexed to release the clamping levers 11, 12. This can be done in the same way as illustrated in Figure 6 with a tool 24 that can be inserted through the openings 18 in the faceplate 1. When the latches 21 are pushed away from the clamping levers 11, 12 they are pushed, as illustrated in Figure 16, by the compression springs 20 into their extended positions. In these positions, the wall 4 of the tubular member 5 can be clamped between the faceplate 1 and the clamping levers 11, 12 by means of bolts 16, 17 so that the faceplate 1 of the lock is fixed to the wall 4 of the tubular member 5. The bolts 16, 17 are applied through the openings 18 in the faceplate 1 and are screwed into the screw threaded holes 19 in the clamping levers 11, 12. To enable to screw the bolts 16, 17 in the screw threaded holes 19 in the clamping levers 11, 12, these screw threaded holes 19 are axially aligned with the openings 18 in the faceplate 1 in the extended position of the clamping levers 11, 12.

**[0036]** As described hereabove, the clamping levers 11, 12 can pivot in their extended positions in the widened sections of the slots 36 so that they can be easily drawn by the bolts 16, 17 against the wall 4 of the tubular member 5. This tightened position is illustrated in Figure 17.

**[0037]** In the embodiments illustrated in Figures 1 to

17, the lock body 2 fits with some play at the top and/or at the bottom in the slot 3 in the tubular member. This play is enabled by the fact that the faceplate 1 of the lock does no longer have to be fixed to the tubular members by means of screws/bolts which have to be screwed into holes in the lateral wall 4 of the tubular member 5 but is fixed by clamping the wall 4 of the tubular member 5 between the clamping levers 11, 12 and the faceplate 1. Due to the clearance between the lock body 2 and the slot 3, the lock body 2 can thus be inserted easily into the tubular member 5. Moreover, for mounting the handles 7 and the lock cylinder 29 onto the lock inserted in the tubular member 5, holes 30 and 31 are made in the front and the back sides of the tubular member 5. Furthermore, two smaller holes 32 are applied in the front and the back sides of the tubular member 5 for enabling to fix the cover shields 33 of the lock by means of screws 34 to the tubular member. Due to the play between the lock body 2 and the slot 3 in the tubular member, the slot 3 does not have to be applied very accurately in the right position relative to the holes 30 - 32 in the front and the back sides of the tubular member 5.

**[0038]** In the embodiments illustrated in the drawings, the openings 18 for the bolts 16, 17 are provided in the faceplate 1 at the level of the lock body 2. This means that in the installed position of the lock, the bolts 16, 17 extend through the faceplate 1 into the lock body 2. Since the slot 3 is even somewhat larger than the lock body 2, the bolts 16, 17 extend through the slot 3 so that no separate holes have to be made in the wall 4 of the tubular member 5 for the bolts 16, 17.

**[0039]** For mounting the lock onto the tubular member 5, the lock is first applied with its lock body 2 through the slot 3 into the tubular member 5. The clamping levers 11, 12 can then be released so that the lock is held in position by the clamping levers 11, 12 which are urged by the torsion springs 20 against the wall 4 of the tubular member 5. The handles 7, lock cylinder 29 and cover shields 33 can then be mounted onto the front and the back sides of the tubular member 5. During this mounting phase, the lock can still be moved up or down somewhat in the slot 3 to align the lock body correctly with respect to the holes 30 and 31 for the handles 7 and the lock cylinder 29 in the tubular member 5. Finally, the lock can be solidly fixed by screwing the bolts 16, 17 in the screw threaded holes 19 in the clamping levers 11, 12.

**[0040]** Due to the fact that the bolts 16, 17 can be screwed strongly in the clamping levers 11, 12, these bolts can also be used to fix additional accessories to the tubular member 5. As shown in Figures 7 to 9, one of these bolts, namely the lowermost bolt 17, can for example be used to fix an additional security device 35, which has the shape of a mushroom, to the tubular member 5. As disclosed in detail in EP-B-1 600 584, which is included herein by way of reference, such a mushroom security device 35 may hook behind a portion of the keeper device when closing the door or gate so that the bolts of the lock cannot be forced out of the keeper device by forcing the

lock and the keeper device away from one another, for example by means of a crowbar. This requires of course a reliable and strong fixation of the security device 35 to the tubular member 5.

**[0041]** The fixation systems with the clamping levers 11, 12 which are held in their retracted positions by means of the latches 21 or the removable locking elements 26 can also be applied to a door lock keep which comprises, as illustrated in Figure 18, again a faceplate 1 and a keep body 37. Just like the lock body 2, the keep body 37 extends in the mounted position of the keep through a slot 3 into a tubular member 5. In the embodiment illustrated in Figures 18 to 21, the same fixation system as in the embodiment of the lock illustrated in Figures 1 to 9 is used. This fixation system comprises the two clamping levers 11, 12 which are pivoted about the pivot axes 14, 15 onto the keep body 37 and which are held by the latches 21, as illustrated in Figure 19, in their retracted position. By pushing the latches 21 through the openings 18 in the faceplate 1 away from the clamping levers 11, 12, the clamping levers 11, 12 are released and are pivoted by the torsion springs 20 against the inner surface of the wall portion 4 of the tubular member 5. This position is shown in Figure 20. The keep can then be fixed by means of the bolts 16, 17 which are screwed through the openings 18 in the faceplate 1 into the clamping levers 11, 12 so that the wall 4 of the tubular member 5 is clamped between the faceplate 1 and the clamping levers 11, 12 (see Figure 21).

**[0042]** For a skilled person, it will be clear that, within the scope of protection as defined in the appendant claims, further modifications can be applied to the locks as described hereabove.

**[0043]** In particular, one of the two clamping levers 11, 12 can be omitted, for example the lowermost one, and can be replaced by a gap between the faceplate 1 and the fixture body 2, illustrated for example in Figure 3 of US 2012/0034021, so that the fixture can first be slid with this gap at the bottom edge of the slot 3 over the lateral wall 4 of the tubular member 5, after which the fixture body can be pivoted about this edge of the slot 3 into the tubular member 5.

## 45 Claims

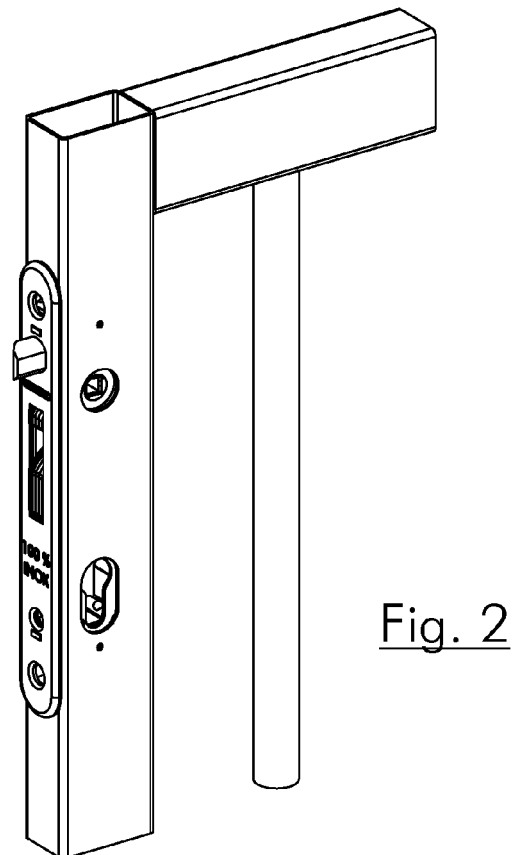
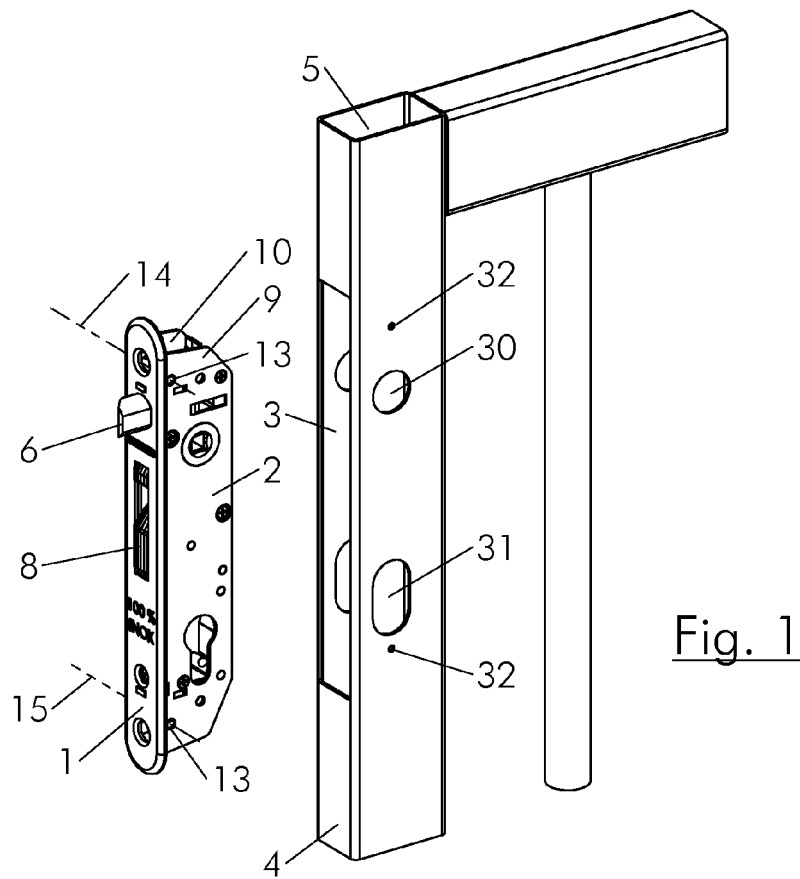
1. A door lock fixture which comprises a faceplate (1) and a fixture body (2, 37) and which is configured to be mounted with its fixture body (2, 37) through a slot (3) in a wall portion (4) of a tubular member (5), with the faceplate (1) of the fixture being configured to engage an outer surface of said wall portion (4) of the tubular member (5) and to be fixed to said wall portion (4) by means of at least one bolt (16, 17) which is applied through an opening (18) in said faceplate (1),  
**characterised in that**  
the fixture comprises at least one clamping lever (11,

12) which is movably mounted onto the fixture body (2, 37) between a retracted position, wherein the fixture body (2, 37) can be inserted through said slot (3) into the tubular member (5), and an extended position, wherein the clamping lever (11, 12) is arranged to engage an inner surface of said wall portion (4) of the tubular member (5) to clamp said wall portion (4) between the faceplate (1) and the clamping lever (11, 12), the clamping lever (11, 12) being provided with a screw threaded hole (19) which is axially aligned with said opening (18) in the faceplate (1) in the extended position of the clamping lever (11, 12) and which is arranged to receive said bolt (16, 17).

2. A door lock fixture according to claim 1, **characterised in that** said clamping lever (11, 12) is pivoted about a pivot axis (14, 15) onto the fixture body (2, 37) between said retracted position and said extended position.
3. A door lock fixture according to claim 2, **characterised in that** said pivot axis (14, 15) is substantially parallel to said faceplate (1).
4. A door lock fixture according to claim 1, **characterised in that** said clamping lever (11, 12) is slidably mounted onto the fixture body (2, 37) between said retracted position and said extended position.
5. A door lock fixture according to any one of the claims 1 to 4, **characterised in that** it comprises a spring (20) for urging the clamping lever (11, 12) towards its extended position.
6. A door lock fixture according to any one of the claims 1 to 5, **characterised in that** it comprises a latch (21) for holding the clamping lever (11, 12) in its retracted position.
7. A door lock fixture according to claim 6, **characterised in that** said latch (21) has a hook shaped portion (22) which engages the clamping lever (11, 12) to hold it in its retracted position.
8. A door lock fixture according to claim 6 or 7, **characterised in that** a passage (25) is provided in the fixture body (2, 37) between said opening (18) and said latch (21) to enable to actuate the latch (21) to release the clamping lever (11, 12).
9. A door lock fixture according to any one of the claims 1 to 5, **characterised in that** it comprises a removable locking element (26) which holds the clamping lever (11, 12) in its retracted position.
10. A door lock fixture according to claim 9, **characterised in that** said removable locking element (26) is

inserted through said opening (18) in the faceplate (1) to engage the clamping lever (11, 12).

11. A door lock fixture according to any one of the claims 1 to 10, **characterised in that** the fixture comprises two clamping levers (11 and 12), in particular said clamping lever (11) which is movably mounted on the fixture body at a first extremity of the fixture body and a further clamping lever (12) which is movably mounted on the fixture body at a second extremity of the fixture body (2) which is situated opposite to said first extremity.
12. A door lock fixture according to any one of the claims 1 to 11, **characterised in that** it is a mortice lock.
13. A door lock fixture according to any one of the claims 1 to 11, **characterised in that** it is a keep for a door lock.
14. A door lock fixture according to any one of the claims 1 to 13, **characterised in that** it is mounted onto said tubular member (5), with said at least one bolt (16, 17) extending into the screw threaded hole (19) in the clamping lever (11, 12) to clamp said wall portion (4) of the tubular member (5) between the faceplate (1) of the fixture and the clamping lever (11, 12).
15. A door lock fixture according to claim 14, **characterised in that** said at least one bolt (16, 17) extends through said slot (3) into the screw threaded hole (19) in the clamping lever (16, 17).





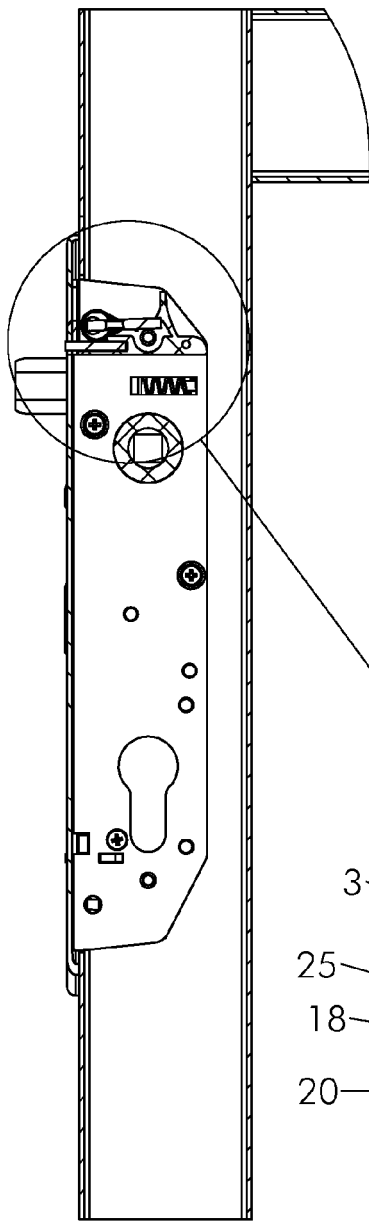


Fig. 3

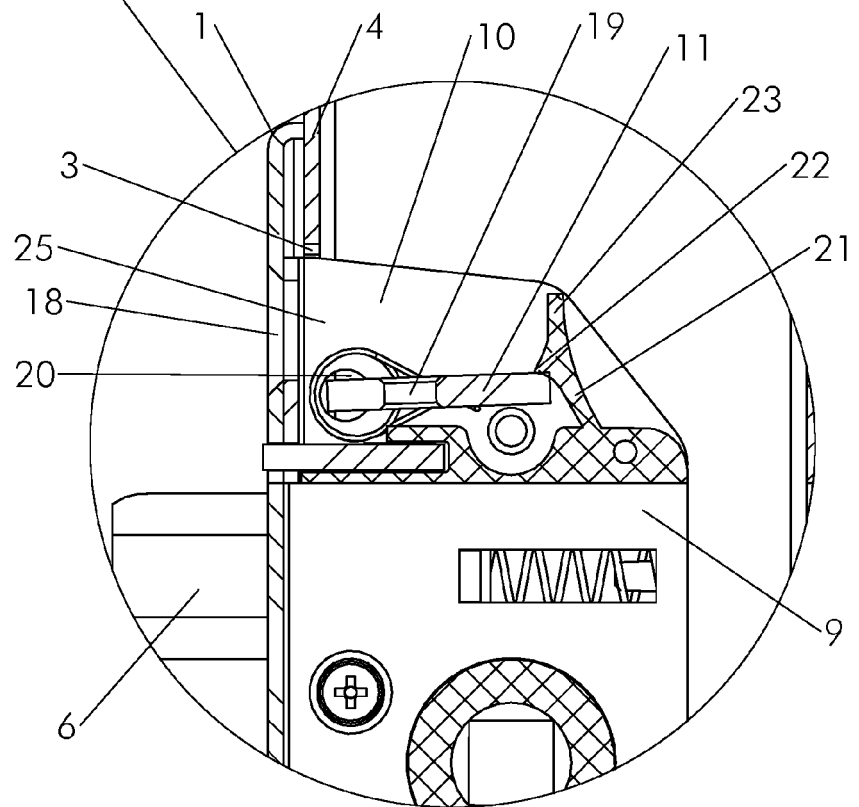


Fig. 4

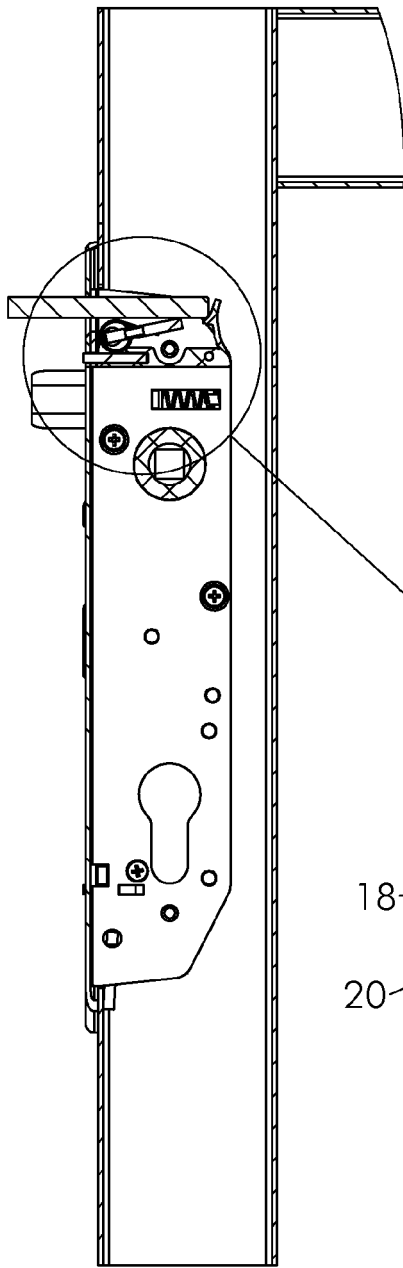


Fig. 5

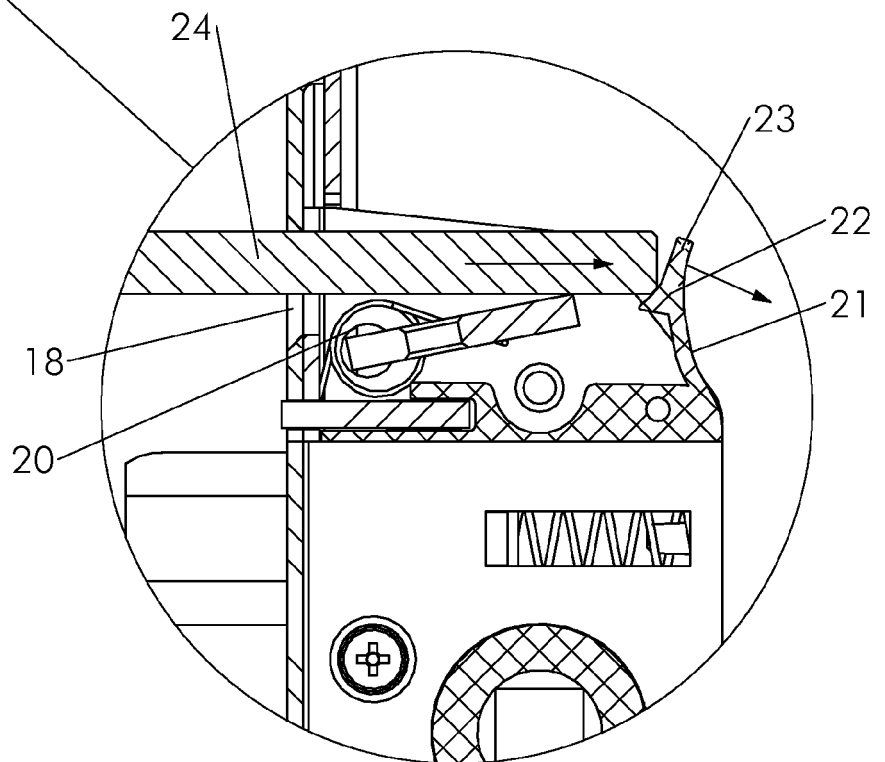
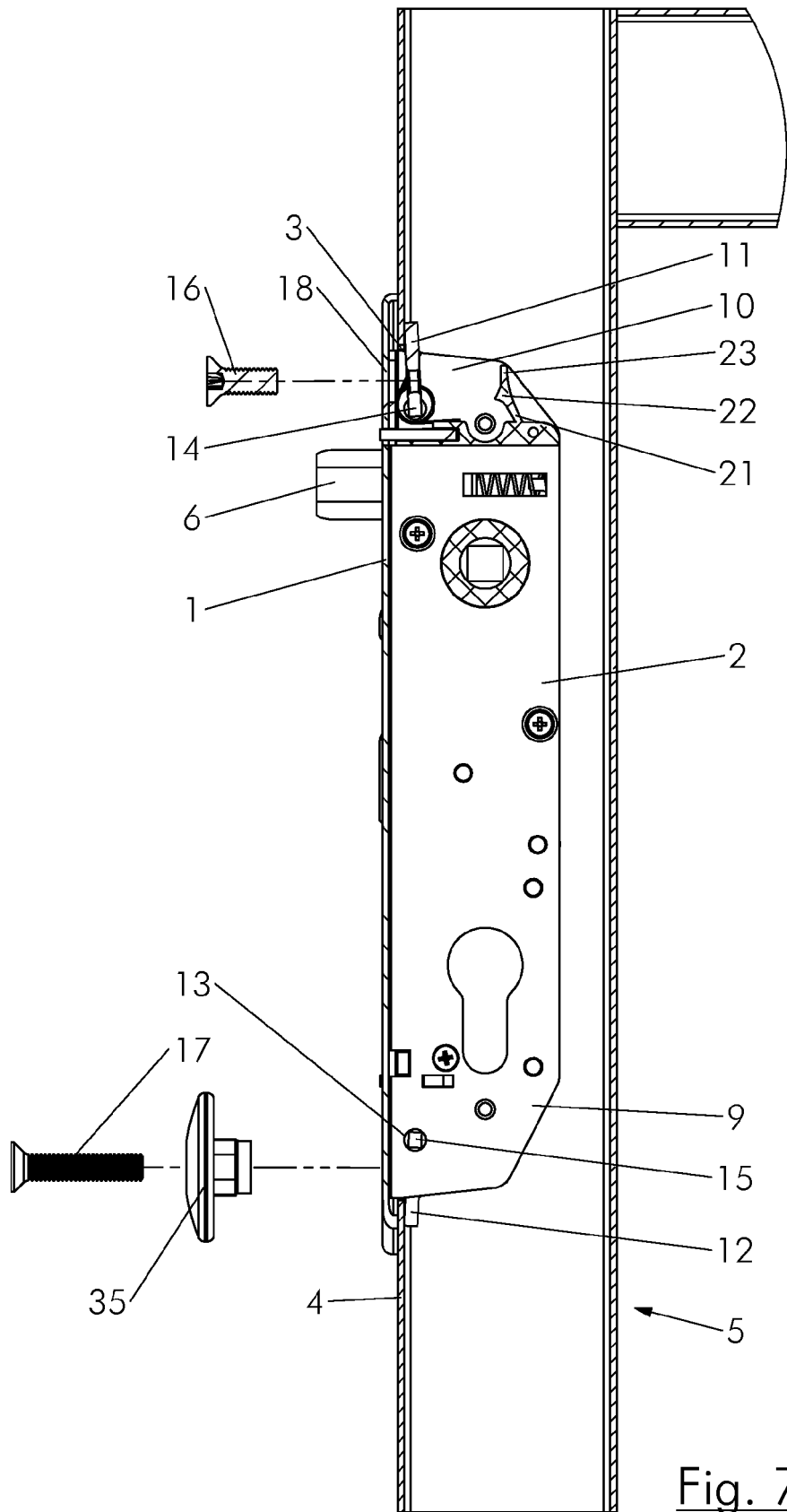


Fig. 6



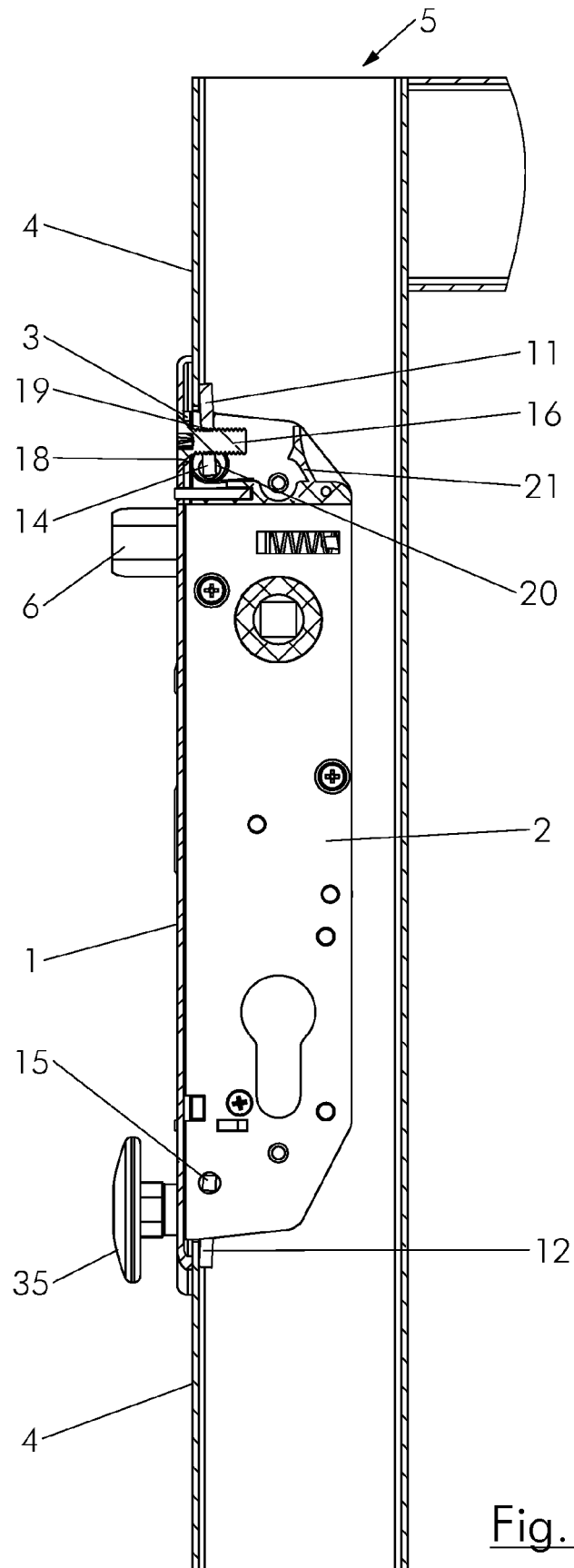


Fig. 8

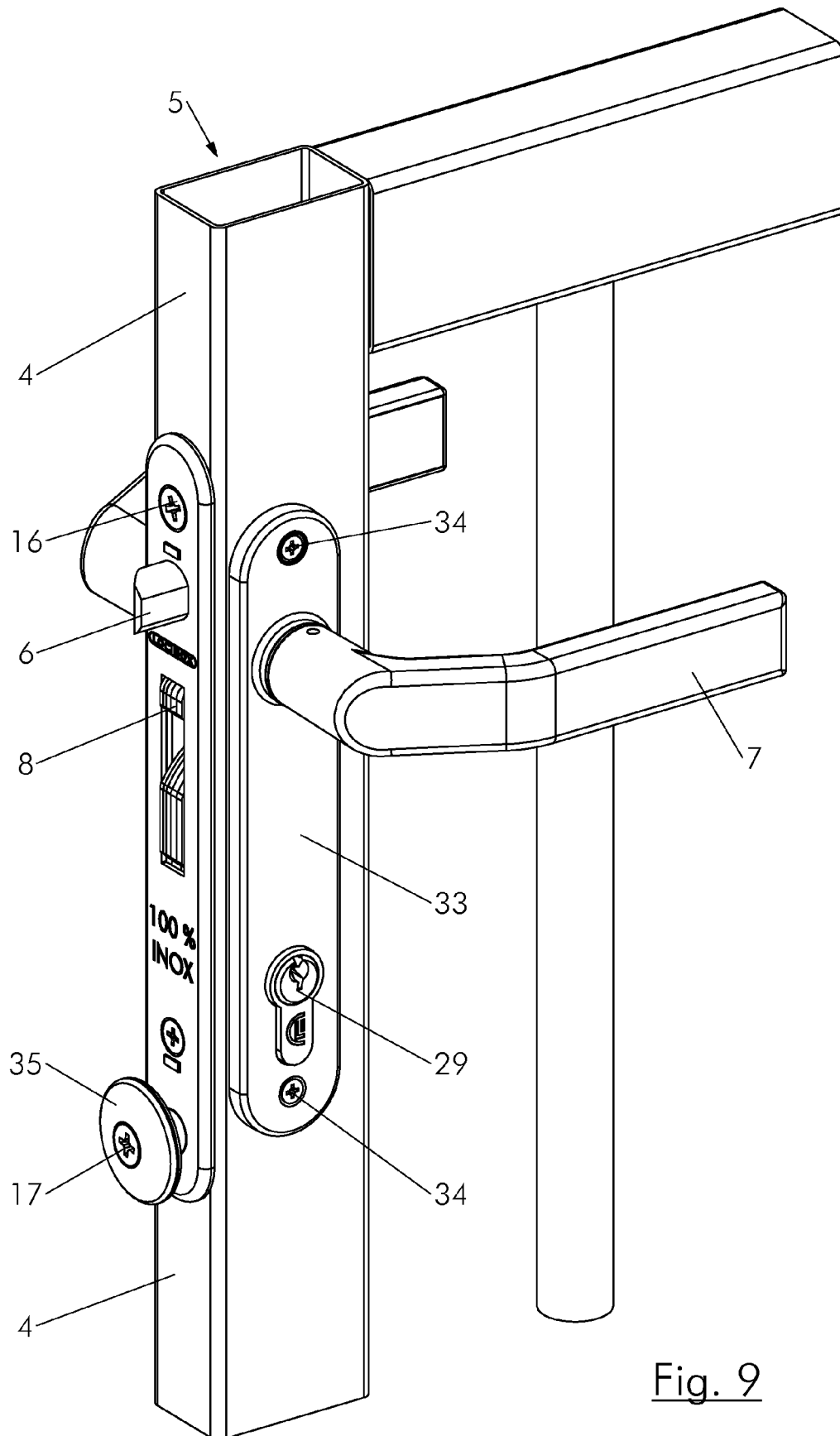


Fig. 9

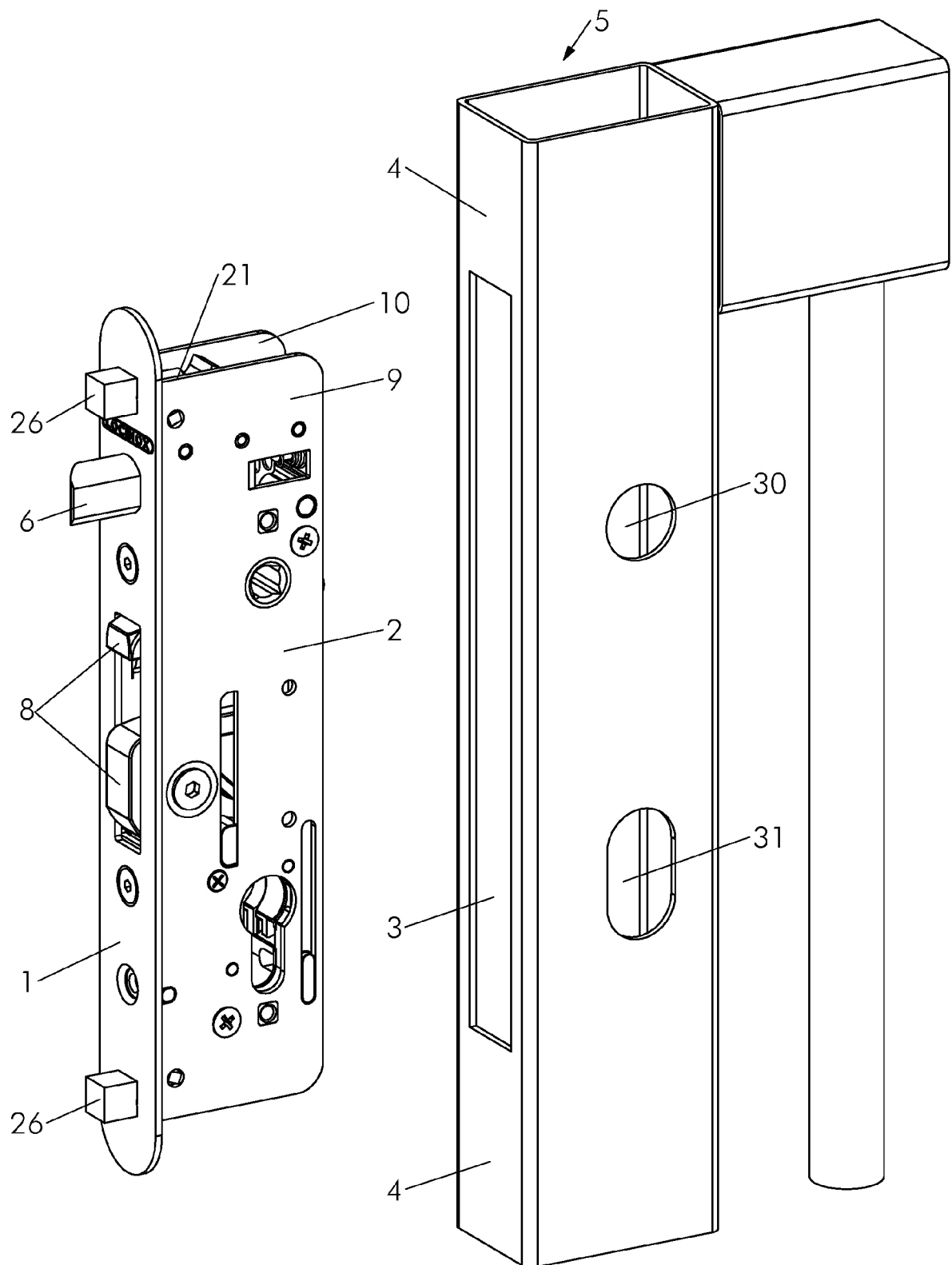


Fig. 10

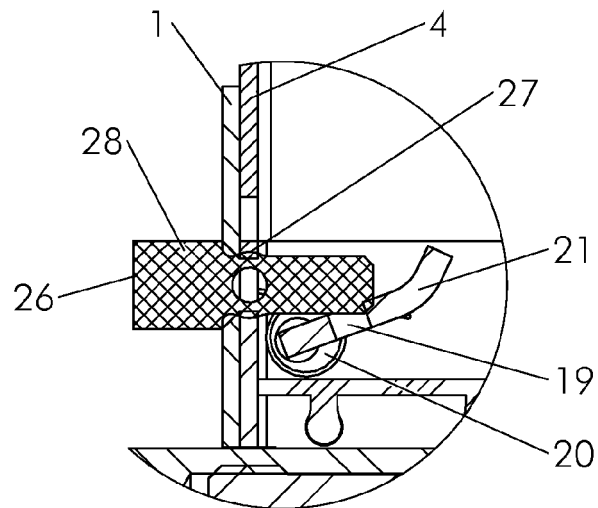


Fig. 11

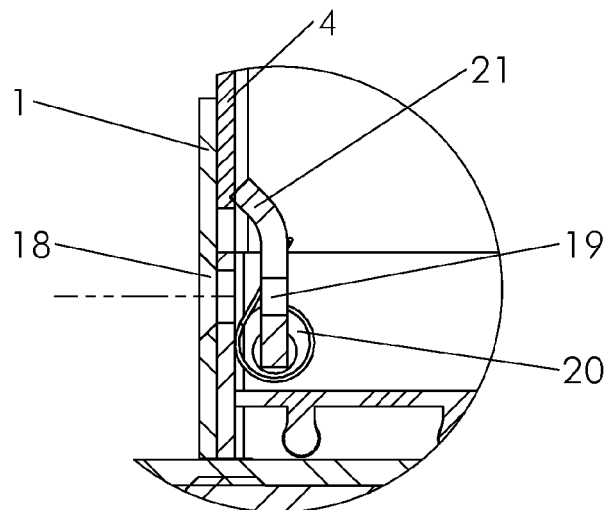


Fig. 12

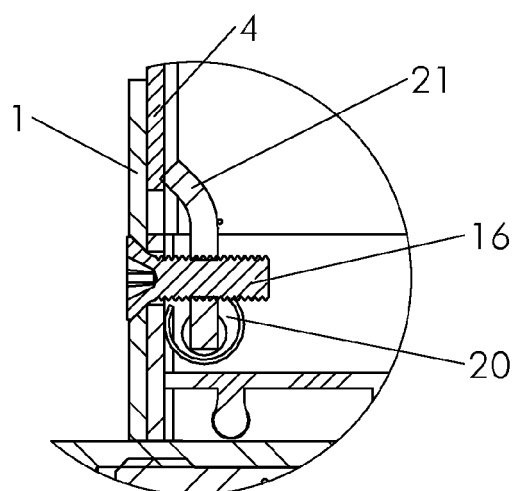


Fig. 13

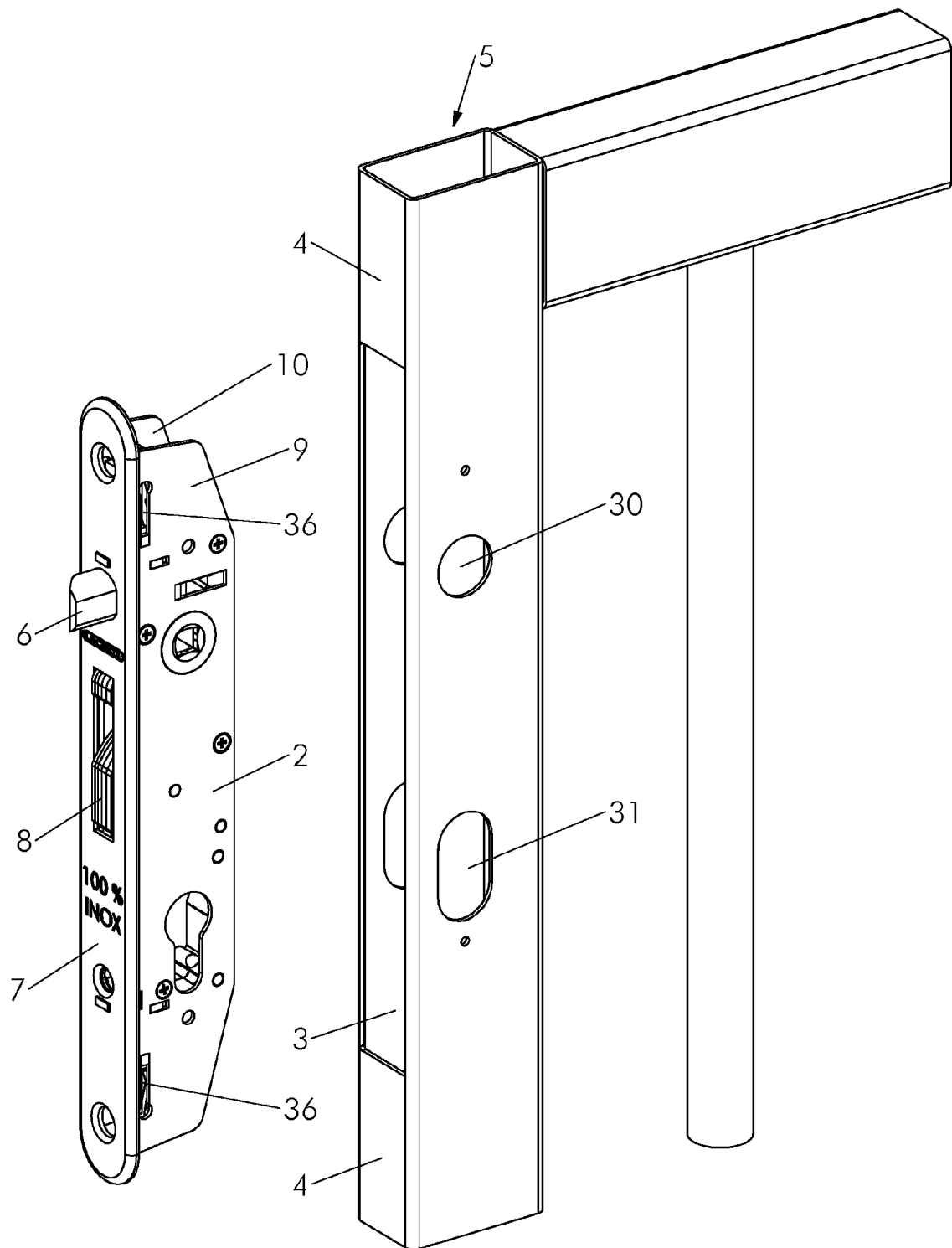


Fig. 14



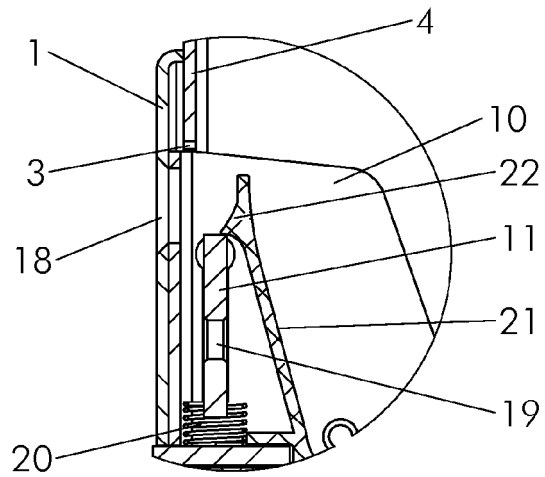


Fig. 15

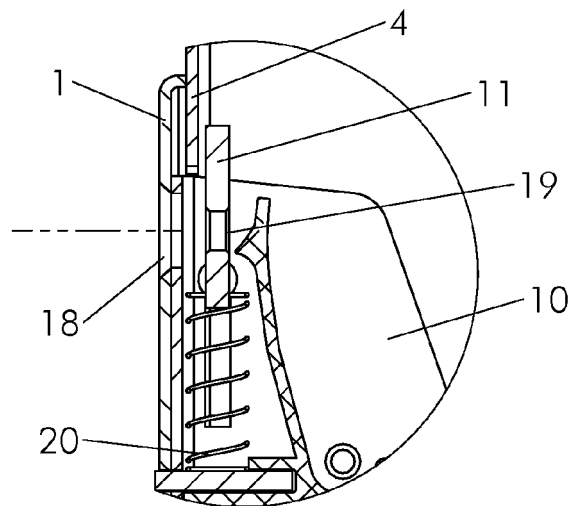


Fig. 16

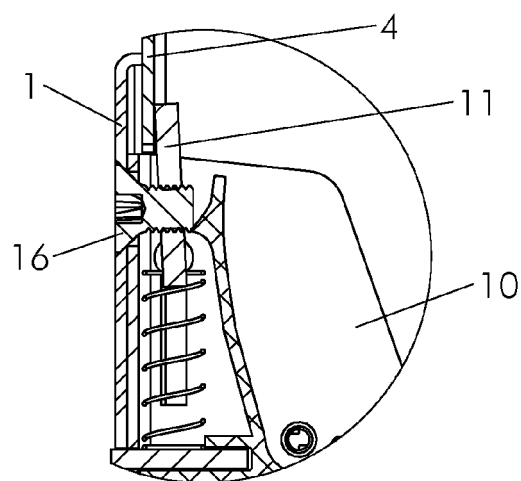
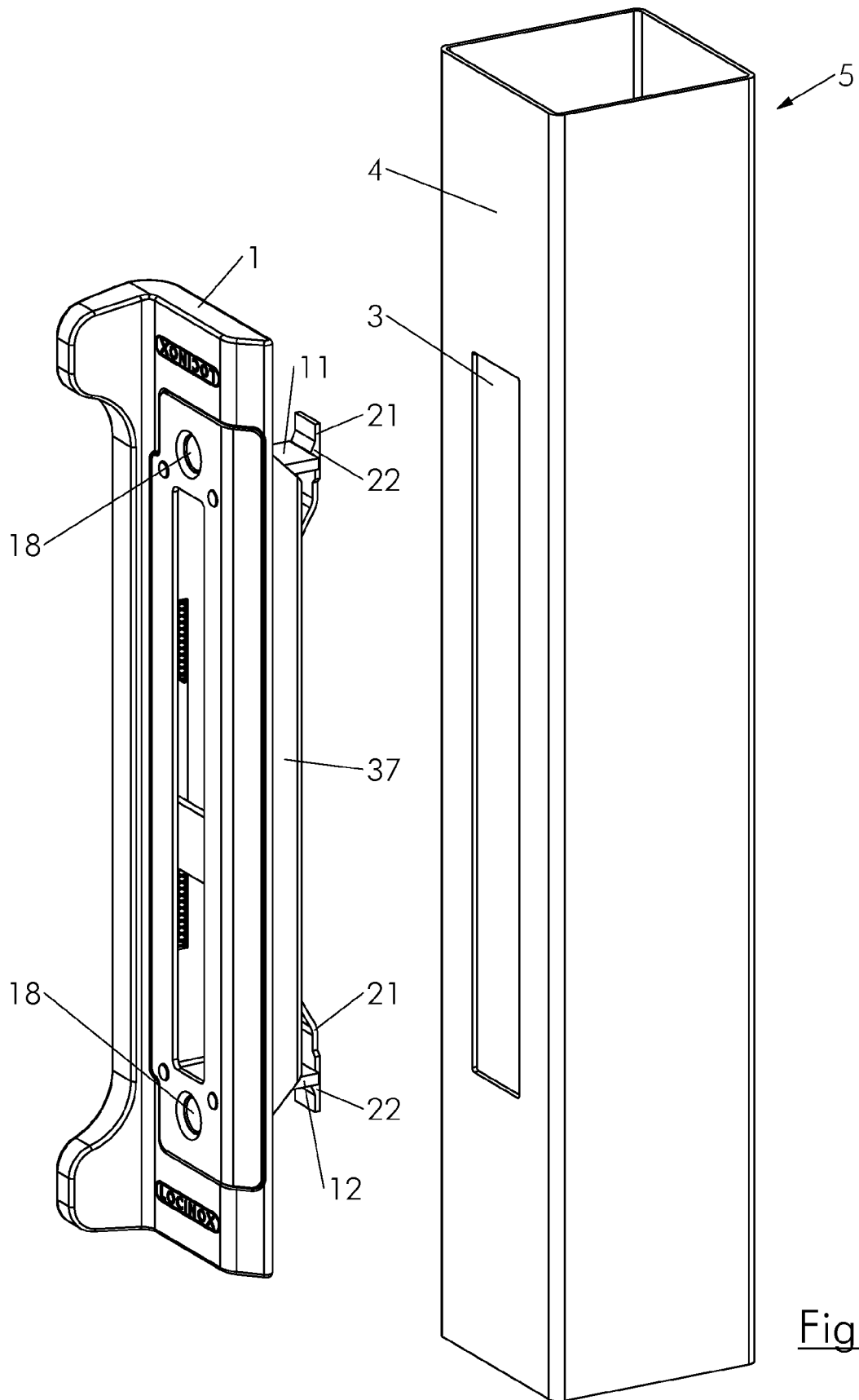


Fig. 17



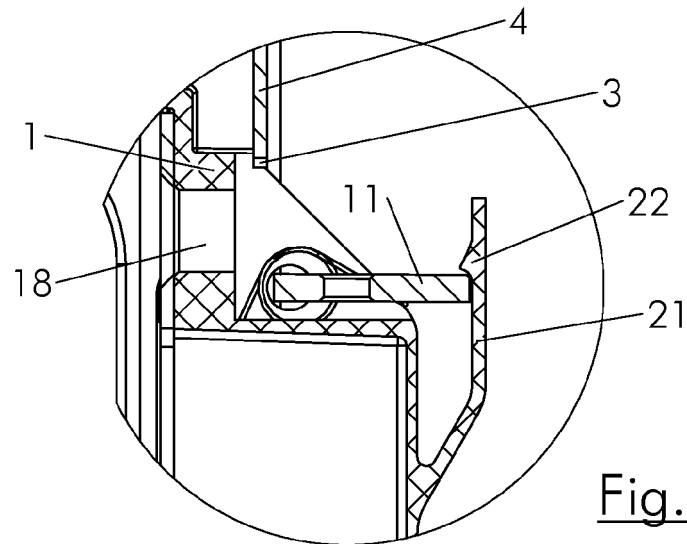


Fig. 19

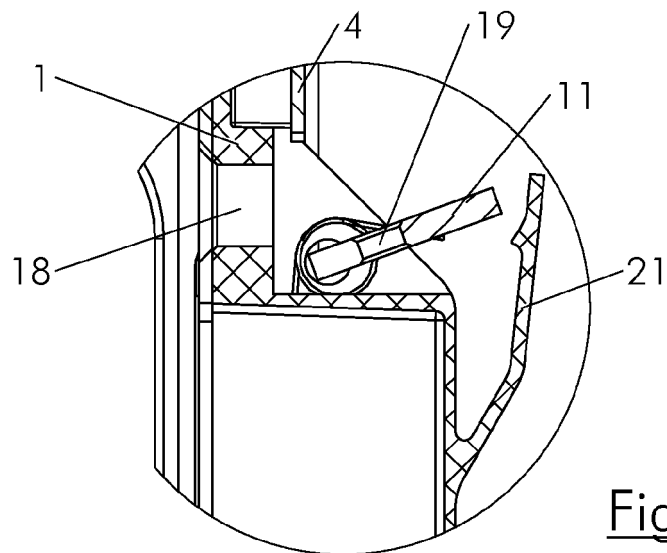


Fig. 20

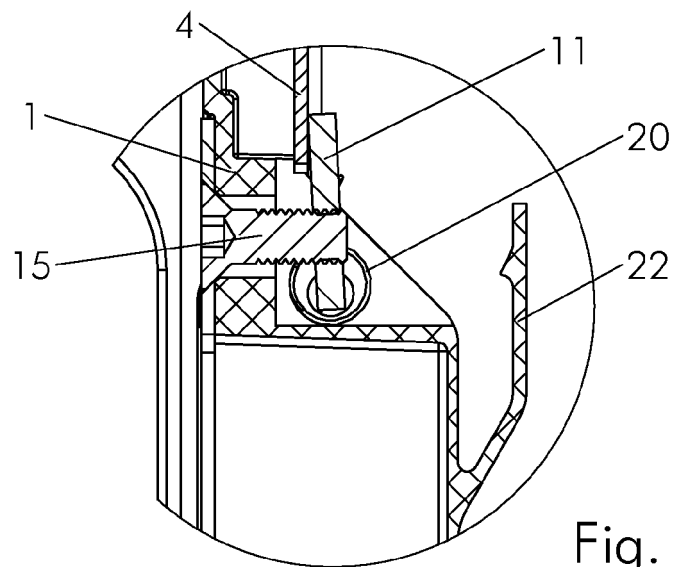


Fig. 21



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 Application Number  
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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |                                                     |                                         |
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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                              |                                                     |                                         |
| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                              | Date of completion of the search<br>23 January 2017 | Examiner<br>Geerts, Arnold              |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                                                                              |                                                     |                                         |

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The members are as contained in the European Patent Office EDP file on  
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23-01-2017

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