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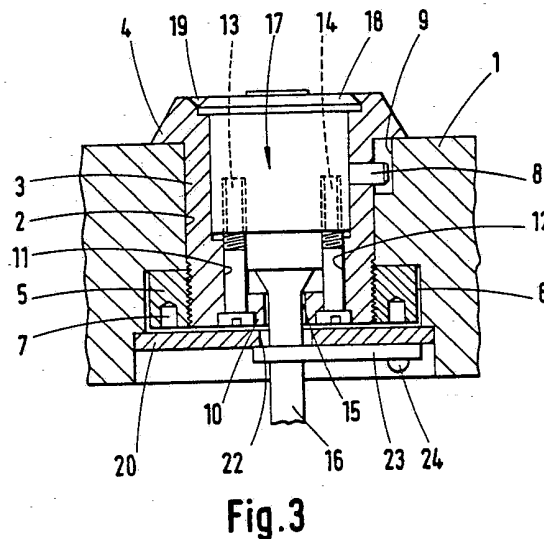
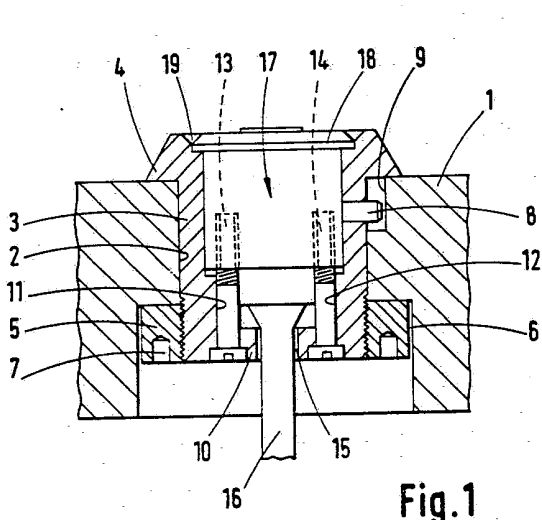
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(54) Securing rim lock cylinders to closures

(57) For fixing a key-operable rim lock cylinder 17 to a closure 1 e.g. door, a generally cylindrical robust housing 3 for the cylinder 17 has at a front end an integral flange 4 bearing against a front face of the door 1, and defining a recess 19 in which a flanged front face 18 of the cylinder 17 seats as a close fit. A rear end wall 10 of the housing 3 is pierced with holes 11, 12 for seating the heads of machine screws 13, 14 for securing the cylinder 17 into the housing 3 and a hole 15 for allowing passage of a connecting turn bar 16 of the cylinder. The rear end of the housing 3 is externally threaded for the receipt of a locking ring 5 locating in a recess 6 in the door 1 to secure the housing in the door.

A key 8 bearing against wall of a slot 9 prevents the housing 3 from rotating while ring 5 is being tightened.

The embodiment of Figures 3, 4 has a cover plate 20 provided with a blind 23 which swings to obturate a hole 22 should connecting bar 16 be withdrawn to prevent access to a slot of a cam spindle of the rim lock.



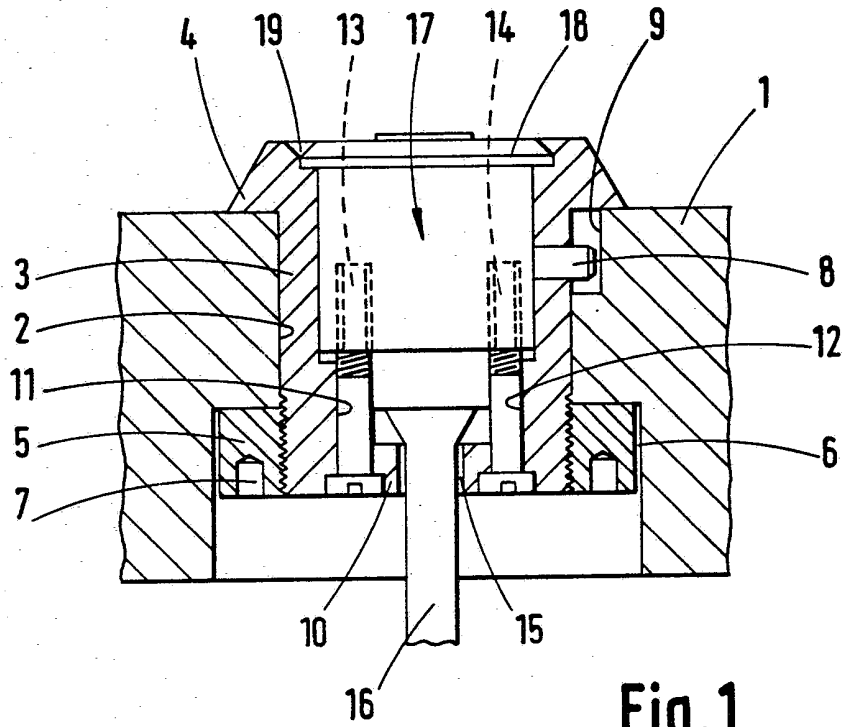


Fig. 1

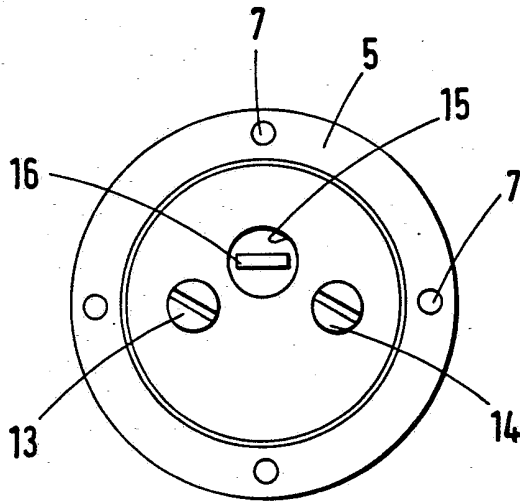


Fig. 2

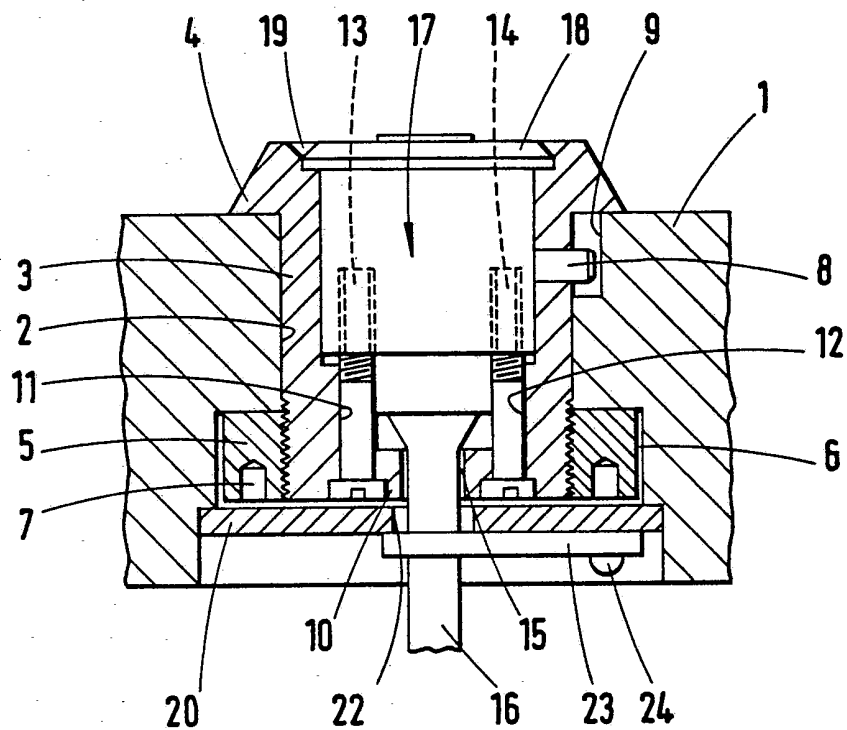


Fig. 3

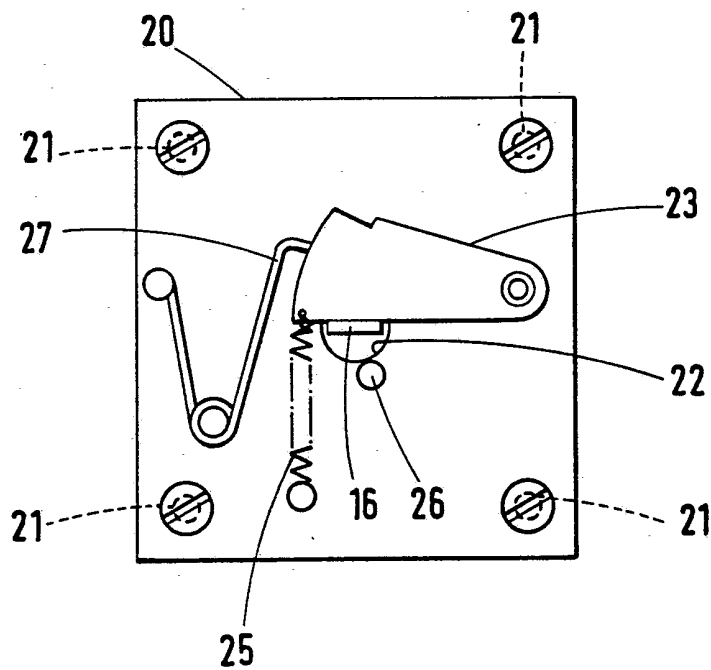


Fig. 4

SECURING RIM LOCK CYLINDERS TO CLOSURES

This invention relates to means for fixing the key-operable cylinder of a cylinder rim lock to a door or like closure.

Cylinder rim locks are very well known, for example from British Patent No 762,243, and prior user of that and like designs.

Such locks comprise a key-operable cylinder which is to be located within the thickness of a door or like closure and which has a connecting turn bar projecting into a slot in a cam spindle of the rim lock to be fitted to a rear face of the closure so that turning of the connecting bar effects movement of a latch bolt in the rim lock. The cylinder of such locks conventionally has a front face portion which defines a flange, and two or more rearwardly directed threaded holes to receive machine screws for fixing purposes. For fixing the cylinder into the closure, it is conventional to provide a profiled front bezel which defines a recess for the front flange of the cylinder, and a back plate provided with holes, one allowing clearance for the connecting turn bar, and two for the machine screws used to fix the cylinder in place. The profiled front bezels most commonly available are pressed from sheet brass which is rather less than 1mm in thickness, and the back plate is typically pressed from sheet steel about 1mm thick. The size of such cylinders has become standardised, and to fix the cylinder in place, a hole one and one quarter inches in diameter (32mm) is drilled through the closure, the front flange of the cylinder is seated in the recess of the profiled bezel and the assembly is passed through the drilled hole so that the profiled bezel seats against the rim of the hole on the front face of the closure. The back plate is then passed

over the connecting bar and presented to the rear face of the closure, whereafter two machine screws are screwed through the back plate into the threaded holes in the cylinder and tightened to clamp the front profiled bezel and back plate against the opposite faces of the closure
5 and thus fix the cylinder into position.

There is a particular problem of security associated with this manner of fixing, in that it is a relatively easy, using a suitable lever, to prise the profiled front bezel and cylinder flange forwards and thus remove the cylinder from the closure by breaking the machine
10 screws or dragging their heads through the back plate. It is then a simple matter to operate the latch bolt by inserting a screwdriver in the slot of the cam spindle of the rim lock and turning it.

It is an object of the present invention to provide a more secure fixing for a rim lock cylinder.

15 According to this invention, there is provided means for fixing the key-operable cylinder of a cylinder rim lock to a door or like closure, which comprises a generally cylindrical robust housing for the cylinder, the housing having at a front end an integral flange for bearing against a front face of the closure, the flange defining a recess in which a
20 flanged front face of the cylinder seats as a close fit, the rear end of the housing being pierced with holes for seating the heads of machine screws for securing the cylinder into the housing and for allowing passage of a connecting turn bar of the cylinder, and the rear end of the housing being externally threaded for the receipt of a locking ring
25 for bearing against the rear of a closure to secure the housing in the closure.

A housing according to the invention provides a more secure fixing for a rim lock cylinder than has hitherto been done. Because the flanged front face of a cylinder is a close fit in the recess in the
30 front of the housing, a lever cannot easily be used to separate it from the housing. Reliance is thus placed on the locking ring to resist removal of the cylinder from the closure, and because of its great diameter compared with the machine screws conventionally used, stresses can much more easily be withstood.

35 The housing and locking ring are suitably made from steel. The steel used may be plated, or a stainless steel if desired.

Preferred features of the housing are as defined in claims 2 to 5 hereof.

The invention includes an assembly comprising a rim lock cylinder and fixing means as defined, and extends to such an assembly wherein
5 the cylinder is secured into the housing of said fixing means by machine screws.

In use, the cylinder is preferably secured in the housing by machine screws.

In preferred embodiments of the invention, said assembly further
10 comprises a cam spindle cover plate a cam spindle cover plate provided with a hole for passage and turning of such a connecting turn bar, said cover plate incorporating a pivotally mounted blind for obturating said hole and means for biasing the blind to obturate that hole.

Such a cam spindle cover plate forms the subject of our copending
15 patent application No: 8702452 of even date ~~filed under reference AT/00497/~~. The use of such a cover plate provides additional security.

Even in the event that the cylinder can be removed from the door or like closure, as the connecting turn bar is withdrawn through the hole
20 in the cover plate, the blind will be pivoted across to obturate that hole thus preventing easy and immediate access to the slot in the cam spindle of a rim lock.

The invention also includes a method of fitting a door or like closure with fixing means for a rim lock cylinder as herein defined,
25 which method comprises drilling through the closure a hole which snugly accommodates the cylindrical portion of the housing, passing that portion of the housing through that hole from the front of the closure, and threading said locking ring onto the rear of the housing and tightening it to cause the front flange of the housing to bear against
30 the front face of the closure.

A preferred embodiment of the invention will now be described with reference to the accompanying diagrammatic drawings in which.

Figure 1 is a partial cross sectional view of a rim lock cylinder secured in a housing fixed in a door.

35 Figure 2 is a rear elevation of the housing.

Figure 3 is a view similar to Figure 1 of a rim lock cylinder installation incorporating an optional cam spindle cover plate, and Figure 4 is an elevation of that cam spindle cover plate.

In Figures 1 and 3, a door 1 has a hole 2 bored therethrough to accommodate a housing 3. The housing 3 is held in place by pressure exerted on the front face of the door 1 by an integral front housing flange 4 and by a locking ring 5 screwed onto a threaded rear section of the housing 3. The locking ring 5 is located within a recess 6 cut into the rear face of the door 1. The locking ring 5 is circular and is provided with tommy holes 7 in order to facilitate tightening. In order to prevent the housing 3 from rotating while the locking ring 5 is being tightened, a key 8 is located in a hole drilled into the housing 3 behind the front flange 4, which key bears against the wall of a slot 9 out in the front face of the door. The slot 9 is hidden by the flange 4 when the housing is in place.

In order to fit the housing 3 to the door 1, recess 6 is first cut with an appropriate sized drill bit, the drill bit is replaced, and the hole 2 is then drilled through the door. The housing is then passed through the door from the front and the locking ring is tightened.

The rear of the housing 3 is closed by a wall 10 which is pierced by holes 11,12 for the seating of machine screws 13,14, and by a hole 15 for the passage of a connecting turn bar 16 of a rim lock cylinder 17. The rim lock cylinder 17 has a front flange 18 which seats in a closely fitting recess 19 machined in the front of the housing 1. The cylinder 17 may be secured into the housing 3 using the machine screws 13,14 either before or after the housing is fixed into the door.

The side wall of the housing 3 is preferably at least 4 mm thick. It may for example be 6 to 7 mm thick.

The front flange 4 of the housing is bevelled, and preferably has a greatest thickness of at least 4 mm. Such thickness may for example be 8 to 9 mm.

A rear elevation of the cylinder housing is shown in Figure 2 in which reference numerals given above are allotted to the various parts of the housing visible.

The installation shown in Figure 3 is further equipped with a cover plate 20 for a cam spindle of a rim lock (not shown) the cover plate 20 also being recessed into the rear face of the door 1.

As shown in Figure 4, the cam spindle cover plate 20 is rectangular in shape, and it is of such size that it will be hidden by the rim lock when the latter is fixed to the door. The cover plate 20 has holes 21 at its corners for the location of fixing screws, and it also has a hole 5 22 for passage and clearance of the connecting turn bar 16.

The rear face of the cover plate 20 is provided with a blind 23 mounted on a pivot axle 24 so that it can swing to obturate the hole 22 under the bias of a spring 25 should the connecting turn bar 16 be withdrawn from the hole. A stop pin 26 is provided to prevent the 10 spring 25 urging the blind 23 beyond the obturating position. One edge of the blind 23 is arcuate and bears against a detent 27 arranged to hold the blind 23 in its obturating position to prevent unauthorised access to the slot of the cam spindle of the rim lock from the front of the door. The cover plate is mounted to the door so that its blind 23 15 pivots downwardly into the obturating position. The weight of the blind thus acts as a supplementary bias.

Thus, even in the event that the cylinder can be removed from the door or like closure, as the connecting turn bar is withdrawn through the hole in the cover plate, the blind will be pivoted across to 20 obturate that hole thus preventing easy and immediate access to the slot in the cam spindle of a rim lock.

CLAIMS

1. Means for fixing the key-operable cylinder of a cylinder rim lock to a door or like closure, which comprises a generally cylindrical robust housing for the cylinder, the housing having at a front end an integral flange for bearing against a front face of the closure, the
5 flange defining a recess in which a flanged front face of the cylinder seats as a close fit, the rear end of the housing being pierced with holes for seating the heads of machine screws for securing the cylinder into the housing and for allowing passage of a connecting turn bar of the cylinder, and the rear end of the housing being externally threaded
10 for the receipt of a locking ring for bearing against the rear of a closure to secure the housing in the closure.
2. Fixing means according to claim 1, wherein housing incorporates a key behind the front flange for engagement in a key slot in a closure for resisting rotation of the cylinder as the locking ring is tightened.
- 15 3. Fixing means according to claim 1 or 2, wherein said front flange has a greatest front to back dimension of at least 4 mm.
4. Fixing means according to any preceding claim, wherein the wall of the housing has a thickness of at least 4 mm.
5. Fixing means according to any preceding claim, wherein said front
20 flange is bevelled.
6. An assembly comprising a rim lock cylinder and fixing means according to any preceding claim.
7. An assembly according to claim 6, wherein said cylinder is secured into the housing of said fixing means by machine screws.
- 25 8. An assembly according to claim 6 or 7 and further comprising a cam spindle cover plate a cam spindle cover plate provided with a hole for passage and turning of such a connecting turn bar, said cover plate incorporating a pivotally mounted blind for obturating said hole and means for biasing the blind to obturate that hole.

9. A door or like closure equipped with fixing means according to any of claims 1 to 5, the housing being secured in a snug fitting hole in the closure by pressure exerted on the front and back faces of the closure by the front flange and the locking ring respectively.
- 5 10. A door or like closure according to claim 9, wherein said locking ring fits in a recess cut within the thickness of the closure.
11. A door or like closure according to claim 10, wherein over said locking ring there is mounted to the rear face of the door a cam spindle cover plate a cam spindle cover plate provided with a hole for passage
10 and turning of such a connecting turn bar, said cover plate incorporating a pivotally mounted blind for obturating said hole and means for biasing the blind to obturate that hole.
12. A method of fitting a door or like closure with fixing means according to any of claims 1 to 5, comprising drilling through the
15 closure a hole which snugly accommodates the cylindrical portion of the housing, passing that portion of the housing through that hole from the front of the closure, and threading said locking ring onto the rear of the housing and tightening it to cause the front flange of the housing to bear against the front face of the closure.
- 20 13. A method according to claim 12, wherein a recess is cut in the rear face of the closure for accommodating said locking ring.