H. O. HÖGLUND.

LOCK.

APPLICATION FILED JUNE 8, 1914.

1,133,962.

Patented Mar. 30, 1915.

3 SHEETS—SHEET 1.

Fig.1.

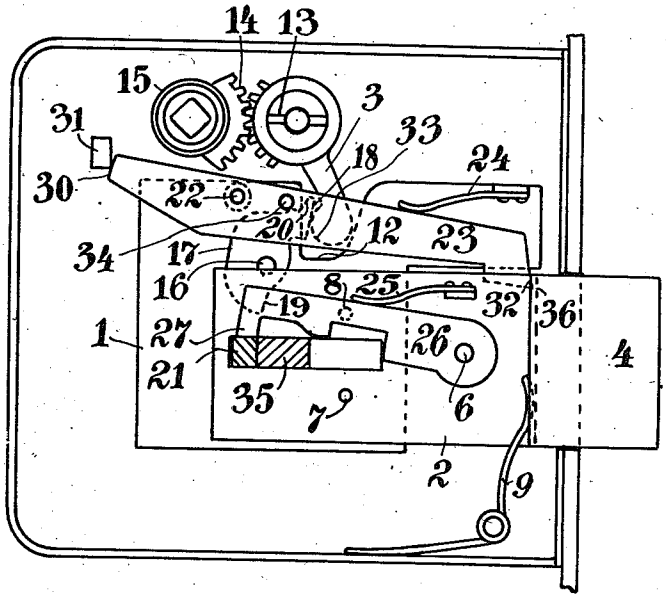
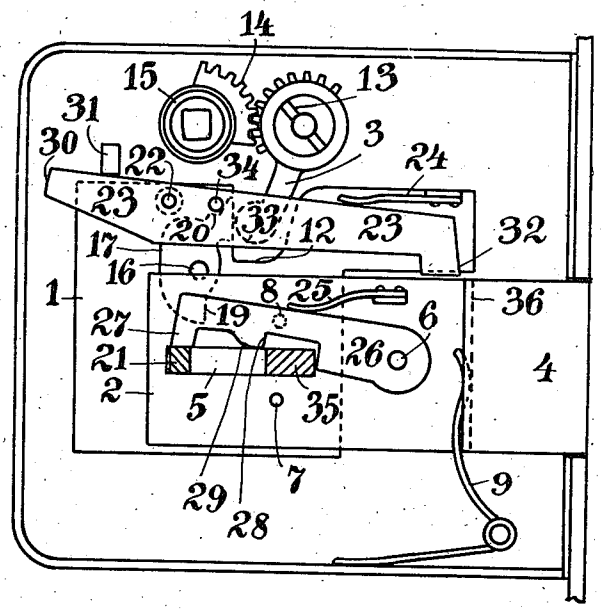


Fig.2.



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3 SHEETS—SHEET 2.

Fig.3.

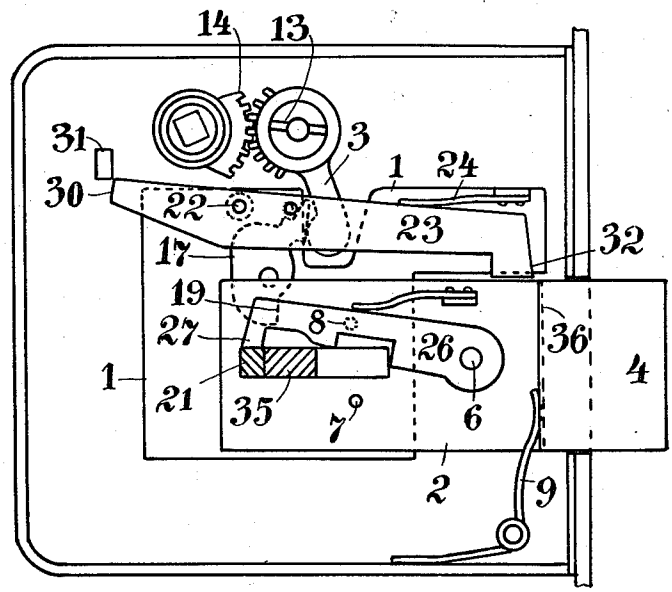
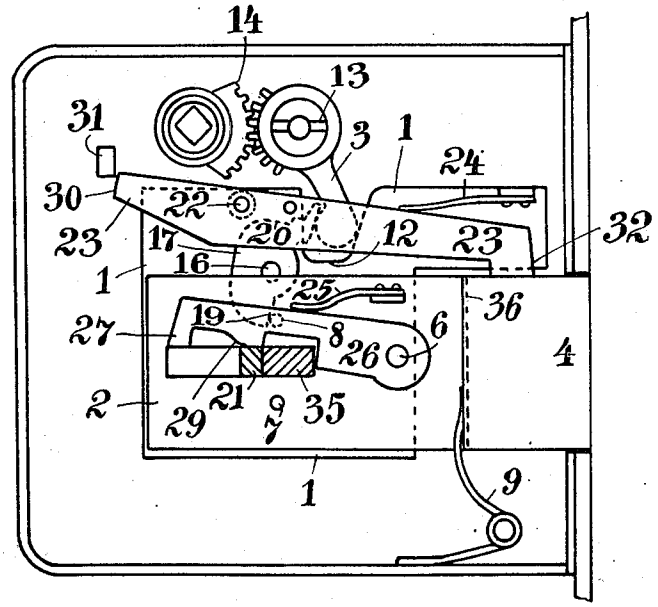


Fig.4.



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3 SHEETS—SHEET 3.

Fig. 5.

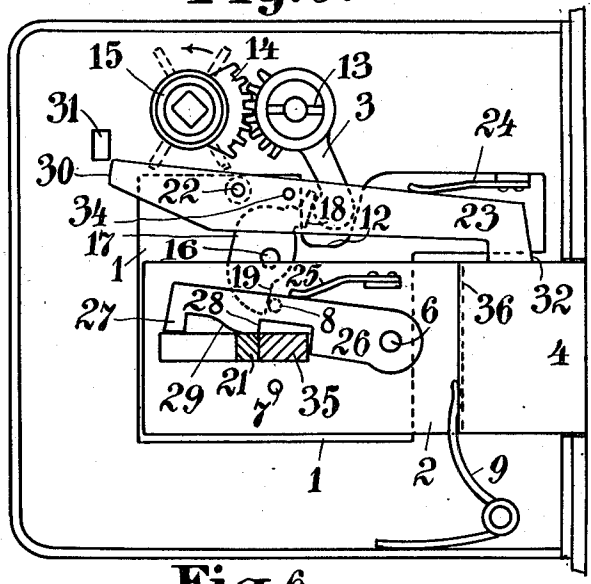


Fig. 7.

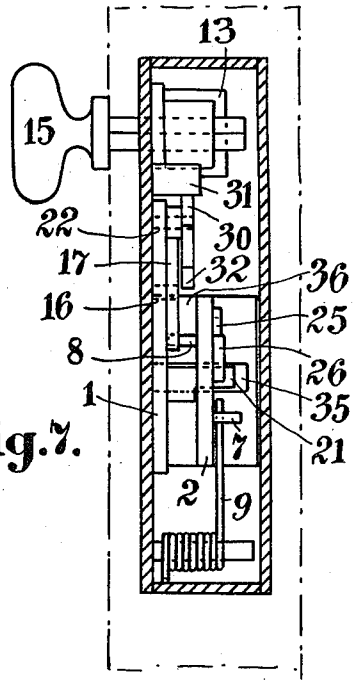


Fig. 6.

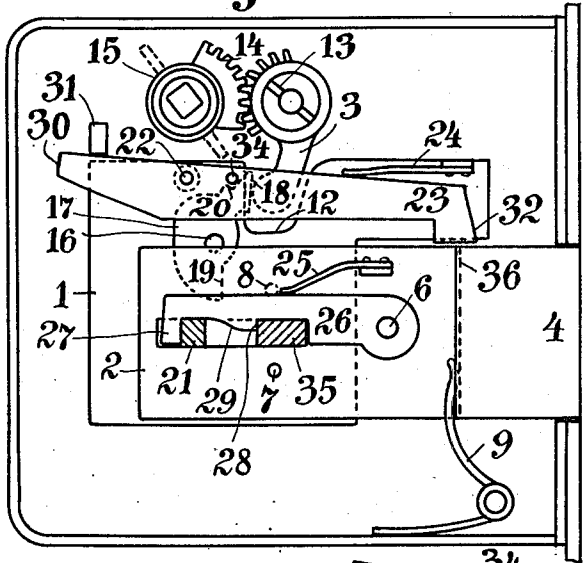
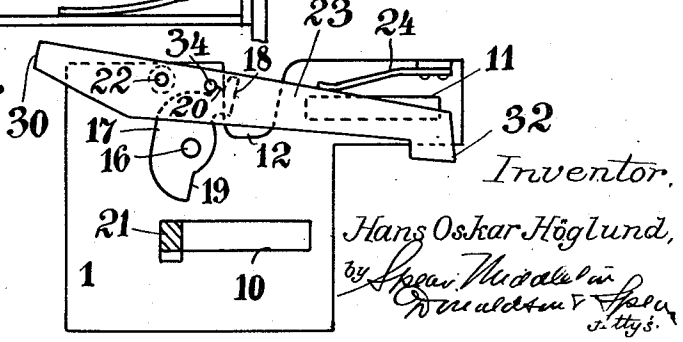


Fig. 8.



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UNITED STATES PATENT OFFICE.

HANS OSKAR HÖGLUND, OF CHRISTIANIA, NORWAY.

LOCK.

1,133,962. Specification of Letters Patent. Patented Mar. 30, 1915.

Application filed June 8, 1914. Serial No. 843,872.

To all whom it may concern:

Be it known that I, HANS OSKAR HÖGLUND, citizen of the United States, residing at Christiania, Norway, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to such locks as are provided with a catch bolt.

The object of the invention is to render this type of lock applicable as a mortise lock and to this end it provides for a safe and convenient locking of the bolt both in its extended and retracted positions. While in common locks of the above type this locking of the bolt is effected by displacing a special part such as a lug which projects from the lock case either on its locking face or on the exposed side face of same, this locking according to the present invention, is effected by the exclusive operation of the locking parts proper. To this end the bolt is formed by two parts which are movable in relation to each other, one carrying the bolt latch (or locking part) and the other operated by the key or operating part, the locking action being produced by displacing these parts in respect to each other.

In the drawing, Figures 1 to 6 are side views of the lock showing its different parts in various positions hereinafter to be described. Fig. 7 is an end view of same, and Fig. 8 is a detail view, showing the lower part of the bolt and the parts appertaining thereto.

The lock and its different parts are constructed as follows: The bolt comprises two main parts 1 and 2, which are movable in respect to each other. Secured to the part 2 is the latch or bolt 4, which forms the locking bolt. The same is further provided with a guide slot 5 and a pivot 6 and two pins 7 and 8, and is further acted upon by a spring 9, which tends to push the bolt out from the lock case. The part 1 of the bolt lies behind the part 2 and is shown separately in Fig. 8. It consists of a plate provided with two guide slots 10 and 11 and a notch 12, engaging with an arm 3, which may be operated either from the outside of the door by means of a key introduced into the key hole 13 or from the inside by means of a handle 15 engaging with a toothed wheel 14. Pivotally secured to the plate 1 at 16 is a further plate or stop 17, provided with two abutments 18 and 19, and a face 20 of a suitable shape as shown in Fig. 8, consisting of two different parts separated by a ridge, and further with a stud 21. To the plate 1 is further pivoted at 22 a pawl 23, which is acted upon by a spring 24. To the bolt part 2 is pivoted at 6 a spring pressed pawl 26, with spring 25, and provided with two locking faces 27 and 28, and a face 29 of suitable shape for the release of the pawl.

The mode of operation is the following: Supposing the bolt to be locked in the extended or locking position (Fig. 1), in which both parts of the bolt 1 and 2 are in their protracted positions and the end 30 of the pawl 23 abuts against the stud 31 on the lock case, while the other end 32 locks the bolt by abutting against the face 36 on same. If it is now desired to open the door, the lever 3 is turned to the left by means of the key, which is turned in the direction of the hand of the watch, or by means of the handle (Fig. 2). This will cause the stud 33 to strike the face 18 of the plate 17 so as to slightly turn the latter and lifting the pin 34 by means of the face 20, whereby the pawl 23 will be tilted so as to take a less inclined position and to be disengaged from the stud 31 and the latch 4, and at the same time the right part of the face 20 will come beneath the pin 34 and lock the pawl 23 in released position. The bolt being now released, the part 1 will be moved to the left by the arm 3 engaging the notch 12 and the part 2 will be moved to the left as the stud 21 on part 1 will carry the part 2 with it, and the latch 4 will thereby be withdrawn fully into the lock case, so that the door will be unlocked. On opening the door, the latch will spring forward to its protracted position under the stress of the spring 9 (Fig. 3) and on closing the door the bolt will first be pushed into the lock case by the jamb as is usual in locks of this type and then will spring forward from the same and into the locking piece provided on the frame of the door. When in retracted position the bolt causes the pin 8 to strike upon the face 19 of the pivoted plate 17 and turn the same so as to shift it to the position shown in Fig. 4. The face 20 will now move away from the pin 34 so that the pawl 23 will no longer be prevented from turning, after which the bolt will once more be pressed forward by the spring 9 and automatically locked in this position by the pawl 23 by means of the spring 24. In unlocking the door can be operated only either from the outside by

means of the key or from the inside by means of the handle 15, whereas any pushing in the latch 4, for instance, by means of blade introduced between the door and the jamb and applied against the inclined surface of the latch is precluded.

If it be desired to lock the bolt when the latch is retracted into the lock case, this may be done by first pushing the bolt fully in by hand (Fig. 5) and then turning the key or the part 15 in the same direction as in unlocking. The bolt parts 1 and 2 will then be displaced with respect to each other so that the surface 27 of the pawl 26 will engage the stud 21 on the bolt part 1 and the surface 28 will engage the stud 35 on the lock case, whereby the bolt is locked in the retracted position. To release the same it is only necessary to turn the key or the part 15 in the opposite direction, whereby the stud 21 in returning the part 1 will slide along the cam surface 29 of the pawl 26 and lift the same so as to take it out of engagement with the studs 21 and 25 and cause the bolt to spring forward from the lock case.

The present lock embodies the advantages of mortise locks, which are not liable to be unscrewed without unlocking the door and which are not visible from the outside and at the same time it affords the greatest possible security against opening otherwise than from the outside by means of the key or from the inside by means of an operating part, which may consist for instance either of a loose square or a handle fastened to the inside of the lock. Any desirable system may of course be applied for the arrangement of the latches or bolts according to whether the lock is desired to be pick proof or not.

I claim:

1. In a lock, a catch bolt formed of two independently movable parts, one of said parts being operated by the key and the other carrying the bolt catch, means carried by the key operated part for locking the bolt in extended position, and means carried by the bolt carrying part for locking the bolt in retracted position.

2. In a lock, a catch bolt formed of two independently movable parts, one of said parts being operated by the key and the other carrying the bolt catch, means carried by the key operated part for locking the bolt in extended position, means carried by the bolt carrying part for locking the bolt in retracted position and releasing means for both of said locking means operable alike by both the knob and key of the lock.

3. In a lock, a catch bolt formed of two independently movable parts, one of said parts being operated by the key and the other part carrying the bolt catch, a pawl pivoted on the former part adapted to lock the bolt in extended position, and a second pawl for locking the bolt in retracted position.

4. In a lock, a catch bolt formed of two independently movable parts, one of said parts being operated by the key and the other part carrying the bolt catch, a pawl pivoted on the former part adapted to lock the bolt in extended position, a second pawl for locking the bolt in retracted position and a pivoted member carried by the key operated part through which the key operates the second pivoted pawl.

In testimony whereof, I affix my signature in presence of two witnesses.

HANS O. HÖGLUND.

Witnesses:
S. OTTERSEN,
H. STRUEGEHAGEN.