April 14, 1925. 1,533,629

F. E. BEST

DISAPPEARING ANCHOR LOCK

Filed June 28, 1923

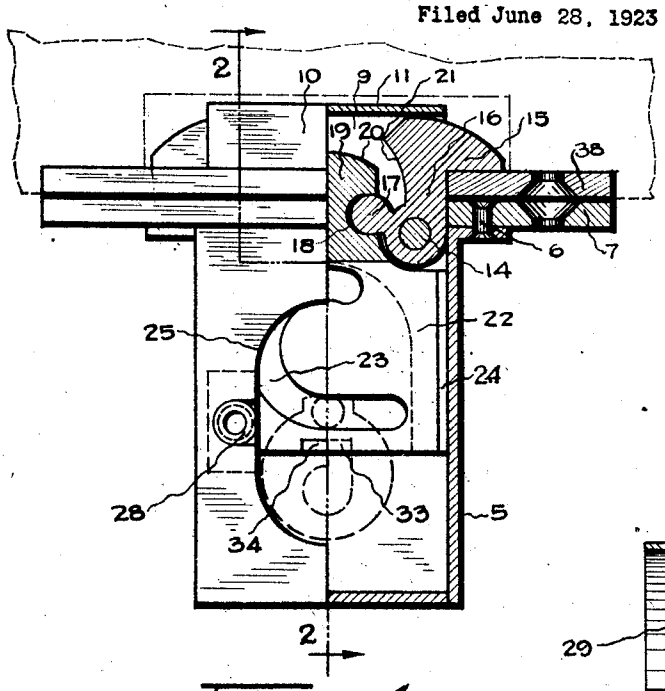


FIG - 1

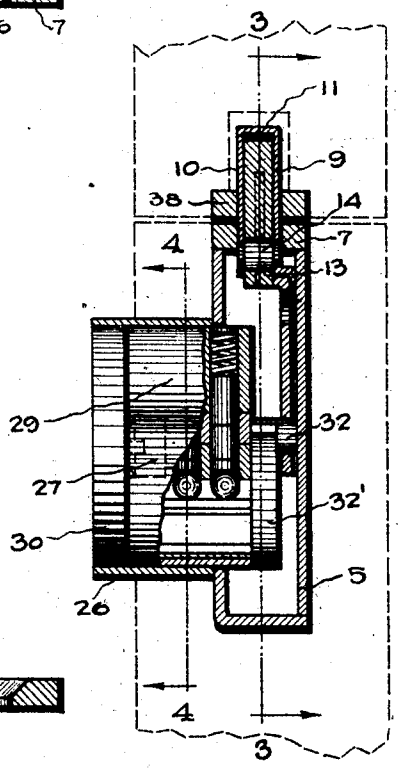


FIG - 2

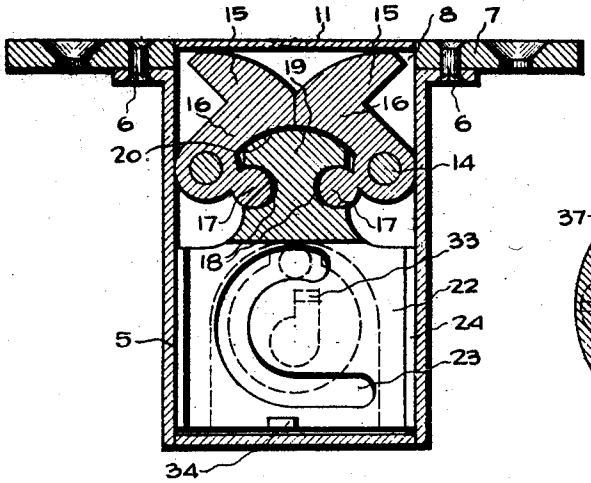


FIG - 3

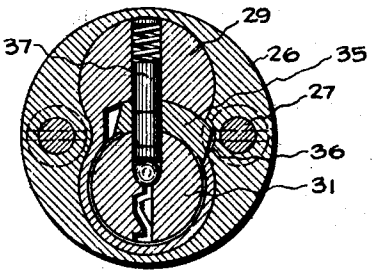


FIG - 4

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INVENTOR.

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UNITED STATES PATENT OFFICE.

FRANK ELLISON BEST, OF SEATTLE, WASHINGTON, ASSIGNOR TO FRANK E. BEST, INC., OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON.

DISAPPEARING-ANCHOR LOCK.

Application filed June 28, 1923, Serial No. 648,303.

To all whom it may concern:

Be it known that I, FRANK ELLISON BEST, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Disappearing-Anchor Lock, of which the following is a specification.

My invention relates to improvements in locks of the movable bolt disappearing anchor type and an object of my improvement is to provide a lock of this class having a bolt that is arranged to be projected outwardly from, and withdrawn into a lock housing and having anchor members that are arranged to be projected outwardly from the sides of the bolt when the bolt is out of the lock and withdrawn into the bolt as said bolt is retracted or withdrawn into the lock housing.

Other objects are to provide a lock of this class that is strong, simple and compact in construction, reliable and efficient in operation, and not expensive to manufacture.

A further object is to provide a lock of this nature that is especially adapted for use in connection with pin tumbler locking mechanism and that is constructed so that the several parts are readily detachable to facilitate the insertion and securing of the lock in a mortise.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawings.

In the drawings Figure 1 is a view partly in elevation and partly in section, on an enlarged scale, of an anchor lock constructed in accordance with my invention, the bolt and anchor parts being shown in an extended or locked position and the pin tumbler lock housing being omitted.

Fig. 2 is a sectional view of the same substantially on a broken line 2—2 of Fig. 1, parts being shown in elevation.

Fig. 3 is a sectional view on line 3—3 of Fig. 2 showing the bolt and anchor parts retracted into an opposite position from that shown in Fig. 1.

Fig. 4, is view in cross section through lock housing substantially on broken line 4—4 of Fig. 2.

Referring to the drawings, throughout which like reference numerals designate like parts, 5 designates a relatively thin substantially rectangular housing having its front end rigidly secured, as by rivets 6, to a face plate 7 of larger dimensions than the front end of the housing. The front end of the housing 5 is open and registers with an opening 8, in the face plate, through which a bolt member is arranged to protrude, said bolt member preferably being constructed of a piece of sheet metal bent channel shape to form two spaced apart sides 9 and 10 that are connected at their outer end by an end piece 11. The inner end of the side plate 9 is bent outwardly as at 13, Fig. 2, to form a stop.

Mounted between the two sides 9 and 10 of the bolt member on pivots 14 are two anchor members of substantially bell crank shape, each comprising a hook portion 15, a longer arm 16 extending between the pivot and the hook portion and a shorter arm 17 of substantially disc shape projecting inwardly from the pivot member. The shorter rounded arms 17 are arranged to fit within arcuate recesses 18 in the sides of the head portion 19 of a throw member; said head portion 19 having a rounded upper end 20 that is arranged to fit the inner curved edges 21 of the anchor members. The recesses 18 are deep enough to afford clearance for the rounded arms 17 in moving between the extreme positions shown in Fig. 1 and Fig. 3. The outer extremities of the anchor members that operate in close proximity to the wall 11 are preferably rounded as shown..

The head portion 19 of the throw member is rigidly connected with a plate 22 that fits within the housing 5 and is provided with a J-shaped slot 23 of a form more specifically described in my co-pending application Serial Number 650,635 filed July 10, 1923.

The edges 24 of the plate 22 are bent at right angles to the remainder of the plate to form guides that slide within the housing 5.

The housing 5 is provided on one side with an opening 25 over which a lock case 26 is arranged to be secured as by screws 27 that extend through the lock case and screw into nut members 28 in the inside of said case, the head portions of the screws being set down into the lock case so that they are inaccessible when the lock is assembled.

The lock case is provided with an internal rrecess of figure 8 cross sectional shape that is counter bored at its outer end and that is adapted for the reception of a

lock core 29, also of figure 8 cross sectional shape, having at its outer end a face plate 30 that fits into the counterbore on the end of the lock case. The inner end of the lock core 29 projects into the housing 5 thereby facilitating the use of a core of maximum length in the least possible space and making possible the use of a greater number of tumbler pins in a thin mortise lock than would otherwise be possible.

The lock core 29 is provided with a rotatable key plug 31 having a key slot for the reception of a key of the usual form and having a throw member 32′ on its inner end that carries an eccentrically arranged pin 32 that projects into the J shaped slot 23 in the plate 22. A stop member 33 on the throw member 32′ is arranged to engage with a lug 34 on the plate 22 to serve as a stop when the several parts have been moved into a fully locked position.

The core 29 is arranged to be removably secured within the lock case 26 by a gate element 35 in the core which is arranged to project into a recess 36 in the case 26. Disposed within the core 29 and key plug 31 are a plurality of sectional tumbler pins 37 arranged to be moved by the insertion of keys so that breaks in the pins will register either with the shear line at the periphery of the key plug 31 to permit rotation of such key plug or with the shear line at the outer periphery of the gate 35 to permit retraction of said gate before removing the core. The operation of the gate 35 is usually controlled by a separate and distinct key so that persons having keys for operating the lock will not, ordinarily be able to remove the lock core.

In operation the key plug 31 is arranged to be rotated through an angle of three hundred sixty degrees and to be locked only in the position in which the throw pin 32 on the end of the key plug is at the uppermost limit of its movement. When the bolt and anchor members are retracted the throw pin 32 will be in the shorter end of the J shaped slot 23 as shown in Fig. 3. To throw such bolt and anchor members outwardly the key plug is rotated through a complete revolution in a counter-clockwise direction into the postion shown in Fig. 1, in which position its movement is arrested by engagement of stop 33 with stop 34.

To retract from the position shown in Fig. 1 the key plug is rotated in a clockwise direction, the longer end of the J shaped slot permitting the pin 32 to pass through its maximum position to one side of the center of the key plug and continue throughout one complete revolution. The bolt and anchor members are securely locked in both the extended and retracted positions.

When the several parts are in the retracted position shown in Fig. 3 the bolt member will be flush with the upper surface of the plate 7 and the anchor members will be withdrawn into the bolt.

If the key plug 31 is then turned to lift the throw member 22 the bolt will first be moved outwardly until the points of the anchor members clear the edges of the plate 38 into which they lock and the anchor members will then be moved outwardly and hook over the edges of the plate 38. In retracting the bolt and anchor members the first movement of the throw member 22 will withdraw the anchors from engagement with the plate 38 and further movement will withdraw the bolt into the housing 5.

The provision of the lock controlled removable core makes it possible to assemble this lock in a mortise in a relatively thin door or rail, the screws 27 securing the lock case 26 to the housing 5 and being accessible only when the core is removed. Allowing the core 29 to protrude into the housing 5 makes it possible to provide an additional tumbler pin in the lock without materially increasing the thickness of the same thereby affording greater security.

The foregoing description and accompanying drawings clearly disclose what I now consider to be a preferred embodiment of the invention and it will be understood that this disclosure is merely illustrative and that such changes may be made as are within the scope and spirit of the following claims:

What I claim and desire to protect by Letters Patent is:

1. In a lock of the class described, a bolt, a pair of anchor members pivotally connected with the bolt, a throw member operatively connected with said anchor members and key controlled means for moving said throw member and locking said anchor members and said bolt co-operatively.

2. In a lock of the class described, a bolt, a pair of anchor members pivoted in said bolt, a throw member connected with said anchor members for moving said anchor members and said bolt co-operatively, said throw member having a cam slot, and lock means including a key controlled rotatable key plug having a pin engageable in said cam slot for moving said throw member.

3. In a lock of the character described, a bolt, a pair of anchor members pivoted to said bolt, a throw member for operating said anchor members and said bolt, and key controlled means for moving said throw member thereby actuating said bolt and serving to releasably retain the anchor members in their adjusted positions.

4. In a lock of the character described, a bolt, a pair of anchor members mounted within said bolt and co-acting therewith, a throw member and key controlled means for operating the anchor members and the bolt

and locking the same in both their engaged and disengaged positions.

5. A lock of the class described embodying a housing, a bolt movable into and out of said housing, two anchor members pivotally mounted in said bolt and arranged to be withdrawn into or projected outwardly from opposite sides of said bolt, a throw member engaging said anchor members for moving said anchor members and said bolt, and key operated lock mechanism for moving said throw member.

6. A lock of the class described embodying a housing, a bolt movable into and out of said housing, two bell crank shaped anchor members pivoted within said bolt, each of said anchor members having a hook portion arranged to project outwardly from the sides of said bolt and a shorter rounded arm portion arranged to project inwardly from the pivotal portion of the anchor member, a throw member having recesses for the reception of the shorter rounded arm portions of said anchor members and key operated lock mechanism for moving said throw member.

7. In a lock of the class described, the combination with a housing, of a lock case removably secured thereto, a bolt in said housing, a pair of anchor members pivoted in said bolt, a throw member guided for reciprocatory movement in said housing and connected with said anchor members for operating said anchor members and said bolt, a lock core removably locked within said lock case, and key controlled means in said lock core for operating said throw member.

8. In a lock of the class described, a bolt, a pair of anchor members pivoted in said bolt, a throw member connected with said anchor members for moving said anchor members and said bolt, said throw member having a J shaped cam slot therein, and lock mechanism including a pin movable in an arc throughout a complete circle and operable in said J shaped cam slot for actuating said throw member.

FRANK ELLISON BEST.