(Model.)

W. A. McCANN.

LOCK.

No. 448,986. Patented Mar. 24, 1891.

Fig. 1

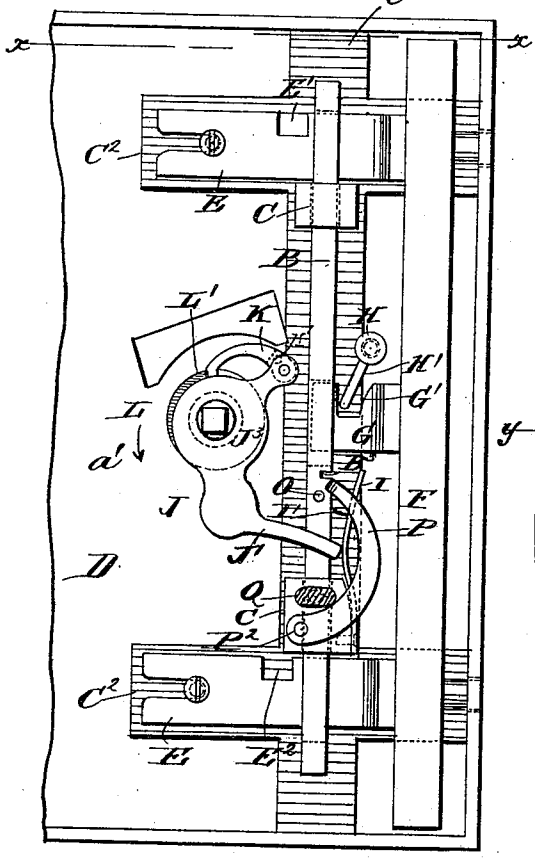


Fig. 2

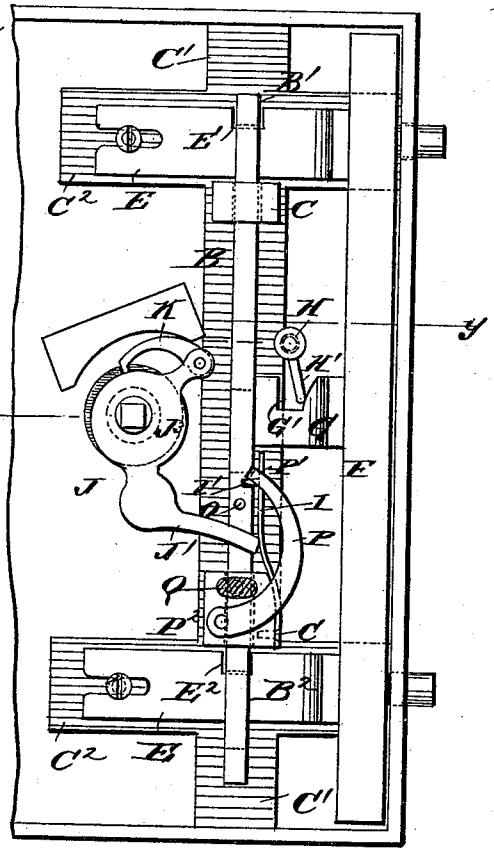


Fig. 3

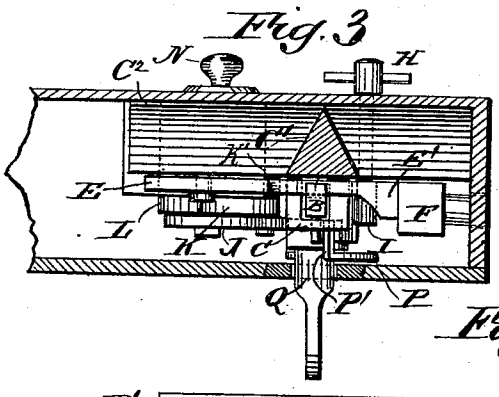


Fig. 4

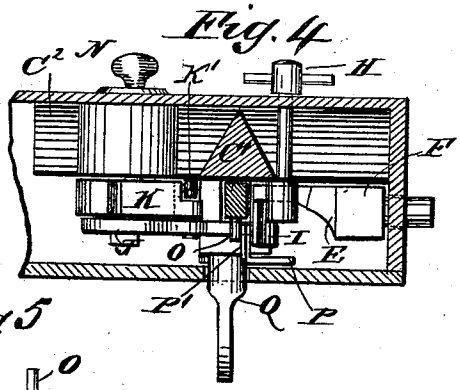
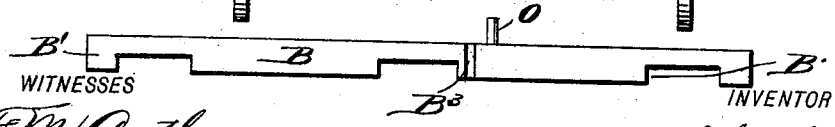


Fig. 5



WITNESSES

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WILLIAM A. McCANN, OF JACKSONVILLE, FLORIDA.

LOCK.

SPECIFICATION forming part of Letters Patent No. 448,986, dated March 24, 1891.

Application filed June 18, 1890. Serial No. 355,868. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM A. McCANN, of Jacksonville, in the county of Duval and State of Florida, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved lock specially designed for safe and other heavy doors, which is simple and durable in construction, very effective in operation, and burglar-proof.

The invention consists of a bar fitted to slide vertically and adapted to engage the locking-bolt and a spring-catch adapted to engage the said bar and controlled from the combination-lock.

The invention also consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the improvement as applied to the inside of a safe-door, the locking-bolts being withdrawn. Fig. 2 is a like view of the same with the locking-bolts in an outer position. Fig. 3 is a sectional plan view of the improvement on the line $x\,x$ of Fig. 1. Fig. 4 is a like view of the same on the line $y\,y$ of Fig. 2, and Fig. 5 is a side elevation of the bar.

The improved lock A is provided with a bar B, fitted to slide vertically in suitable bearings C, formed on a side of a triangular steel bar C′, secured to the inside of the door D, on which the lock is to be applied. The inner corner of the bar C′ abuts onto the face of the door, so that in case the latter is tampered with by burglars boring the door the drill will break in coming in contact with the sharp corner. On the upper end of the bar B is formed an inner lug or projection B′, and a similar lug or shoulder B^2 is formed near the lower end of the said bar.

The lugs B′ and B^2 are adapted to engage correspondingly-shaped notches E′ and E^2, respectively, formed in the locking-bolts E, fitted to slide horizontally in suitable bearings secured or formed on branch arms C^2, extending from the bar C′ and shaped like the latter. The two locking-bolts E are connected with each other by a connecting-bar F, from the middle of which extends an arm G, having a notch G′, engaged by the bit H′ of a knob H, mounted to turn in the door D and extending to the outside of the latter, so as to manipulate the locking-bolts from the outside in locking or unlocking the door.

In one side of the bar B is formed a notch B^3, adapted to be engaged by a lug I′, formed near the free end of a spring I, secured on one of the bearings C. The spring I is adapted to be engaged by the end of an arm J′ of a bell-crank lever J, pivotally connected by its other arm J^3 with a pawl K, adapted to engage notches L′ in the tumblers L of a combination-lock N of any approved construction and applied to the door D in the usual manner. The bell-crank lever J is preferably fulcrumed on the spindle of the combination-lock N, but may be fulcrumed on the inside of the door D.

The arm J^3 of the bell-crank lever J is made partly in disk form, as is plainly shown in Figs. 1 and 2, so as to cover as much as possible the tumblers L from the inside. The swinging motion of the pawl K in one direction is limited by a stop-pin K′, secured to the door D, as is plainly shown in Fig. 4.

On the front of the bar B is secured a pin O, adapted to be engaged by the arm J′ of the bell-crank lever J, so as to move the bar B in an uppermost position when the tumblers L of the combination-lock N are turned in the direction of the arrow a', so that the pawl K is carried along by the said tumblers and the arm J′ of the bell-crank lever J swings upward into contact with the pin O to move the latter and the bar B upward.

The operation is as follows: In the position shown in Fig. 1 the locking-bolts E are withdrawn, and when the operator now desires to lock the safe he closes the door D and turns the knob H, so as to move the arm G, with the connecting-bar F and the bolts E, outward in the usual manner. When the bolts are in their outermost position, the notches E′ and E^2 register with the lugs B′ and B^2 of the bar B, and as the latter is free it drops downward by its own weight, so that the lugs B′ and B^2 engage the said notches and lock the bolts in place. The operator then manipulates the

combination-lock so as to swing the arm J′ downward to permit the lug I′ to drop into the notch B^3, so that the bar B is held in place even if the safe should be turned upside down, and an unlocking of the bolts is prevented. When the operator desires to open the door, he first sets the combination-lock N to the proper position, so that the tumblers L are engaged by the pawl K, after which the combination-lock is turned in the direction of the arrow *a′*, so that the bell-crank lever J swings and the arm J′ moves upward and its outer end presses on the spring I to withdraw the lug I′ of the said spring from the notch B^3. At this moment the arm J′ engages the under side of the pin O, so that a further upward movement of the said arm lifts the bar B to disengage the lugs B′ and B^2 from the notches E′ and E^2 of the bolts E, and the latter are now free to be moved inward by turning the knob H in the proper direction, so as to unlock the door. In order to hold the bar B unlocked by the spring I during the time that the door is frequently opened and closed, an arm P is provided, having a projection P′, adapted to engage the free end of the spring I, so as to move the latter outward—that is, the lug I′ away from the bar B. The arm P is fulcrumed at P^2 on the lower bearing C and is adapted to be operated on by an eccentric knob Q, mounted to turn in the bearings C and set from the inside of the door.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a safe-lock, triangular-shaped bars forming bearings on one face for bolts and locking-bar and secured to the door with one corner abutting on the inner face thereof, substantially as shown and described.

2. In a lock, the combination, with a bar fitted to slide vertically and adapted to engage the locking-bolt, of a spring-catch adapted to engage the said bar and controlled from the combination-lock, substantially as shown and described.

3. In a lock, the combination, with a bar fitted to slide vertically and adapted to engage the locking-bolts, of a spring-catch adapted to engage the said bar, and a bell-crank lever for disengaging the said spring-catch from the said bar and moving the latter upward and provided with a pawl connecting it with the combination-lock, as set forth.

4. The combination, with the horizontal bolts notched in their upper edges, a vertical bar rigidly connected at its ends to said bolts and provided between its ends with the arm G, having a notch G′, and a knob provided with a bit entering said notch, of a vertically-movable bar having lugs to enter the bolt-notches, a spring-catch to lock the bar from being raised, and means for releasing the catch and raising the bar from the combination-lock, substantially as set forth.

5. In a lock, the combination, with a bar fitted to slide vertically and adapted to engage the locking-bolts, of a spring having a lug adapted to engage a notch in the said bar, a pin projecting from the said bar, and a bell-crank lever adapted to engage the said spring and the said pin and controlled by the combination-lock, substantially as shown and described.

6. In a lock, the combination, with the bolt, the locking-bar therefor, and a spring-catch to engage said locking-bar, of a pivoted arm adapted to engage the free end of the said spring-catch to release it and hold it out of engagement with the bar, and an eccentric knob adapted to engage the said pivoted arm, substantially as shown and described.

WILLIAM A. McCANN.

Witnesses:
HORACE G. LIVINGSTON,
FRANK B. LAND.