No. 640,217. Patented Jan. 2, 1900.

T. A. L. MOORE.

COMBINED LOCK AND LATCH.

(Application filed Feb. 20, 1899.)

(No Model.)

Fig. 1.

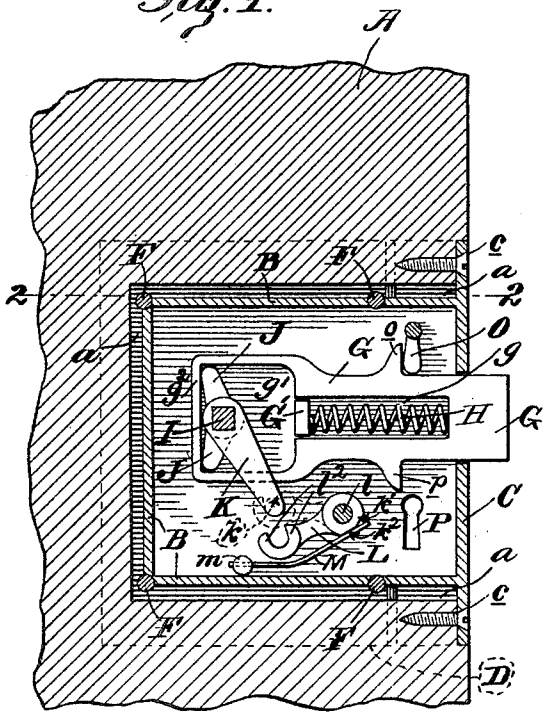


Fig. 3.

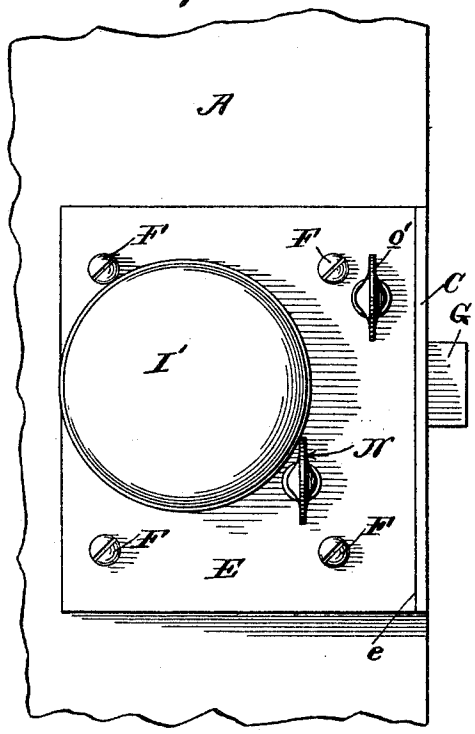


Fig. 2.

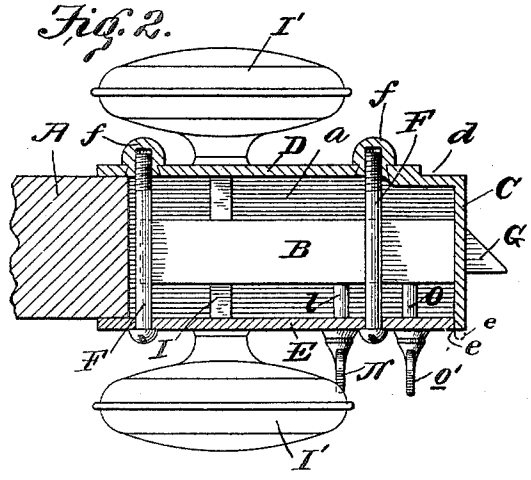
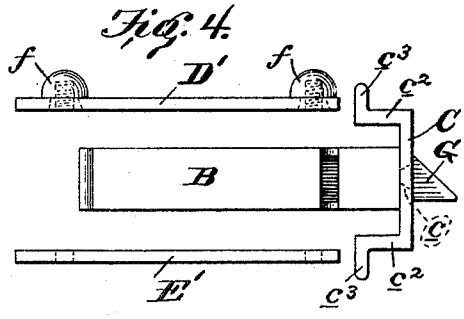


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS A. L. MOORE, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF TO ADDISON J. SILVERWOOD, OF SAME PLACE.

COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 640,217, dated January 2, 1900.

Application filed February 20, 1899. Serial No. 706,174. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. L. MOORE, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in a Combined Lock and Latch and Securing Means Therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in a combined lock and latch and to improved means for securing the same upon a door or similar place, and is particularly applicable to that style of lock commonly known as a "mortise-lock."

My invention has for its objects to provide a lock of the general character mentioned with a sliding member acting as both latch and bolt and with means for holding the operating knob or handle of said bolt and latch, so that the said handle or knob cannot be moved to throw the bolt or latch, while at the same time the said bolt or latch can be operated by means from within when the lock is applied to an outside door and whereby the said bolt or latch can be operated by proper key from without, while the said handle or knob remains in its locked or inoperative position.

Another object of my invention is to provide the lock with means whereby the same can be applied to a door or the like to replace the so-called "mortise-lock" without requiring the nicety of operation, care, and time usually found necessary in the application of a mortise-lock to a door or the like.

Another object of the invention is to generally simplify and improve the construction of a lock and latch of the character specified.

With these and other objects in view my invention is embodied in the improved combination lock and latch, the means for securing the same in place, and the parts, arrangement, and combinations of parts hereinafter specified, and particularly set forth in the claims.

In the accompanying drawings I have shown a practical embodiment of the several parts of my improved lock and latch, but desire it understood that I do not limit the invention in its useful applications to the particular constructions which for the sake of illustration I have therein illustrated.

In the said drawings, Figure 1 is a vertical sectional view of a portion of a door, showing my improved lock and latch applied thereto. Fig. 2 is a horizontal sectional view on line 2 2 of Fig. 1. Fig. 3 is an elevation showing the securing means for the lock. Fig. 4 is a view showing a slightly-different securing means.

Referring to the drawings, wherein like reference characters refer to like parts throughout the several views, A indicates a portion of the front of a door to which the lock is applied, as and to replace the so-called "mortise-lock." It will be observed that the door in its front edge is provided with a hole or opening *a*, extending entirely through the door in contradistinction to a mortise made in the front edge of the door. This hole or opening *a* can easily and quickly be made by simply making a couple of saw cuts or kerfs at sufficient distances apart to permit the working parts of the lock being placed in the opening made by removing the wood between said saw-cuts.

B represents a lock-casing which is of substantially the same size as the opening *a* and is secured to or provided with an edge plate C, which is adapted to fit and be secured to the front edge of the door in any suitable manner, as by screws inserted through screw-holes *c c* in the upper and lower part of the edge plate C, into the wood of the door above and below the opening *a*.

D indicates a side plate which, as shown in Fig. 2, is made integral with edge plate C. This plate D is of sufficient size to completely cover the opening *a* and may be plain, as illustrated in the drawings, or of any desired design or configuration to present a neat or fanciful appearance. The plate D, which is preferably the outside plate, has at its forward edge a rabbet *d* to bring the outer face of the forward portion of the plate flush with the surface of the door in order that the door can be shut and the plate D not form an obstruction by striking the door-strike.

E represents a plate of a sufficient size to

completely cover the opening *a* and which is intended to be applied to the inside face of the door and which may be, like plate D, of any suitable design or configuration. The plate E is separate or detached from the edge plate C and abuts slidably against the inner edge or face of said plate, as indicated at *e*.

F represents securing screws or bolts for securing the said plates D and E with the lock to the door, and any suitable number may be provided.

From the drawings it will be seen that the screws F are so located that the lock, with the screws and plates in place, can be slipped into the opening *a* in the door, thus obviating the necessity of making independent screw-holes in the door, which require time and nicety of workmanship to make them register with the screw-holes in the securing-plates and lock. The screws F preferably pass freely through holes in the inner plate E and engage screw-threaded knobs or portions *f* on the outer plate D, which are rigid with the plate D and effectually prevent tampering with the screws or bolts F.

I am aware that I am not the first to provide a lock with a securing case or means on the outside of the door; but I believe I am the first to make one plate separate from the others and engaging the rear edge or face of the edge plate C. By this construction it will be seen that when the lock is slipped in the opening, as above described, it is simply necessary to tighten the screws F, which will cause the plates D to bind on the door around the opening *a* and securely hold the lock and various parts in position. The fact that the plate E is separate from the end plate and slides relatively thereto permits of the door being completely finished, painted, varnished, &c., before the lock is applied and the slight differences in the thickness of doors caused by the finishing thereof compensated for by the movable plate E, and a tight clamping effect can at all times be had. If desired, a rib or flange *c'* may be provided on the edge of the front plate C, against which the plate E abuts to give a proper finish and at the same time allow a slight movement of the plate E.

In Fig. 4 I have shown the front plate C' provided with the rearwardly-extending flanges c^2, each having an outwardly-projecting rib c^3. In this construction the plates D' and E' are each shown detached from the front plate C'. In other respects the construction illustrated in this Fig. 4 is similar to that shown in the other figures.

I will now describe the construction of my combined lock and latch mechanism.

G indicates a sliding latch and lock bolt and is shown provided with a longitudinal slot *g*, which is enlarged at the rear, as shown at *g'*.

G' is a projection or stud on the casing of the lock, projecting into the slot *g*, and between this stud or projection and the forward solid portion of the bolt is a spring H, which tends to force the bolt outward to throw it into the socket in the lock-strike.

I is a shaft passing through suitable openings in the lock-casing and in the plates D and E. This shaft may be, as is usual in locks, square or polygonal in cross-section and is provided at the opposite sides of the door with suitable handles or knobs I', secured in any preferred manner. Fixed on this shaft I within the enlarged portion of the slot *g'* and adapted to engage the rear part g^2 of the bolt is a barrel provided with operating-lugs J, adapted upon the turning of the shaft I in either direction to operate the bolt, as is common in many locks. Secured also to shaft I is an arm K, which projects to one side, as shown in the drawings, below the bolt F and is provided with a finger or projection *k*. Pivotally mounted in the lock-casing at *l* is a locking or holding lever L, provided with shoulders l^2, adapted to engage said finger *k* and hold the shaft I through the medium of the arm K from turning to throw the bolt or latch.

M is a spring secured in any preferred manner to the lock-casing, as at *m*. The free end of this spring is adapted to engage either of the two faces *k'* and k^3 on the said lever L and hold the latter either in position to engage and hold the arm K or away therefrom to permit the free movement of said arm. Suitable means for operating this lock-lever are provided on the inside of the door and, as shown, may be a thumb-latch, (indicated at N.) This latch is secured to the lever L in any suitable manner to permit of the detachment thereof from said lever.

O indicates an operating-lever which is pivotally mounted in the casing in position to engage a shoulder or lug *o* on the bolt or latch G and is adapted by the turning thereof on its pivot to retract said bolt or latch. Any suitable operating-handle or thumb-piece, such as *o'*, is provided on the inside of the door.

P indicates a keyhole in the lock-casing in register with a similar keyhole in the outer plate D. Adjacent this keyhole on the bolt or latch G is a lug or shoulder *p*, adapted to be engaged by a suitable key inserted through said keyhole to retract the bolt or latch. Any suitable guards or tumblers may be provided to prevent the use of an unauthorized key; but I do not deem it essential to a correct understanding of my invention to show the same.

In most combined locks and latches of which I am aware in which a single latch and lock bolt is employed the locking means engages a part carried by the bolt and does not hold the latch-operating handle or knob to prevent operation thereof, but permits the throwing of the latch or lock bolt. It will be seen that in my construction the knob-shaft I is held and the bolt can be thrown while the knob is held, either from the inside by the operation of the lever O or from the out-

side by means of a key inserted through the keyhole P.

In case the face-plates are not of sufficient thickness to permit of the rabbet *d* being made by reducing the thickness of the plate the edge of the door, as shown, is provided with a corresponding rabbet, (indicated at a^2.)

It is obvious that, if desired, the lock mechanism can be mounted directly on one of the face-plates and the lock-casing proper dispensed with.

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

1. The combination of a door provided with an opening extending therethrough, of a lock located in said opening, an edge plate secured to said lock and to the edge of said door, an inside and an outside face-plate of a size to extend beyond the edges of said opening one of which is detached from said edge plate, and screws or bolts connecting said inside and outside plates adapted to clamp the plates to the door and to secure said lock in place, substantially as described.

2. The combination with a door provided with an opening extending therethrough, of a lock located in said opening, an edge plate secured to said lock and to the edge of said door, an outside face-plate secured to said edge plate, an inside face-plate separate from said edge plate and slidably abutting against the inner face or edge of said edge plate, said face-plates being of a size to extend beyond the edges of said opening and binding-screws connecting said face-plates and adapted to clamp the same to said door and secure the lock in place, substantially as described.

3. The combination with a door provided with an opening extending therethrough, of a lock located within said opening, an edge plate secured to said lock and to said door edge, face-plates covering said opening in the door and extending beyond the edges thereof separated from said edge plate and slidably abutting against the inner or rear edge of portions of said edge plate, binding-screws connecting said face-plates located so as to be slipped with said lock into said opening and adapted to clamp the said plates to the door and secure the lock in position, substantially as described.

4. The combination in a combination lock and latch, of a sliding bolt, a knob-shaft and means for throwing said bolt, a lock device for holding said knob-shaft, operating means independent of the knob-shaft for throwing said bolt from the inside of the door, and means for throwing said bolt from the outside while said handle or knob-shaft is held from operation, substantially as described.

5. In a combined lock and latch, the combination of a bolt, a handle or knob-shaft for throwing the bolt, an arm secured to said knob-shaft, a lock-lever adapted to engage said arm and hold the knob-shaft from rotation, means for operating said lock-lever, a device adapted to engage a portion carried by said bolt to throw the same, an operating-handle for said device on the inside of the door and independent of said knob-shaft, and a portion carried by said bolt and adapted to be engaged by a key from the outside for throwing the bolt, substantially as described.

6. In a combined lock and latch, the combination of a casing, a sliding bolt in said casing, a knob-shaft passing through said casing, a barrel on said shaft having lugs for drawing said bolt, an arm secured to said barrel, a locking-lever provided with an operating-handle and having shoulders adapted to engage said arm and hold said barrel and shaft from turning, a lever provided with an operating-handle and adapted to engage a shoulder on said bolt to throw the same, and a second shoulder on said bolt adapted to be engaged by the key from the outside of the door for throwing the bolt, substantially as described.

7. In a combined lock and latch, the combination of a casing, a sliding bolt in said casing, a knob or handle-shaft passing through said casing, a barrel on the shaft having lugs for throwing the bolt, an arm secured to said barrel at one side of said bolt and provided with a finger, a pivoted locking-lever provided with an operating-handle and shoulders adapted to engage said finger and hold said arm, a lever provided with an operating-handle adapted to engage a projection on said bolt to throw the same, and a projection on said bolt adapted to be engaged by a key from without for drawing said bolt, substantially as described.

8. In a combined lock and latch, the combination of a casing, a sliding bolt in said casing, a knob-shaft passing through said casing, a barrel on said shaft having lugs for throwing said bolt, an arm secured to said barrel, a pivoted locking-lever provided with an operating-handle and having shoulders adapted to engage said arm and hold said barrel and shaft from turning, a lever provided with an operating-handle and adapted to engage a shoulder on one side of said bolt to throw the same, and a shoulder on the opposite side of said bolt adapted to be engaged by a key from the outside of the door for throwing said bolt, substantially as described.

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

THOS. A. L. MOORE.

Witnesses:
A. J. SILVERWOOD,
EDWIN P. COX.