

(No Model.)

2 Sheets—Sheet 1.

A. T. GREEN.
LOCK.

No. 584,348.

Patented June 15, 1897.

FIG. 1.

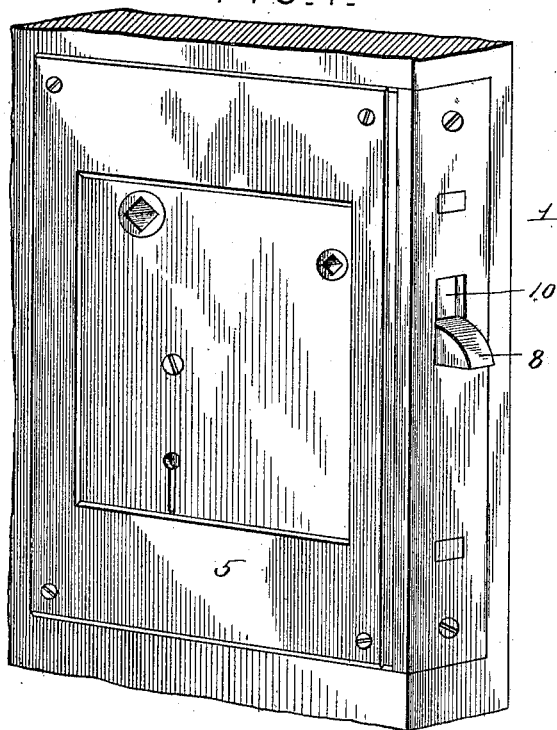


FIG. 2.

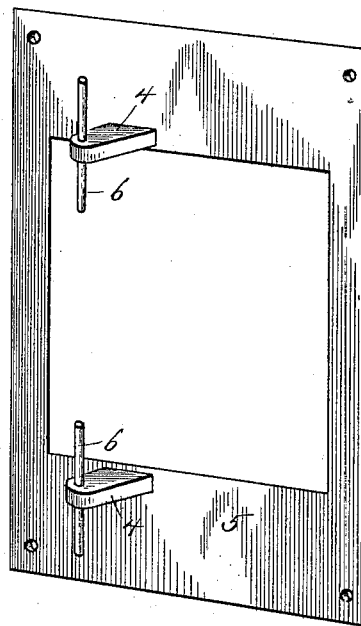


FIG. 3.

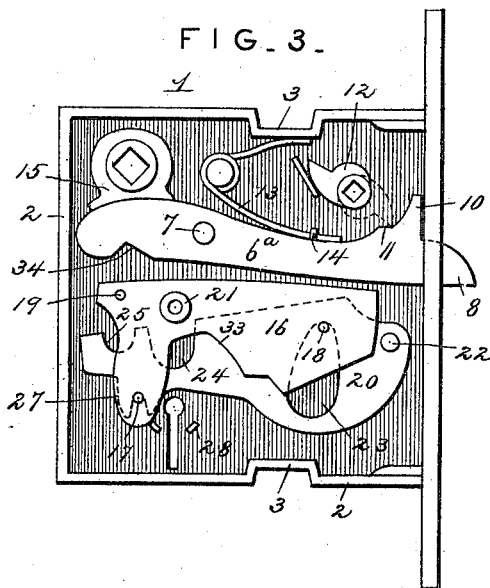
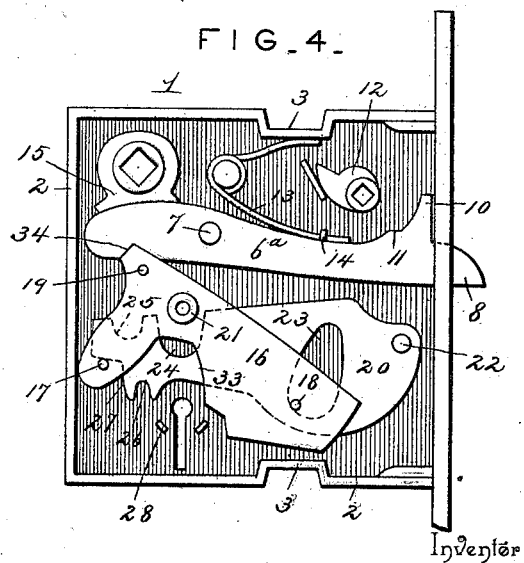


FIG. 4.



Witnesses

Harry L. Ames,
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By His Attorneys,

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 5.

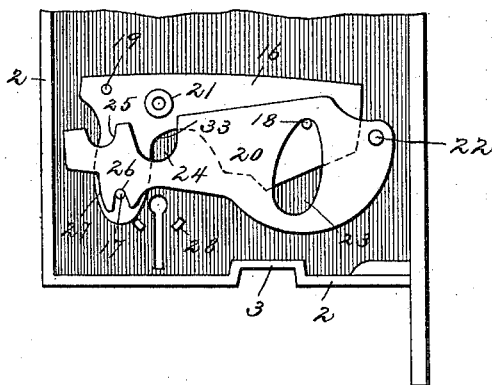


FIG. 6.

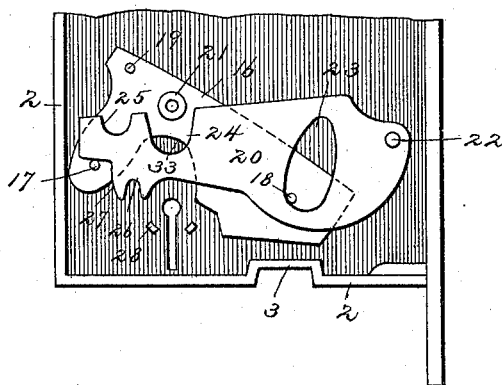


FIG. 7.

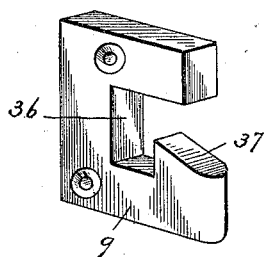


FIG. 8.

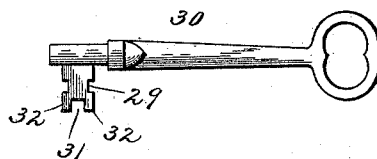
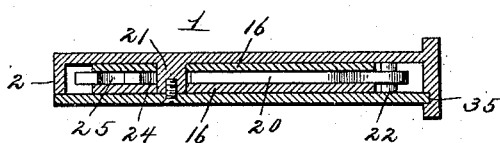


FIG. 9.



Inventor

Allison T. Green.

Witnesses

Harry L. Amer.
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By his Attorneys,

C. Snow & Co.

UNITED STATES PATENT OFFICE.

ALLISON T. GREEN, OF JEWELL, KANSAS, ASSIGNOR OF ONE-HALF TO
AMMON KUNS, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 584,348, dated June 15, 1897.

Application filed March 17, 1896. Serial No. 583,610. (No model.)

To all whom it may concern.

Be it known that I, ALLISON T. GREEN, a citizen of the United States, residing at Jewell, in the county of Jewell and State of Kansas, have invented a new and useful Door-Lock, of which the following is a specification.

This invention relates to an improvement in combined latches and locks, and has for its object to provide a simple, inexpensive, and efficient construction of mortise-lock which shall be adapted to be applied to either side of the door, at the same time obviating the necessity for cutting away the tenon of the central rail to such an extent as to materially weaken the door.

A further object of the invention is to combine with the lock-case a reversible face-plate of neat or ornamental design, whereby an attractive appearance is given to the lock and the necessity for entirely embedding the lock-case within the door obviated.

Other objects and advantages of the invention will appear in the course of the subjoined description.

To accomplish the objects above mentioned, the invention consists in certain novel features and details of construction and arrangement of parts whereby certain advantages in point of simplicity and efficiency are attained, as hereinafter fully described, illustrated in the drawings, and finally embodied in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a door with the improved lock and face-plate shown applied thereto. Fig. 2 is a detail perspective view of the reversible face-plate. Fig. 3 is a side elevation of the lock with the adjacent side plate removed to show the interior construction, the parts being in position to allow the pivoted latch to be operated by the door-knob. Fig. 4 is a similar view with the locking-lever shown in engagement with the pivoted latch. Fig. 5 is a detail view of the locking-lever and tumbler, the adjacent side plate or half of the locking-lever being omitted, the parts being shown as they appear when the locking-lever is thrown out of engagement with the pivoted latch. Fig. 6 is a similar view with the parts in the position they occupy when the pivoted latch is en-

gaged by the locking-lever. Fig. 7 is a detail perspective view of the keeper. Fig. 8 is a view of the form of key used in connection with the improved lock. Fig. 9 is a horizontal section through the lock-case, showing the manner of securing the removable case-plate.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates the lock-case, which is composed, as usual, of front and rear plates of the required size, one of said plates having formed integrally therewith a surrounding flange 2. This surrounding flange is depressed or deflected inward at corresponding points in the top and bottom edges of the lock-case, as indicated at 3, to form sockets or recesses for the reception of an oppositely-disposed and correspondingly-located pair of lugs 4 on a face-plate 5.

The face-plate 5 is made in the open rectangular form illustrated in Fig. 2, the opening therein being sufficient in size to comprise the keyhole and cams of the lock-case for permitting the insertion of the key and knob-shanks, &c. The face-plate 5 may be made of any desired material and ornamented and finished in any preferred manner, according to the taste of the manufacturer.

The lugs 4 are made of sufficient length to extend slightly beyond the opposite side of the lock-case, where they are perforated to receive locking-pins 6, which bear against the lock-case and hold the latter and the face-plate in fixed relative position. It will be apparent by this construction and the particular arrangement of the lugs 4 and the sockets in the lock-case for the reception of such lugs that the face-plate is rendered reversible or applicable to either side of the lock-case. In this manner it will be seen the lock is perfectly adapted to be applied to either edge or side of any door, thus forming either a right or a left hand lock. The face-plate also serves another very important function. It entirely covers and extends across and over the mortise in the door made for the reception of the lock-case, and being held in place by stout screws serves to compensate

for the weakening of the door caused by mortising the same, as described.

Within the lock-case and at a point slightly above the center thereof is mounted a pivoted latch 6 upon a stud or pivot 7. This pin or stud fulcrums the latch 6 intermediate its ends, the longer arm of the latch extending forwardly toward the front plate of the lock and the short arm thereof toward the rear of the lock-case. The pivoted latch is provided at its front end with a nose 8, which projects through a vertically-elongated slot or aperture in the front plate of the lock-case and is adapted to engage with the keeper 9. The pivoted latch is also provided near its front end with an upwardly-extending lug 10, which lies adjacent to and inside of the slot in the front plate of the lock-case and serves as a guard for preventing dust, dirt, &c., from entering the lock. This lug 10 is notched, as indicated at 11, to be engaged by a cam projection on a hub or cam 12, mounted within the lock-case and adapted to be turned into and out of engagement with the pivoted latch by means of a suitable shank and thumb-piece and finger-grip thereon, arranged upon the inside of the door and serving the purpose of an ordinary night lock or latch, as it will be apparent that when said cam is thrown into engagement with the pivoted latch it will be impossible for the latter to be vibrated or rocked out of engagement with its keeper.

13 designates the latch-actuating spring, which is preferably composed of a single piece of wire coiled at its central portion to surround a pin or stud arranged at a suitable point within the lock-case above the latch, one arm of said spring bearing against the latch and being guided by a pair of pins 14 and the other arm of said lever bearing at any convenient point against the surrounding flange of the lock-case. The tension of this spring is exerted to force the pivoted latch downward at its front end, as indicated in the drawings.

15 designates a double cam which is provided with a square perforation for the reception of the usual knob-shank. This cam is so disposed with relation to the pivoted latch that it will operate upon the rear or short arm of said latch in whichever direction the knob is turned for depressing the rear end of the latch and elevating the front end thereof for lifting the same out of engagement with the keeper.

16 designates the locking-lever, which is composed of twin plates, as shown, connected at three points by means of pins or rivets 17, 18, and 19. These pins are shouldered to hold the twin plates of the locking-lever 16 a sufficient distance apart to enable a tumbler 20 to work freely between them.

The locking-lever 16 is mounted upon a stud 21 in rear of the vertical center of the lock-case, while the tumbler is pivoted near its forward end upon a pin or stud 22 near the front plate of the lock-case. The tum-

bler is provided with an elliptical-shaped slot or aperture 23, in which the pin 18 of the locking-lever may work back and forth, and is also provided with a notch 24 in its upper edge, which is adapted to embrace and receive the stud 21 as said tumbler is moved upward. The tumbler is also provided in its upper edge and near its free swinging end with a notch 25 for embracing and receiving the pin or rivet 19 of the locking-lever. The tumbler is further provided with a pair of lugs extending downwardly from its free swinging end and forming a deep notch 26 for embracing and engaging the pin 17 of the locking-lever. The outer face of the rear lug forms a vertical shoulder 27, which is adapted to engage with and form a stop in connection with said pin 17 for holding the locking-lever in positive engagement with the pivoted latch in the manner illustrated in the drawings.

28 indicates a pair of lugs or projections formed on the inner adjacent faces of both of the main plates of the lock-case, the location of which may be varied to suit the location of notches 29 in the wing of the key, (indicated at 30.) The wing of the key is also provided with an open notch 31 in its outer end, which is adapted to embrace the tumbler 20, the prongs or extensions 32 on either side of said notch being adapted to bear against the edges of the twin plates of the locking-lever.

33 indicates the notch in the lower portion of the locking-lever and extending upwardly toward the stud 21, in which the wing of the key is adapted to operate for throwing the locking-lever into or out of engagement with the pivoted latch.

The operation of the lock is as follows: With the parts in the position indicated in Figs. 3 and 5 the key is inserted and turned, which operates first to lift the tumbler sufficiently to throw it out of engagement with the pin or rivet 17 of the locking-lever. Upon turning the key further the wing thereof operates within the wing-notch of the operating-lever and swings the latter in such manner as to throw the rear upper corner thereof into engagement with a correspondingly-shaped notch 34 in the lower face of the rear short arm of the pivoted latch. Upon turning the key so as to remove it from the lock the tumbler is allowed to fall, which brings the shoulder 27 of the tumbler in front of the pin 17 of the locking-lever and effectually prevents the latter from being thrown out of engagement with the pivoted latch except by the use of the key. With the parts in the position indicated in Figs. 4 and 6 the key is again inserted and turned in the opposite direction, whereupon it will lift the tumbler sufficiently to remove its shoulder 27 from in front of the pin 17 of the locking-lever. The wing of the key is now permitted to swing the locking-lever into the position indicated in Figs. 3 and 5, whereupon and upon the further turning of the key the notch 26 by the gravitation of the tumbler will engage said

pin 17 of the locking-lever, thus firmly locking said lever in the position shown in Figs. 3 and 5. It will thus be seen that the locking-lever is itself locked in position and prevented from vibrating by means of the notched tumbler. It will be apparent also that a lock constructed in accordance with this invention will be very difficult to pick by reason of the particular arrangement of the tumbler between the twin plates of a double locking-lever.

The inner face of the front plate of the lock-case is provided with a vertically-extending groove 35, extending the entire height of the lock-case proper, said groove being adapted to receive the front edge of the removable plate of said lock-case. This plate is provided with a keyhole-slot in alinement with a corresponding slot in the other main plate and with circular apertures for engaging the hubs of the cams 12 and 15. The plate is secured in place and prevented from escaping by means of a screw passing through a perforation therein and into a threaded socket in the stud 21, upon which the locking-lever is mounted. The keeper 9 may be made in any desired form, being provided, essentially, with an angular or L-shaped slot 36, as shown, and with an inclined lug or stop 37, behind which the nose of the pivoted latch engages, the upper face of said lug 37 inclining downwardly and outwardly, as shown, to permit the latch to be automatically lifted thereby.

It will be apparent that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a lock, the combination of a latch piv-

oted between its ends and having its inner edge notched, a key-operated locking-lever and tumbler about equal in length to the latch, placed side by side and pivoted at opposite ends, the inner end of the locking-lever adapted to engage with the notched edge of the latch and having a lateral extension, and the tumbler having a shoulder and a pair of lugs at its inner end to engage with the said lateral extension of the locking-lever, substantially as described for the purpose specified.

2. In a lock, the combination with the latch, of a locking-lever comprising twin plates spaced sufficiently apart to receive between them a tumbler, and a tumbler pivotally mounted within the lock-case and working between said twin plates and provided with a notch for engaging a pin on said locking-lever for holding the latter out of engagement with said latch, said tumbler having also a shoulder for engaging said pin on the locking-lever for holding the latter in engagement with said latch, all arranged and combined substantially in the manner and for the purpose set forth.

3. In a lock, the combination with the lock-case provided with oppositely-disposed notches in its top and bottom edges, of a reversible face-plate provided with lugs for engaging said notches in the lock-case, said face-plate being adapted to cover the mortise in the door and to render the lock capable of being applied to either side or edge of any door, substantially in the manner specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALLISON T. GREEN.

Witnesses:

JNO. M. HUTCHISON,
WILL E. FULLER.