

J. W. KOONS.
LOCK AND LATCH.

Patented May 17, 1892.

[illegible]

This diagram shows a perspective view of a lock mechanism. It includes a handle with a circular head, a keyhole, and internal components labeled G, G', G'', and B. The handle is shown in a partially open position, revealing the internal mechanism. The keyhole is located on the front of the handle. The internal components are labeled G, G', G'', and B, which correspond to the parts described in the text.

Witnesses
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UNITED STATES PATENT OFFICE.

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LOCK AND LATCH.

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To all whom it may concern:

Be it known that I, JOHN W. KOONS, a citizen of the United States of America, residing at Lehighton, in the county of Carbon and State of Pennsylvania, have invented certain new and useful Improvements in Locks and Latches; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in combined locks and latches; and the invention consists in the construction, combination, and organization of parts, whereby a combined lock and latch can be so constructed that it may be used for a right and left hand door and as a mortise-lock.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a combined lock and latch constructed in accordance with my invention. Fig. 2 is a plan view with the covering-plate removed. Fig. 3 is a detail perspective view showing the thumb-latch for operating the knob-spindle and the knob of the latch carried by the same escutcheon. Fig. 4 is a detail perspective view of the latch-spindle and parts, showing the connection thereof. Fig. 5 is a side elevation of Fig. 4. Fig. 6 is a detail view, partly in section.

A designates the lock-casing, which may be of ordinary construction, with an opening through which the latch B passes, said latch being connected to the lock-casing by the stud b. This latch is formed in the segment of a circle and is connected to one end of an angle-arm, at the angle of which is an aperture to receive the stud b. The ends of the latch are beveled, as shown, so that when it is reversed on the arm B' it may be arranged to lock either a right or left hand door, the change being accomplished by turning the latch proper upon the pin which passes through the same and is carried by the arm and then locking the parts together by inserting the pin b'. The angle arm is extended beyond the pivot to bear against a spring C, so as to

normally project the latch beyond the casing. The member B² of the angle-arm extends toward the knob-spindle D, and the upper edge thereof is curved to conform to the shape of the spring, and when the latch is forced within the casing the end of this arm will bear against and bend the spring, so as to give the latch a powerful throw when it is released.

The knob-spindle D carries within the lock-casing a sleeve D', having a lug d, which when the latch is unlocked or free to move may be caused to engage with the member B² of the arm carrying the latch to elevate the same and move the latch within the casing. A lug e is provided to limit the movement of the lug formed on the spindle, said lug e being apertured to receive the screw which holds the face-plate of the lock to the other part of the casing.

f designates a projection formed on the casing, which terminates in a stud or pin f', upon which is pivotally mounted a pawl F, having a weighted end. This pawl is adapted to engage or enter a notch f² in the under side of the latch B, so as to hold said latch against movement.

G designates a knob, which carries a spindle g, having a notched or recessed end and a projecting lug g'. The flange G' at the base of the knob has a notch g², with which a weighted pawl G², carried by the lock-casing, is adapted to engage to hold the knob against movement when desired. Between the face-plates of the lock-casing, so that the ends will lie in the circular apertures therein, is a sleeve H, into which the spindle g, carried by the knob G, passes, the lug g' on said spindle lying in a slot h, said slot being intersected by a recess h', into which is passed a locking-key h², which holds the spindle and sleeve in movable connection. On one side of the sleeve is formed a locking-dog I, having a cam or curved face i and a straight face i', said straight face being adapted to bear against the inner end of the latch and is held in such engagement to lock the latch projected by a pawl K, pivoted on a stud k and provided with a weighted end, which operates the pawl F to release the same. The end of the spindle g may be of any desired configuration to receive a key M, which may be passed through

a suitable escutcheon to engage the spindle and turn the same. The end of the key M can be varied as well as the spindle.

In Fig. 3 of the drawings I have shown the spindle D provided with a lever or thumb-latch, and when such is used it is evident that it can be turned down and held while the fingers are employed to turn the knob G.

When it is desired to fasten the lock so that it cannot be manipulated on the outside of the door, the knob G is turned so as to bring the notch g^2 in contact with the pawl, and when the pawl is in such engagement it will securely hold the locking-dog I against movement and it will be impossible to throw the bolt of the lock even with a key. The locking-dog I, when in engagement with the end of the latch-rests upon a lug n .

In operation, when it is desired to release the latch from the inner side of the door the knob G is grasped and turned, which first causes the lug g' on the spindle g to engage with the upper end of the pawl K, so as to throw it out of engagement with the shoulder n^2 at the end of the cam or locking-dog, after which said locking-dog is turned so that the cam-face thereof will bear against the upper end of the pawl K to operate it to release the pawl F from the latch, so that the angle-arm B' can be operated by the spindle D to retract the bolt. It will be noted that the locking-dog can be placed to remain in the position shown in dotted lines, Fig. 2, and rest against the lug n' , and when placed in such position the bolt can be thrown by turning the knob-spindle without operating the knob G.

With this lock a variety of escutcheons may be used, which may be of different forms or shapes and the lock can be furnished in different styles.

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

1. In a combined lock and latch, a curved latch-bar having beveled ends and reversibly secured to an arm B', having an extended portion B², together with a spindle carrying a sleeve having a lug which is adapted to operate said arm, and a spring adapted to throw the arm in one direction, substantially as shown, and for the purpose set forth.

2. In a combined lock and latch, the combination of a curved latch-bar B, carried by a pivoted arm B', having an extended member with which a lug carried by a sleeve engages, a spindle for turning said sleeve, a weighted pawl adapted to engage with the latch, a locking-dog mounted on a spindle g , having a lug g' , and a pawl K, adapted to be actuated by said lug and the cam-face of the locking-dog, so as to operate the pawl F to release the latch, substantially as shown, and for the purpose set forth.

3. In combination with a movable latch-bar B, a spindle g , having a lug g' , a sleeve II, located within the casing, upon which is mounted a locking-dog, said sleeve having a slot h and an intersecting slot h' for the reception of a key h^2 for retaining the spindle and locking-dog in connection with each other, a pawl K, and a pawl F, said latter pawl being adapted to enter a notch in the latch-bar, substantially as shown, and for the purpose set forth.

4. In combination with a lock constructed substantially as shown and provided with a swinging latch-bar, and a locking-dog I, adapted to be held and locked in contact with one end of a latch-bar, said locking-dog having a sleeve, through which passes a spindle having a lug for releasing the locking means and turning the locking-dog, so that said locking means will be turned upon its pivot to operate the weighted pawl F to release the latch-bar, substantially as shown.

5. In combination with a lock constructed substantially as shown and provided with a knob-spindle carrying a sleeve having a lug for retracting the locking-bolt, and a knob G, carrying a spindle which actuates a locking-dog to release locking-pawls, the knob having a flange with a notch g^2 , in which a pawl G² is adapted to enter to hold the locking-dog in a fixed position against the locking-bolt, for the purpose set forth.

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

JOHN W. KOONS.

Witnesses:

JOHN SEABOLDT,
H. SEABOLDT.