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LOCK.

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Fig. 1.

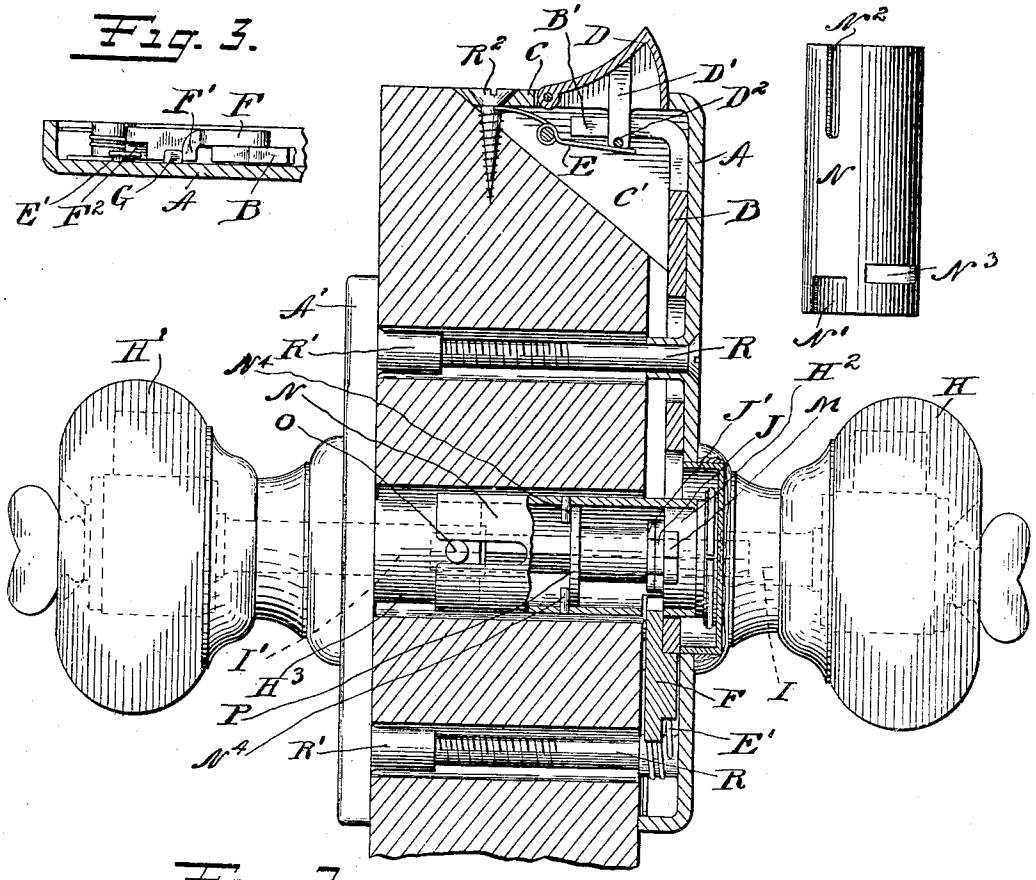
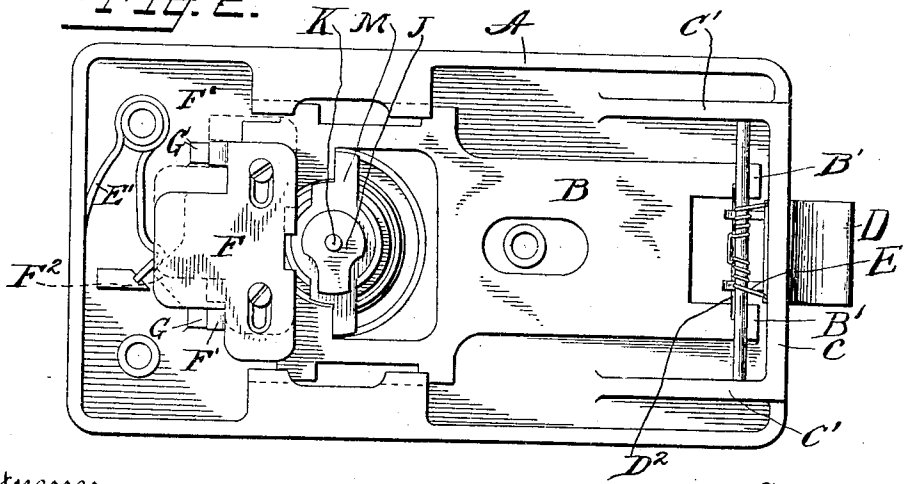


Fig. 4.

Fig. 3.

Fig. 2.



Witnesses

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LOCK.

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To all whom it may concern:

Be it known that we, CHARLES J. CALEY and HENRY G. VOIGHT, citizens of the United States, residing at New Britain, Hartford county, State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

Our invention relates to locks and latches, and particularly to a lock which we term a "semirim-lock," in that it resembles a rim-lock by carrying the latch-slide in a plate adapted to bear against the side of the door, although it differs therefrom in that the latch itself is arranged at the edge of the door, so as to engage a keeper-plate in the edge of the door-casing, instead of on the outer surface thereof, as usual in the ordinary rim-lock. Combined with this improvement there are certain new and useful features of construction whereby the latch is operated by knobs arranged on the outer and inner sides of the door and whereby the mechanism may be dogged or locked against operation whenever desired. There are also features of construction whereby the escutcheon-plates, which carry the aforesaid knobs, may be moved to and fro, whereby the lock may be applied to doors of different thicknesses and without disturbing the operative relation of the parts of the lock mechanism.

In the drawings, Figure 1 is a horizontal section of a portion of a door, showing our lock in position and partly in horizontal section and partly in elevation. Fig. 2 is an elevation of the inside of the latch-slide-carrying plate and the associated parts. Fig. 3 is a longitudinal section of the rear end of the part shown in Fig. 2. Fig. 4 is an elevation of a detail of construction.

A A′ are two independent escutcheon-plates arranged to bear on opposite sides of a door and clamped securely thereon by means of screws R R passed through one plate and taking into bosses R′ R′ in the opposite plate. The plate A is hollowed out on its inner surface to receive a latch-slide B.

C is an end plate, preferably formed integrally with the plate A and arranged to overstand the edge of the door. This end plate C may be reinforced by side ribs C′ C′.

D is a latch moving through the end plate C, while D′ is a latch-slide connection arranged at the rear of the latch D.

E is an easy-spring carried by the end plate and arranged to press the latch D outwardly.

The latch-slide B is hooked at its end, as at B′ B′, to engage with a coupling-pin D^2 on the latch-slide connection D′.

E′ is a heavy spring carried by the plate A and arranged to press against the rear end of the latch-slide, or a part thereof, to advance the same.

Mounted on the latch-slide B is a secondary dogging-slide F, which slide is capable of being reciprocated on the slide B in a direction transverse to the line of movement of the latter. The dogging-slide of course reciprocates to and fro with the latter.

F′ F′ are downwardly-turned horns on slide F, while G G are stops on the plate A adjacent to said horns. When the horns F′ F′ stand in front of the slide B, the slide B cannot be retracted. This position is shown in solid lines, Fig. 2. If the dogging-slide F is moved to the position indicated in dotted lines, Fig. 2, the stops G G will stand out of the path of the horns F′ F′, and consequently the slide B may then be retracted.

To operate the slide F to throw it from its locking position, and vice versa, we provide key-actuated mechanism, which in the preferred form comprises two cylinder-locks, one of said locks being located in each of the knobs H H′, as indicated in dotted lines.

H^2 H^3 are the knob-shanks of knobs H H′, respectively. The knobs H H′ are independent and are each carried by the plates A A′, respectively, in such a manner that they will move to and fro therewith.

The hubs of the cylinder-locks carry spindles I I′, which in turn carry at their adjacent ends the roll-backs J J′, respectively. To insure proper alinement of these roll-backs, we may provide a centering-pin K, the ends of said pin being let into the ends of the spindles I I′. These spindles I I′ are independently rotatable, and either one may be turned by means of a proper key introduced into either lock in the knob H or H′. By turning either spindle I or I′ the roll-back carried thereby may be rotated so as to engage with a suitable shoulder—for example,

formed by the notch L—on the dogging-slide F, whereby said dogging-slide will be shifted in such a manner that its horns F′ F′ will stand in front of the stops G G or to one side thereof.

M is a roll-back carried directly by the shank H^2 of the knob H and engaging with the slide B.

The knobs are connected by a novel coupling, the arrangement being such that the knobs may be moved to and fro when the plates A A′ are moved to and fro without disconnecting said knobs or the associated parts from the mechanism which they are intended to operate. This coupling comprises a tubular sleeve N, slotted at one end, as at N′, to overstand the roll-back M. This sleeve N is also slotted at the opposite end, as at N^2, to receive a pin O, carried by the knob-shank H^3. N^3 is a transverse slot in the sleeve N, into which the edge of the dogging-slide F may project slightly and so as to stand in the path of rotation of the arms on the roll-backs J J′.

From the foregoing it will be seen that the plate A′ and knob H′ may be moved toward or from the plate A and knob H without disconnecting the knob-shank H^3 from the sleeve N. This is permitted by the long slot N^2, in which the pin O moves. In this connection it should be stated that the presence of the edge of the dogging-slide F serves to prevent longitudinal movement of the sleeve N while this adjustment is being effected. On the spindle I′ is placed a washer P, and on the inner side of the sleeve N we provide one or more projections, as at N^4, which serve to bear against the washer P and hold the spindle I′ in place.

To remove the sleeve N, it is merely necessary to rotate the knob H slightly to retract the latch-slide B, which in turn carries back the dogging-slide F, so as to free it from the notch N^3, whereupon the sleeve N may be readily withdrawn. In this special arrangement the knobs H H′ rotate dependently when coupled, and when the dogging-slide F is moved to the locking position it is obvious that both of said knobs are held against rotation, because the latch-slide B cannot be retracted. The knob-shank H^3 is preferably of such length as to allow for the necessary adjustment. The hub of the cylinder-lock carried in the knob H′ is also of sufficient length, as shown in dotted lines, Fig. 1, so that it will in turn permit of the intended adjustment by allowing a sufficient telescopic action between said hub and the spindle I′. If desired, a screw R^2 may be employed to hold the face-plate C tightly against the edge of the door.

In the preferred form the free end of the spring E′ bears on one side or the other of a high point F^2 on the dogging-slide F, whereby the latter will be frictionally held in either of its operative positions. In this respect the spring E′ performs a double function—to wit, that of advancing slide B in addition to the one last mentioned.

In applying the lock to a door it is merely necessary to bore holes to receive the clamping-screws R R and the coupling N and saw out a small notch at the edge to receive the end plate C and side ribs C′ C′.

What we claim is—

1. In a lock, a latch-slide, a knob and connections for operating said slide, a dogging device carried by said slide and means carried by said knob for operating said dogging device to check the movement of said slide.

2. In a lock, a latch-slide, a knob and connections for operating said slide, a dogging device carried by said slide and movable independently thereof and a stop arranged to coact with said dogging device and means operable through said knob for moving said dogging device.

3. In a lock, a reciprocating latch-slide, a knob, a dogging-slide carried by said reciprocating latch-slide said dogging-slide moving in a plane at an angle to that of the latch-slide, a stop coacting with said dogging-slide and means accessible through said knob for operating said dogging-slide.

4. In a lock, a reciprocating latch-slide, means for operating the same to retract it, a dogging device carried by said slide, means for shifting the position of said dogging device into its unlocked or locked position and a spring operating to advance the latch-slide, said spring being arranged to frictionally hold the dogging-slide in either of its operative positions.

5. In a lock, a plate, a latch-slide carried at the inner side thereof, a second plate and means for securing the same to the first-mentioned plate and adjusting said plates to and fro, a knob carried by each of said plates, a lock carried by each of said knobs, means of connection between each of said knobs and said latch-slide, a dogging device, independent roll-backs for operating said dogging device and means of connection between said roll-backs and said locks.

6. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn carrying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back.

7. In a lock, a latch-slide, a dogging device carried by the slide and means comprising two independent alined spindles controllable from opposite sides of the door to operate said dogging device to check the movement of said slide.

8. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn car-

rying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back, a dogging device arranged to coöperate with said latch-slide to engage or disengage the same and independent key-controlled means carried by each of said knobs for operating said dogging device.

9. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn carrying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back, a dogging device carried by said latch-slide and independent key-controlled means for operating said dogging device, said means being accessible from each side of the lock.

10. In a lock, a frame-plate arranged to bear against the outer surface of the door said plate being recessed on its inner surface to receive operating parts, a latch-slide and a roll-back located in said recess, a face-plate arranged to bear against the edge of the door and carried by said side plate, a second plate independent of said first-mentioned plate and said face-plate and arranged to be engaged upon the opposite side of the door, knobs carried by each of said plates said knobs being adjustably connected with each other and in turn being connected with said slide.

11. In a lock, a pair of escutcheon-plates adjustable to and fro, separate knobs carried by each of said plates and movable therewith, a latch-slide carried by one of said plates and means of connection between said latch-slide and each of said knobs, a dogging device arranged to check the movement of said slide and means on opposite sides of the lock for operating said dogging device one of said means comprising a spindle located concentrically with one of said knob-shanks and controllable independently of said knobs.

12. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back connected to said knob and coöperating with said slide, a knob carried by the other plate, a knob-shank carried thereby and projecting therefrom, and adjustable means of operative connection between the knob-shank and said latch-slide, whereby said second plate may be adjusted to and fro with said knob and operative connection maintained between both of said knobs and said latch mechanism.

13. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back operated by said knob and coöperating with said slide, a knob carried by the other plate and in alinement with the first-mentioned knob, a knob-shank projecting from said second knob, and a telescopic connection between the same and the latch-operating mechanism.

14. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back connected to said knob and coöperating with said slide, a knob carried by the other plate, a knob-shank carried thereby and projecting therefrom, and a telescopic connection between the knob-shank and said latch-slide, whereby said second plate may be adjusted to and fro with said knob and operative connection maintained between both of said knobs and said latch mechanism, and a lock carried by one of said knobs, said lock including a rotatable member and means of connection between said rotatable member and the latch-slide.

Signed at New Britain, Connecticut, this 15th day of October, 1904.

CHAS. J. CALEY.
HENRY G. VOIGHT.

Witnesses:
M. S. WIARD,
C. E. RUSSELL.