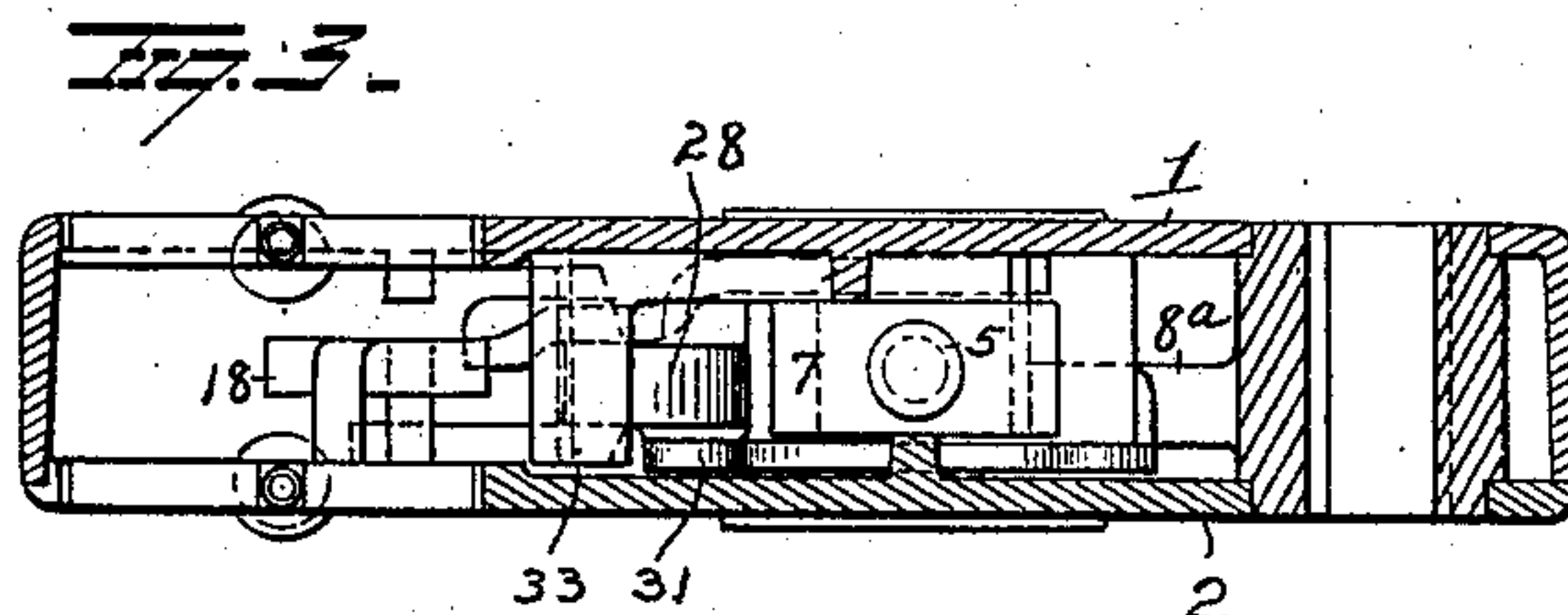
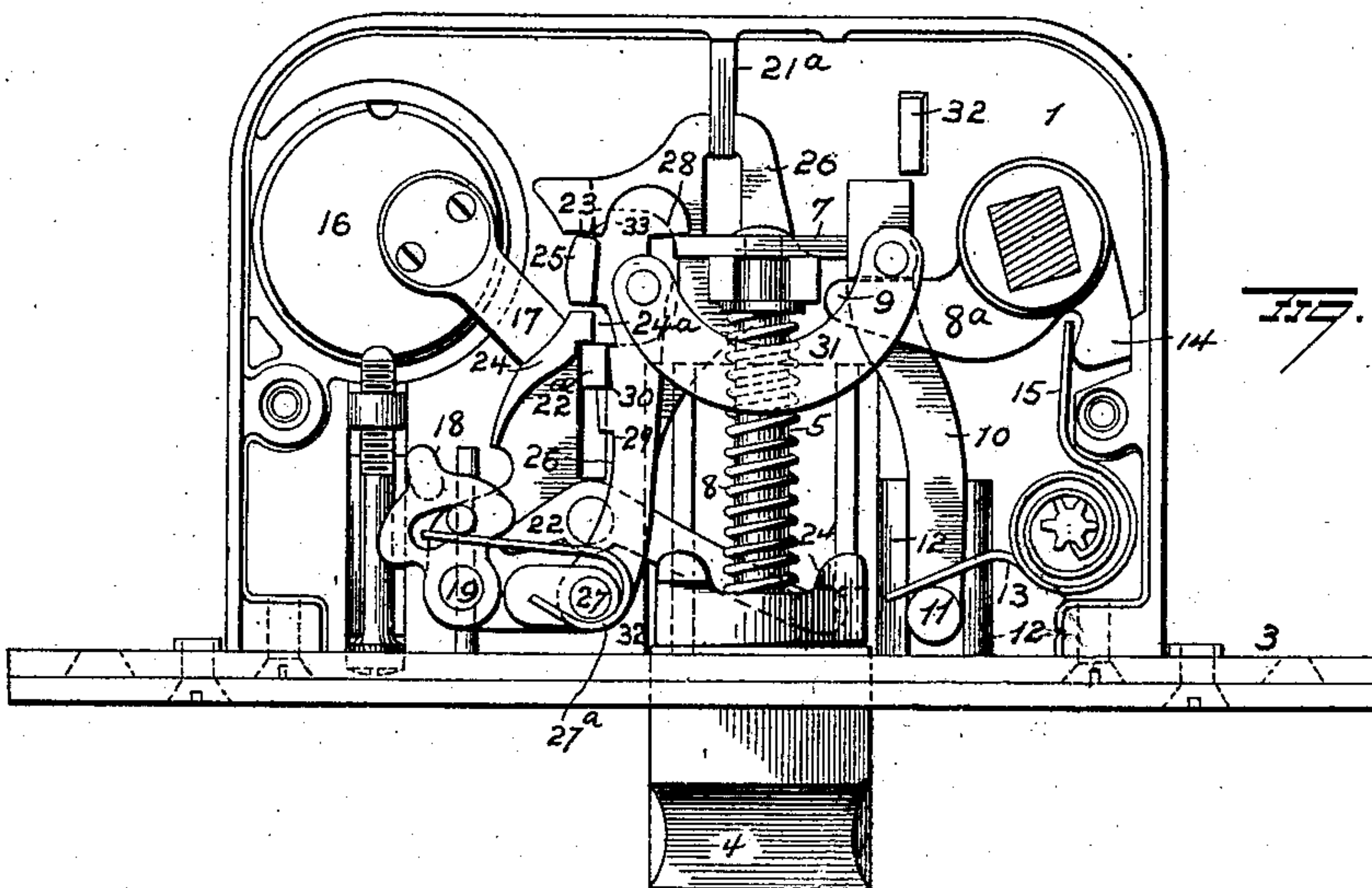
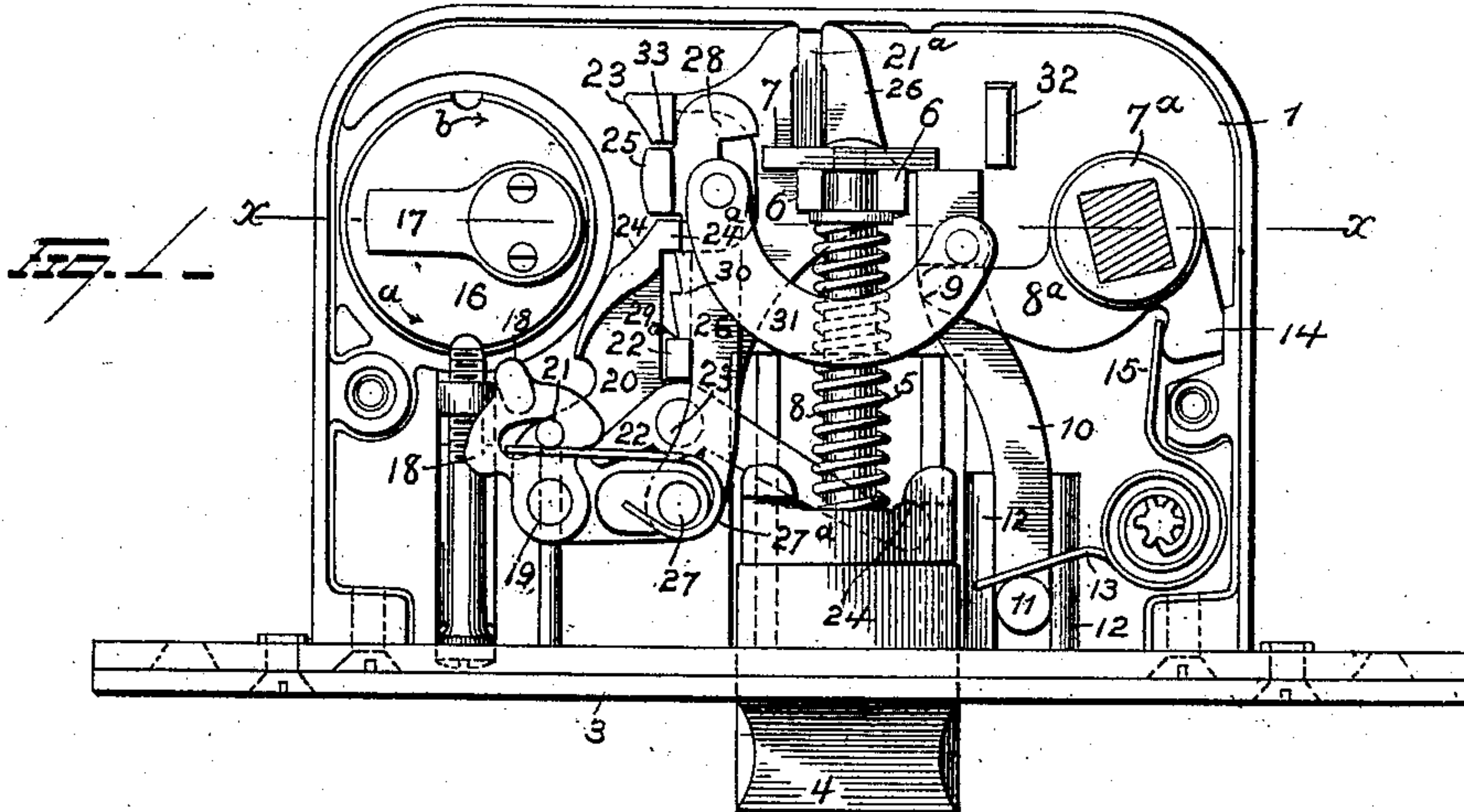


No. 842,442.

PATENTED JAN. 29, 1907.

C. A. BERRY.
MORTISE NIGHT LATCH.
APPLICATION FILED JULY 18, 1906.



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MORTISE NIGHT-LATCH.

No. 842,442.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. BERRY, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain
5 new and useful Improvements in Mortise Night-Latches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in mortise night-latches, the object being to provide the latch with deadlocking mechanism controlled by a cylinder-lock separate
15 and distinct from the latch-bolt-throwing mechanism proper, whereby the holder of the proper key may by turning it in one direction deadlock the latch-bolt against the knob and by turning it in the opposite direction re-
20 lease the dead-lock and by a continued movement in the same direction retract the bolt.

With these ends in view my invention consists, broadly, in a latch-bolt having bolt
25 throwing and retracting mechanism combined with a cylinder-lock adapted when the key of the cylinder-lock is turned in one direction to project the bolt farther into the strike on the jamb of the door and deadlock the latch-bolt and when turned in the oppo-
30 site direction to first withdraw the latch-bolt to its normal position and then by a continued movement in the same direction retract the bolt.

My invention further consists in the parts
35 and combinations of parts as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation of the lock, one side plate of the casing being removed and the
40 latch-bolt shown in its normal position. Fig. 2 is a similar view showing the latch-bolt projected into its deadlocked position; and Fig. 3 is a view in section on the line *x x* of Fig. 1, the key-lock and knob-spindle
45 shown in Fig. 1 being omitted.

1 represents the lock-casing provided with a removable side plate 2 and face-plate 3.

4 is the latch-bolt, the stem 5 of which projects rearwardly between the lugs 6, integral
50 with the carrier 20, and is provided at its free end in rear of said lugs with a cross-head 7, a spring 8, which encircles the stem 5 between the lugs 6 and head of the bolt, tend-

ing to normally hold the head of the bolt in its position for locking.

7^a is the knob-sleeve, having a roll-back
8^a, which latter normally rests on the shoulder 9 of the combined rocking and sliding
bar 10. This bar 10 is provided at its end adjacent to the bolt-head with trunnions 11,
60 one of which rests between the ribs 12 in the casing 1, while the other rests between ribs on the removable side plate and forms a bearing, against which the free end of the
spring 13 rests. This spring 13 yieldingly
65 holds bar 10 in its proper position, but permits it to rock or swing on its trunnion and be moved longitudinally by the roll-back, as will be explained later on.

The knob-sleeve 7^a is provided with a pro-
70 jection 14, against which the spring 15 bears, the tendency of the spring being to force the roll-back 8^a away from the shoulder 9 on the sliding and rocking bar 10.

When the bolt 4 is in its normal position or
75 the position shown in Fig. 1, the inner end of bar 10 rests adjacent to the cross-head 7 on the end of the bolt-shank 5. Hence by rotating the knob-shank in a direction to compress spring 15 the roll-back 8^a, engaging
80 shoulder 9, will move the bar 10 toward the rear, and as the cross-head 7 is in the path of movement of the bar 10 the bolt will be retracted. When the knob is released, the
springs 13 and 15 restore the bar 10 and the
85 roll-back 8^a to their normal positions.

16 is a cylinder-lock of the Yale & Towne pin-tumbler variety or any other preferred form. This lock is provided at the inner end of its rotary member or barrel with the arm
90 17, which latter by its engagement with the parts hereinafter referred to operates to either retract or dog the latch-bolt.

18 is a rocking lever pivoted at its outer end to the lug 19 integral with the carrier 20
95 and restrained in its rocking movements by the lug 21, also integral with the carrier 20 and passing through an elongated slot in the lever. A shoulder of this lever 18 bears against the short arm of the bell-crank lever
100 22, pivoted at 23 to a stud secured to or integral with the carrier 20, the end of the longer member of said bell-crank lever 22 resting in front of a shoulder 24, formed integral with the bolt-head 4. With this construction it is
105 evident that if the arm 17 of the cylinder-

lock 16 be moved in the direction of the arrow *a* its end will engage the inner or free end of rocking lever 18 and move the bell-crank lever 22 in a direction to withdraw or retract the latch-bolt.

The carrier 20 comprises a flat plate or body resting in contact with the inner face of the casing 1 and having slots in which the rib 21^a and stud 22^a, integral with the casing 1, rest, the said rib and stud operating to guide the carrier in its movements. This carrier is provided at its edge adjacent to the cylinder-lock with the two lips 23 and 24, one of which always lies in the path of movement of the arm 17 of the cylinder-lock 16. These lips are separated, as shown, for the entrance between them of the tongue 25 on the dogging-lever 26. This lever 26 is pivotally mounted on stud 27 integral with the carrier 20 and is provided with a spring 27^a, which tends to normally hold the tongue 25 on dogging-lever 26 between the lips 23 and 24 on the carrier 20.

With the parts in position as shown in Fig. 1 if the arm 17 be turned in the direction of the arrow *a* it will engage rocking lever 18 and retract the bolt and be stopped from further movement in that direction by said lever. If, however, with the parts in position as shown in Fig. 1 the arm be turned in the direction of arrow *b* its end will pass lip 23, which in the position referred to is out of the path of movement of arm 17, and engage tongue 25 on the deadlocking-lever 26. As the tongue 25 stands in the path of movement of the arm 17, the continued rotation of arm 17 will push the tongue inwardly, thus turning the dogging-lever on its pivot and permitting the end of the arm 17 to engage the inner edge 24^a of lip 24. The turning of the deadlocking-lever 26 on its pivot carries the shoulder 28 of said lever behind the cross-head 7 on the latch-bolt stem 5 and carries the shoulder 29 on the deadlocking-lever 26 out of contact with the stud 22^a, which, as before explained, is fast to the lock-casing 1. By now continuing the movement of the arm 17 in the direction of arrow *b* the engagement of the arm with the shoulder 24^a on the lip 24 will cause the carrier 20 and all parts mounted thereon to be moved in the direction of movement of the arm 17 or toward the face-plate of the lock. As the shoulder 28 on deadlocking-lever has by the depression of the tongue been moved to a position in rear of the cross-head 7, the outward movement of the carrier 20 and deadlocking-lever 26 thereon will force the latch-bolt outwardly to the position shown in Fig. 2. As the arm leaves the shoulder 24^a on lip 24 the tongue 25 of the deadlocking-lever will be free to move to its position between the lips 23 and 24, thus bringing the shoulder 30 on the deadlocking-lever in front of the fixed stud 22^a, thus absolutely preventing the accidental re-turn of the deadlocking-lever back to its po-

sition shown in Fig. 1, and as the shoulder 28 on the deadlocking-lever is in engagement with the rear of the cross-head 7, as shown in Fig. 2, it follows that the bolt is also deadlocked.

As before explained, the sliding and rocking bar 10 engages the front face of the cross-head for retracting the bolt by the knobs. This bar 10 is connected to the deadlocking-lever 26 by the yoke 31, so that as the deadlocking-lever is shifted by the arm 17 the bar 10 will also be shifted in the same direction, thus carrying the free end of the bar out of the path of the cross-head 7 and in line with the stud 32 integral with the lock-casing 1, thus deadlocking the bar 10 and the roll-back 8 against movement by the knobs.

With the bolt in its projected and deadlocked position, as shown in Fig. 2, the lever 18 rests out of the path of movement of the arm 17, thus permitting the latter to be turned in the direction of the arrow *a* until it engages the tongue 25. The depression of the tongue 25 turns the lever 26 on its pivot until the shoulder 30 on said lever clears the fixed stud 22, thus leaving the carrier 20 and the parts thereon free to be moved back to their normal positions, as shown in Fig. 1. In the continued movement of the arm 17 in the direction of arrow *a* it engages the shoulder 33 on lip 23, thus moving the carrier back to its normal position. During the rearward movement of the carrier the yoke 31 withdraws the bar 10 from the plane of lug 32, thus releasing the bar and permitting the latch-bolt to be retracted by the knobs.

From the foregoing it will be apparent that the latch-bolt cannot be retracted by the knobs when the bolt is in its projected position, as shown in Fig. 2, and that the bolt is projected into its deadlocked position by the rotation of the arm 17 of the cylinder-lock in the direction of arrow *b*. After the bolt has been deadlocked it is restored to its normal position by a rotation of the arm 17 in the direction of arrow *a* and may then be retracted by the key by a continuation of the movement of the arm 17 in the direction of arrow *a*.

It is evident that many slight changes might be made in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction of parts shown and described; but,

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

1. In a latch, the combination with a bolt, and knob mechanism for retracting same, of key mechanism comprising a rotary member engaged by the key and adapted to be rotated thereby and a bolt-retracting lever, the latter adapted to retract the bolt when said rotary member is turned in one direction, and

means actuated by said rotary member when the latter is turned in the opposite direction, to project the bolt beyond its normal latching position, and carry said bolt-retracting lever out of the path of movement of said rotary member.

2. In a latch, the combination with a bolt, knobs, means connecting the bolt and knobs, a rotary member engaged by the key and rotated thereby and a bolt-retracting lever, of means actuated by said rotary member for projecting the bolt into the strike-plate beyond its normal latching position, and into its locking position, and carrying the bolt-retracting lever out of the path of movement of the rotary member, and means for dogging the knob mechanism when the bolt is in its projected or locking position.

3. The combination with a latch-bolt and a movable carrier to which said bolt is slidably connected, of means for shifting the carrier whereby the bolt is projected from its latching to its locking position, and returned to its latching position, and means carried by said carrier and actuated by a key whereby the bolt may be rotated when in its latching position.

4. The combination with a latch-bolt, of a cylinder-lock and parts coöperating with same whereby the rotation of the movable member of the lock in one direction operates to project the latch beyond its normal position and deadlock the same, and rotation of said movable member in the opposite direction, restores the bolt to its normal position and a device actuated by the key mechanism for retracting the bolt, the said devices being movable with the bolt from the normal position of the latter to its locking position and back again to its normal or latching position, and out of the path of the key mechanism when the bolt is in its locking position.

5. The combination with a latch-bolt and a movable carrier to which the bolt is slidably connected, of a cylinder-lock, means actuated by the rotation of the movable member of the latter in one direction for retracting the bolt when the latter is in its latching position, and independent means actuated by said movable member of the cylinder-lock for shifting the carrier and its connected bolt from the latching position of the latter to its locking position and back again to its latching position.

6. The combination with a latch-bolt, and a movable carrier to which the bolt is slidably connected, of a cylinder-lock the movable member of which shifts the carrier and its connected bolt back and forth, means for locking the carrier in its two positions, and means on said carrier and actuated by the key for retracting the bolt when the latter is in its inner or locking position.

7. The combination with a movable carrier, and a latch-bolt having a sliding connec-

tion therewith, of a cylinder-lock, the movable member of which is adapted by a movement in one direction to move the carrier, and project the bolt beyond its normal latching position, and restore the bolt and carrier to their normal positions by a reverse movement, and means on said carrier actuated by the movable member of the cylinder-lock for retracting the bolt when the latter is in its normal or latching position.

8. The combination with a movable carrier and a latch-bolt slidably connected to and movable with said carrier, of key-actuated mechanism for moving said carrier and its connected bolt, dogging means for locking the carrier in its two positions, and bolt-retracting devices mounted on said carrier and adapted to be actuated by the key mechanism when the carrier is in one of its positions and be out of the path of movement of said key mechanism when the carrier is in its other position.

9. The combination with a latch-bolt, of a cylinder-lock, a sliding carrier-plate having separated lips, a lever pivoted to said plate and provided with a tongue normally resting between said lips, and with a shoulder adapted to engage a cross-head on the stem of the bolt, and bolt-retracting means carried by said carrier-plate.

10. The combination with a latch-bolt, of a cylinder-lock, a sliding plate having separated lips, a lever pivoted to said plate and provided with shoulders to engage a fixed stud, with a tongue normally resting between the lips on the plate and with a shoulder to engage the cross-head on the stem of the bolt, and bolt-retracting means also carried by said plate.

11. The combination with a latch-bolt, knob mechanism and a sliding and pivoted bar actuated by the roll-back of the knob mechanism, of a cylinder-lock, a sliding plate having separated lips, a lever pivoted to said plate and provided with shoulders to engage a fixed stud for holding the plate in its two positions, with a tongue normally resting between the lips on the plate and in the path of the arm on the movable member of the lock and with a shoulder to engage the rear face of a cross-head on the stem of the bolt, a yoke connecting said pivoted lever on the plate and said pivoted and sliding bar connected with the knob mechanism, and bolt-retracting means carried by the plate and adapted to be engaged by the movable member of the cylinder-lock, when the sliding carrier-plate is in one of its positions.

12. The combination with a latch-bolt, a carrier to which the bolt is connected, and knob mechanism for retracting the bolt when the latter is in its latching position, of key mechanism for shifting the carrier whereby the bolt is projected from its latching to its locking position and back again to its latch-

ing position, and means carried by said carrier and actuated by the key mechanism whereby the bolt may be retracted by the key when in its latching position.

5 13. The combination with a latch-bolt, and a carrier to which the bolt is connected, of key mechanism for shifting the carrier and connected bolt from the latching position of the bolt to its locking position and back
10 again, means for locking the carrier in two positions and mechanism whereby the bolt may be retracted by the key when the bolt is in its latching position.

14. The combination with a carrier and a
15 bolt connected thereto and movable therewith and also movable independently of said carrier, of key mechanism for moving the carrier and its connected bolt from the normal latching position of the bolt to its locking
20 position and back again, and means for

locking the carrier and dogging the bolt when the latter is in its locking position.

15. The combination with a carrier, and a bolt connected thereto and movable therewith, and also movable independently of said
25 carrier, of key mechanism for moving the carrier and its connected bolt from the normal latching position of the bolt to its locking position and back again, a roll-back for actuating the bolt, and mechanism for locking
30 the carrier, dogging the bolt and dogging the roll-back when the bolt is in its locking position.

In testimony whereof I have signed this specification in the presence of two subscribing
35 witnesses.

CHARLES A. BERRY.

Witnesses:

WM. B. WALLACE,
CHAS. B. BISHOP.