No. 818,719. PATENTED APR. 24, 1906.

N. W. WEBB.

TUMBLER LOCK.

APPLICATION FILED NOV. 1, 1904.

2 SHEETS—SHEET 1.

Fig. 1,

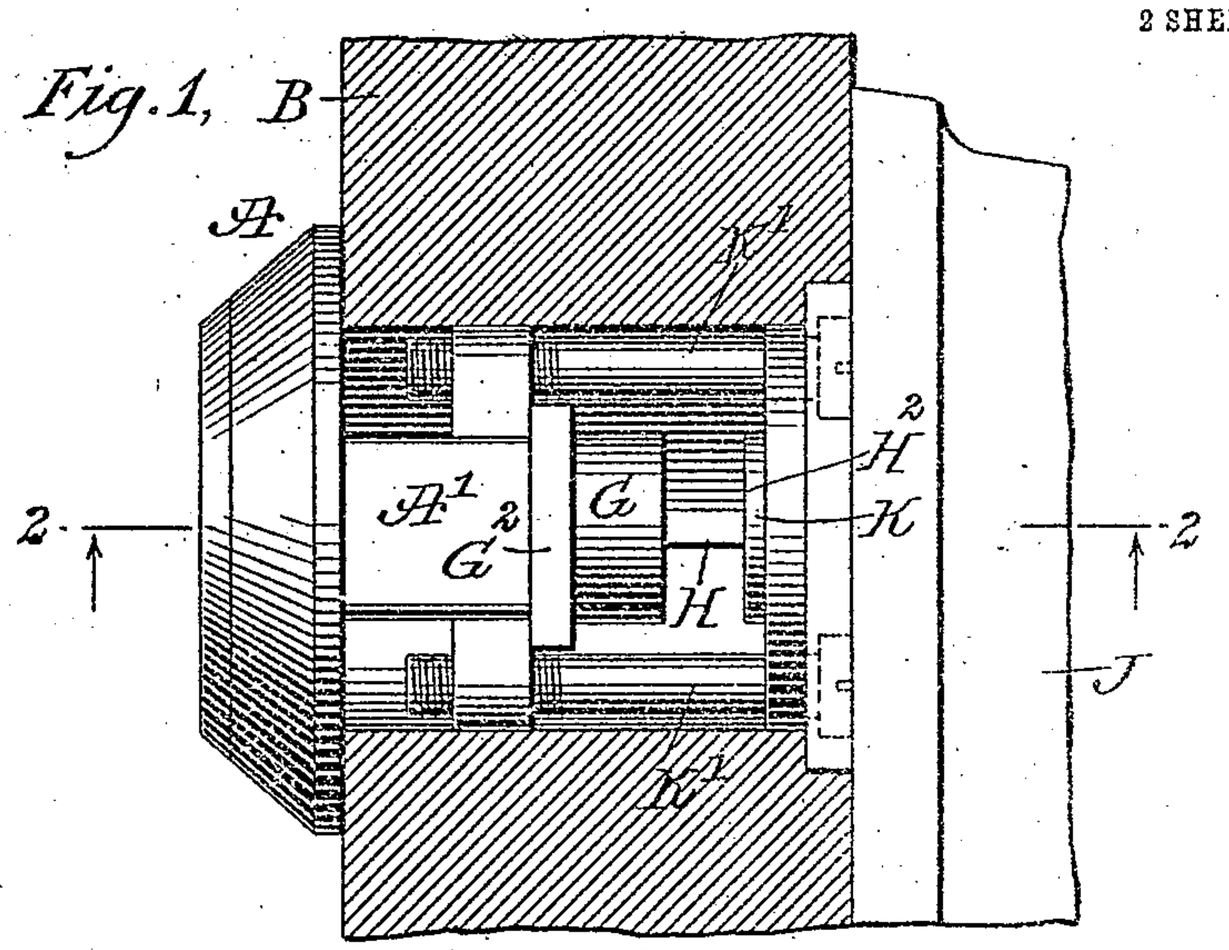


Fig. 2,

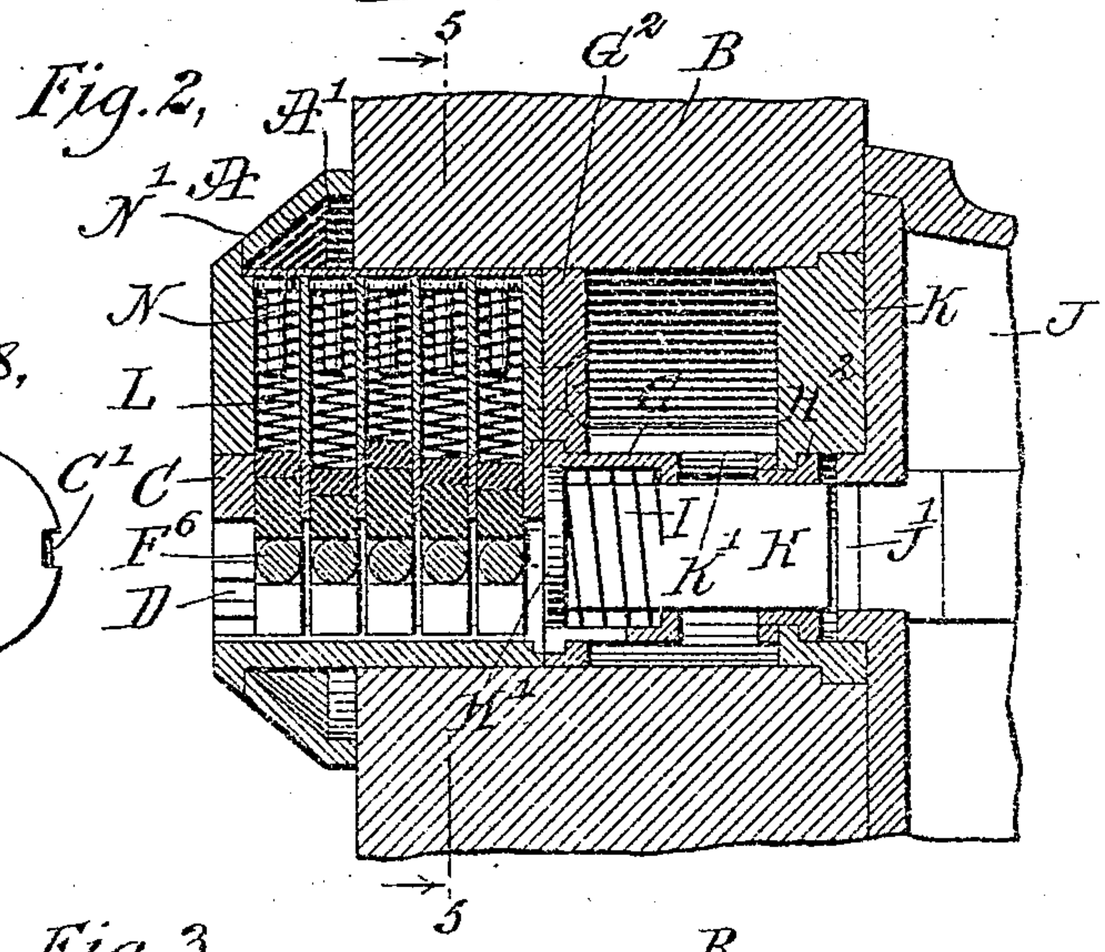


Fig. 8,

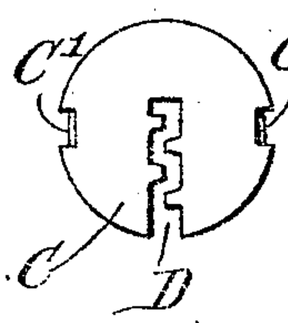


Fig. 9.

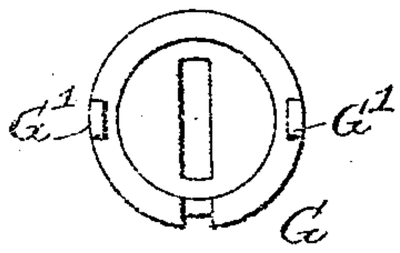
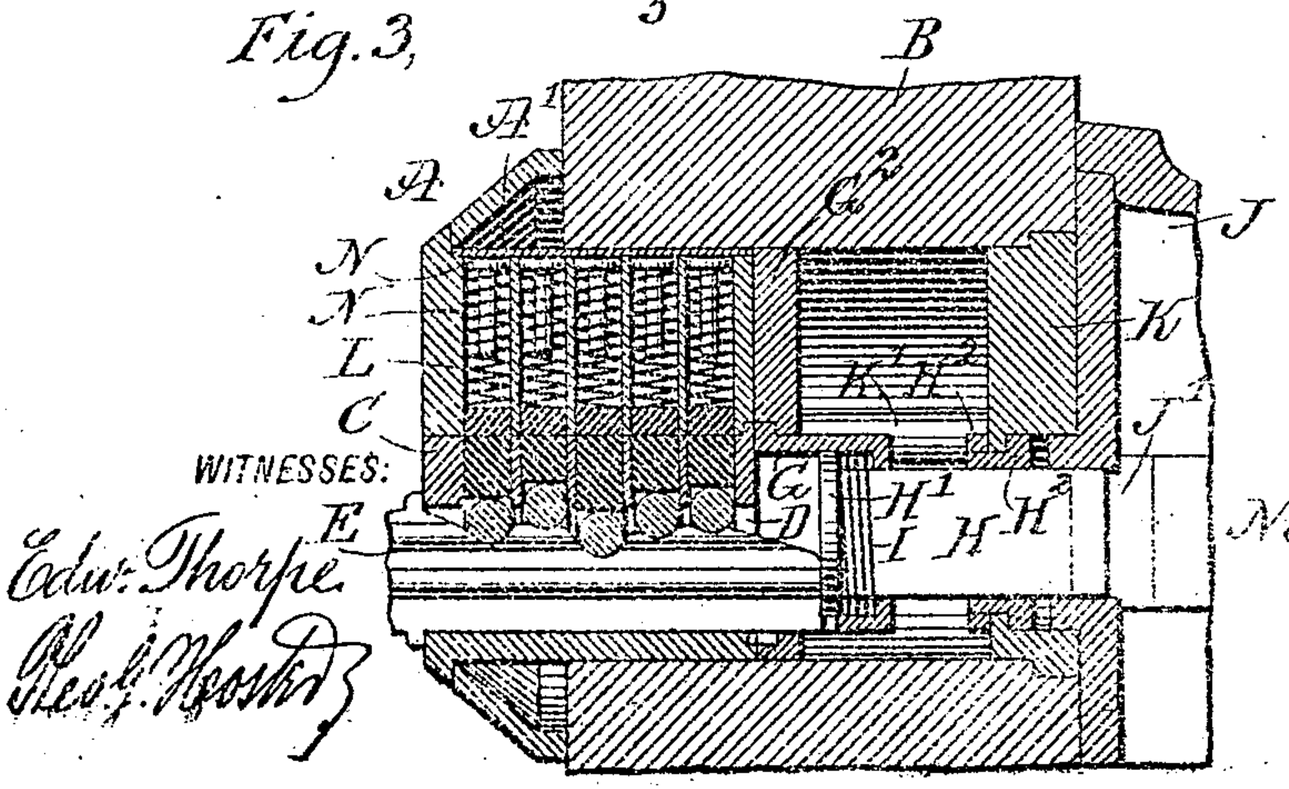


Fig. 3,



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2 SHEETS—SHEET 2.

Fig. 4,

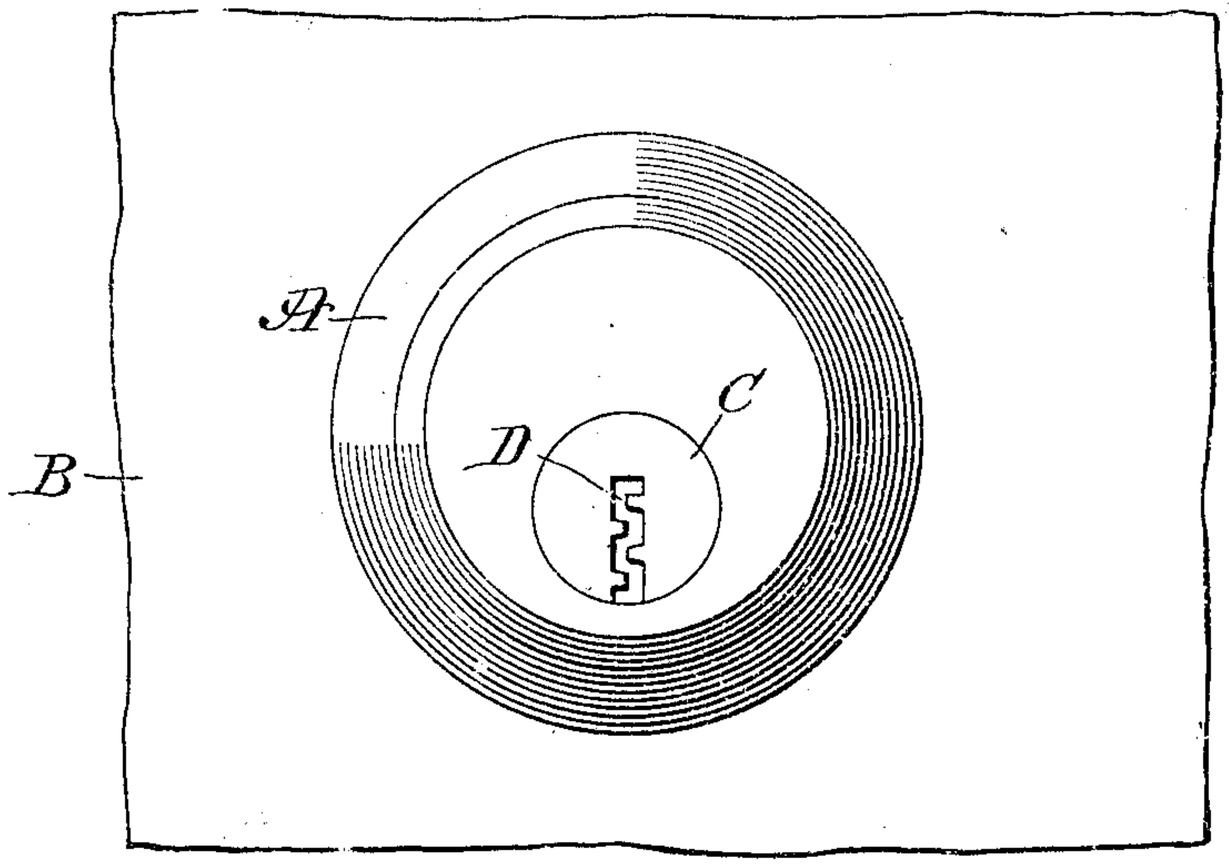


Fig. 5, N^1 A^1

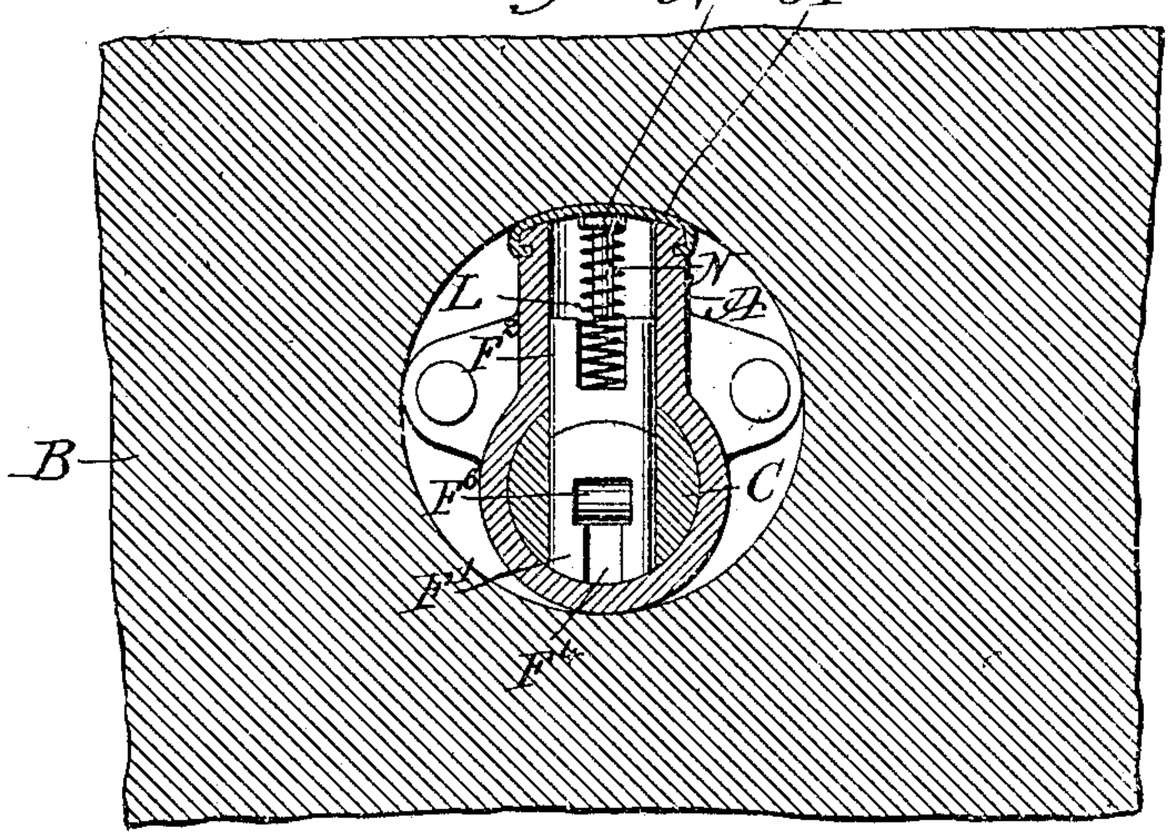


Fig. 6,

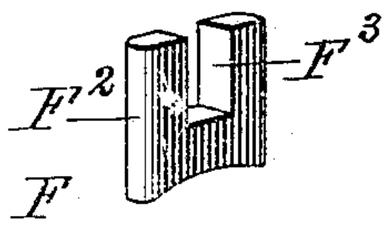
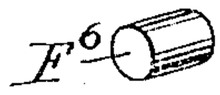


Fig. 7,



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UNITED STATES PATENT OFFICE.

NICHOLAS W. WEBB, OF NEW YORK, N. Y.

TUMBLER-LOCK.

No. 818,719. Specification of Letters Patent. Patented April 24, 1906.

Application filed November 1, 1904. Serial No. 230,005.

To all whom it may concern:

Be it known that I, NICHOLAS W. WEBB, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a new and Improved Tumbler-Lock, of which the following is a full, clear, and exact description.

The invention relates to locks and latches; and its object is to provide a new and improved tumbler-lock more especially designed for use as a latch or dead-lock and arranged to insure proper working of the tumbler-pins, without danger of the same getting out of order, by providing strong and long tumbler-pins and springs, without unduly increasing the size of the plug and keys, to prevent unauthorized persons from actuating the door-lock with a view to unlocking and opening the door.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement as applied to a door, the latter being shown in section. Fig. 2 is a sectional view of the same on the line 2 2 of Fig. 1. Fig. 3 is a transverse section of the same, showing the key inserted and the bit in engagement with the retracting mechanism of the main bolt of the door-lock. Fig. 4 is a front elevation of the improvement. Fig. 5 is a sectional front elevation of the same. Fig. 6 is an enlarged perspective view of one of the tumbler-pins. Fig. 7 is a perspective view of the friction-roller for the tumbler-pins. Fig. 8 is a face view of the rear end of the plug, and Fig. 9 is a face view of the bit-chamber turning with the plug.

In the escutcheon-case A, secured to a door B, is mounted to turn a plug C, having the usual keyhole D for the passage of a key E, employed for bringing spring-pressed tumbler-pins F into proper position to allow of turning the plug C in the case A. The keyhole D opens at its rear end into a cylindrical chamber G, forming a part of the plug C to turn with the latter, and in this chamber is mounted to turn with the plug and to slide in the direction of the axis of the plug C a bit or cam H, held normally in retracted position by a spring I and adapted to be pushed inwardly by the terminal of the key E whenever the latter is inserted in the keyhole D and pushed inward to its full extent, it being understood that the key E is made sufficiently long to push the bit or cam H inwardly against the tension of its spring I, as plainly indicated in Fig. 3. The bit or cam H when pushed inward by the key E engages a recess in the retracting mechanism J′ of the main bolt of a door-lock J of any approved construction, so that the main bolt of the door-lock is retracted on turning the proper key E.

As shown in Figs. 1, 2, and 3, the bit H is rectangular in cross-section and extends through a correspondingly-shaped opening formed in the back of the chamber G, and the said bit is provided with a cylindrical head H′, fitting the interior of the chamber G and adapted to be engaged by the terminal of the key E. The rear end of the bit or cam H is mounted to slide in and turns with a bearing H^2, mounted to turn in a rear face-plate K, let into the inner face of the door B and removably connected with the case A by suitable screws K′, as plainly indicated in Fig. 1.

The forward end of the chamber G is preferably provided with lugs G′, (see Fig. 9,) fitting into corresponding recesses C′ on the inner end of the plug C, so that when the latter is turned the chamber G turns with the plug. A bearing-plate G^2, in which the forward end of the chamber G is mounted to turn, is fastened by screws (see Fig. 2) to the rear end of the case A to allow of removing the bearing-plate G^2 whenever it is desired to gain access to the chamber G, the bit H, and its spring I in case of repairs.

Each of the tumbler-pins F consists of a plug-pin F′ and a driver F^2, and the pins are fitted in suitable pin-chambers formed in the case A and the plug C, the pins being preferably made rectangular in cross-section, and the driver F^2 of the pin is provided in its upper portion with a slot F^3, on the bottom of which is seated a spring L, guided at its upper end on a pin N, having a head N′ for the upper end of the spring to abut against, the said head of the guide-pin N resting against the under side of a cover A′, removably held on the top of the case A (see Fig. 5) to permit of conveniently gaining access to the tumbler-pin chambers in case repairs have to be made.

By the arrangement described an exceedingly long spring L can be employed.

The plug-pin F′ is formed in its lower portion with a keyhole-slot F^4, leading at its upper end into an enlarged recess F^5, containing a friction-roller F^6, adapted to engage the bit edge of the key E whenever the latter is inserted in the lock through the keyhole D and the slot F^4. By having a friction-roller F^6 arranged in each pin and transverse to the entering-key E it is evident that the key can be conveniently inserted in the lock without undue friction, and the tumbler-pins are readily caused to slide up in the pin-chambers by the forward pressure of the bits of the key exerted on the revolving friction-rollers F^6 at the time the key is pushed into the keyhole.

From the foregoing it will be seen that in order to actuate the bolt of the door-lock it is absolutely necessary that the proper key is used, as the bit H has to be pushed inward to engage the said retracting mechanism and then turned to actuate the said retracting mechanism; but the bit cannot be turned unless the plug is first unlocked by the tumbler-pins being moved into proper position by the proper key.

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

1. A tumbler-lock comprising a casing, a plug mounted to turn therein, sectional tumbler-pins slidable in the casing and plug, the plug-pin having a key-slot leading to a recess, and a friction-roller in the said recess.

2. A tumbler-lock provided with a turning plug having a chamber at the inner end thereof, a casing in which the plug is mounted to turn, tumbler-pins, and a normally retracted slidable bit partially received in said chamber, adapted to be turned with the plug on the insertion of a proper key in the lock, said bit being also adapted to be engaged by a portion of the key to project the same into engagement with the retracting mechanism for the main bolt.

3. A tumbler-lock comprising a casing, a plug mounted to turn therein, a spring-pressed bit slidable lengthwise on the plug and turning with the same, and spring-pressed tumbler-pins in the casing and plug, adapted to be engaged by the key the terminal of which engages the said bit for imparting lengthwise movement to the said bit to engage the latter with the retracting device for the main bolt.

4. A tumbler-lock provided with a tumbler-controlled plug having at its inner end a chamber, and a normally retracted spring-actuated bit partially received in the chamber and turning with the plug and adapted to be engaged by the terminal of a key for the latter to impart a sliding motion to the bit.

5. A lock provided with a plug adapted to be turned by a key, and a spring-pressed bit slidable lengthwise on the plug and adapted to be engaged by the key-terminal and shot outward against the tension of its spring.

6. A lock provided with a plug adapted to be turned by a key, a spring-pressed bit slidable lengthwise on the plug and adapted to be engaged by the key-terminal and shot outward against the tension of its spring, and key-controlled means for normally locking the plug against turning.

7. A lock provided with a tumbler-pin comprising a plug-section and a driver, the latter having a slot extending from its top downward, a spring seated in the bottom of the slot, and a guide-pin for the spring, having a head for the spring to abut against.

8. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same and a bearing for the bit to slide in and to turn with.

9. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same, a bearing for the bit to slide in and to turn with, and a rear face-plate in which the said bearing is mounted to turn.

10. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same, a bearing for the bit to slide in and to turn with, and a rear face-plate removably connected with the said case and in which the said bearing is mounted to turn.

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

NICHOLAS W. WEBB.

Witnesses:
THEO. G. HOSTER,
EVERARD BOLTON MARSHALL.