(No Model.)

C. A. DIES.

DOOR LOCK.

No. 535,791. Patented Mar. 12, 1895.

Fig. 1.

Fig. 2.

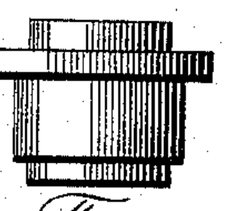


Fig. 3.

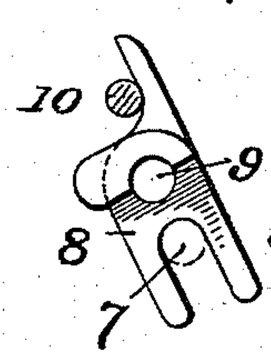


Fig. 4.

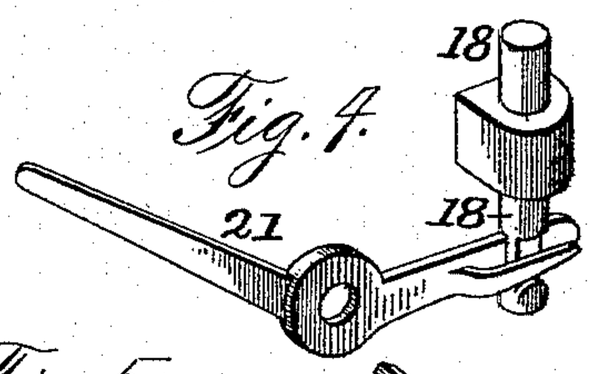


Fig. 5.

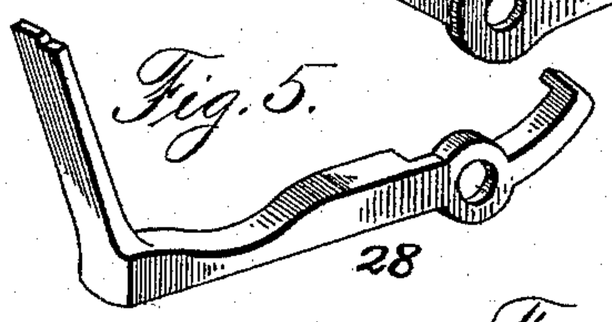


Fig. 6.

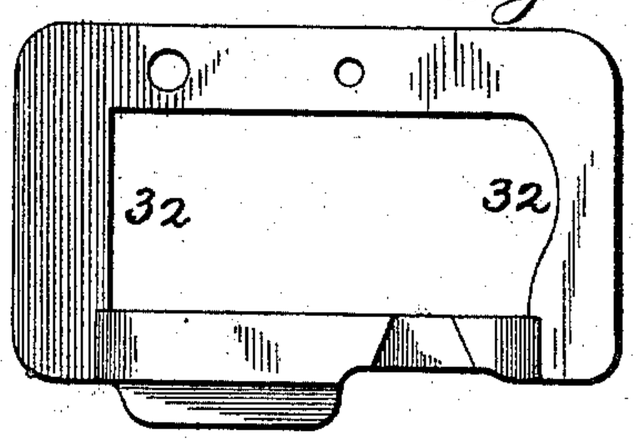
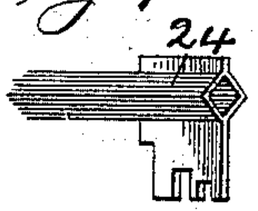


Fig. 8.

Fig. 7.



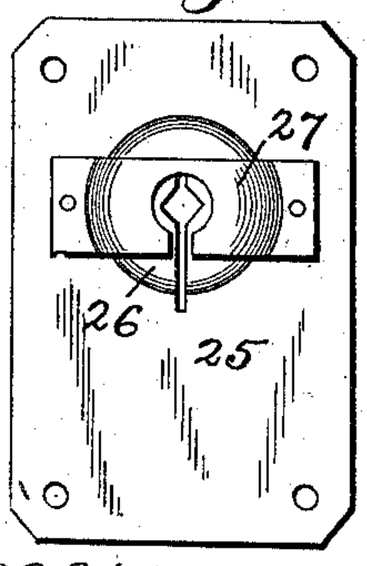
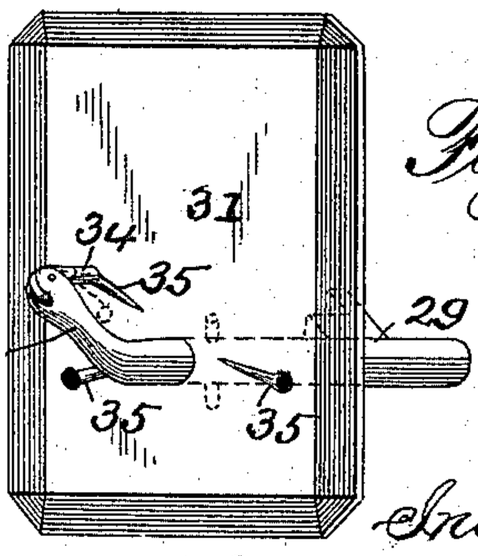


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES A. DIES, OF CHICAGO, ILLINOIS.

DOOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 535,791, dated March 12, 1895.

Application filed September 10, 1894. Serial No. 522,672. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. DIES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Door-Locks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to that type of door locks in which the locking and latching bolts are housed within a casing common to both; and the present improvement has for its objects: to provide in connection with the locking bolt of a spring mechanism for locking the same in its outer position, which mechanism, is under control and operated by the turning of the door key to retract the locking bolt, as will hereinafter more fully appear; also, to provide in connection with the outside key hole, for operating the lock mechanism from that side of the door, by means of a suitable key, of an inside key hole, out of line with said outside keyhole, and adapted to receive an independent key for actuating the lock mechanism, in manner similar to the outside key; also, to provide an improved form of key, and pintle therefor in the interior of the lock that is adapted to release the locking bolt, from the locked condition, prior to effecting a retraction of said bolt in the operation of unlocking the door.

I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1, is an elevation of a lock, with one side plate removed, illustrating my present invention; Fig. 2, a detail side elevation of the spindle arm by which the latch bolt is operated; Fig. 3, a detail elevation of the intermediate lever between the spindle arm and the latch bolt; Fig. 4, a detail perspective view of the locking mechanism for the locking bolt of the lock; Fig. 5, a detail perspective view of the lever by which the lock tumblers, and the bolt locking mechanism are operated; Fig. 6, a detail elevation of the pendent yoke, of the locking bolt, showing the face of such yoke opposite to that shown in Fig. 1; Fig. 7, a detail perspective view of a portion of the ontside key of the lock; Fig. 8, a side elevation of the lock escutcheon; Fig. 9, a detail perspective view of the inside key of the lock, illustrating the means for locking the same in its different positions.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the lock case; 2, the locking bolt, and 3 the spring bolt, forced forward by a spring 4.

5, is the spindle arm, adapted to bear against a projection 6, on the latch bolt to move the same when the door knob is turned in one direction. In the present improvement this arm 5, is extended down below the latch bolt 3, and provided with a pin 7, at its lower end that engages in the slotted end of an intermediate lever 8, fulcrumed at 9, with its upper end adapted to engage against a projection 10, on the side of the latch bar, opposite the projection 6. With this construction a turning of the door knob, and a swinging of the arm 5, in either direction will cause a retraction of the spring or latch bolt 3. The locking bolt 2 is also connected to the latch bolt 3, so as to retract the same when the locking bolt is retracted in unlocking the door. In this 11, is a fixed horn on the lock bolts, that is adapted to engage with the lower ends of a swinging arm 12, pivoted above the latch bolt 3, and having a toe 13, adapted to engage against the projection 14 on the latch bolt. With this construction the locking bolt in its retractile movement only operates the latch bolt. In its forward movement the horn moves beneath the swinging arm 12, without imparting movement to the latch bolt, and the latch bolt is capable of manipulation by the door knobs, independent of the aforesaid connections to the locking bolt.

15, is a spring for holding the arm 12, in proper position against the projection 14.

The locking bolt 2, will be provided with the usual tumblers 16, and spring detents 17, and in addition thereto will be provided with an additional safety appliance as follows:

18, is a vertically moving spring bolt moving in a suitable spring guide, and adapted to engage in an aperture 19, in the main locking bolt 3, and 20, the spring by which it is impelled to such engagement.

21, is the operating lever of the spring bolt 18, one arm of which is forked to engage the

headed lower end of the spring bolt, and the other end adapted to project into the path of a wiper finger 22, on the pintle 23, upon which the outer door key is placed, so as to guide the same in throwing the lock bolt 2, to lock or unlock the door from the outside. In the present invention this pintle and the wiper finger 22, turns with the key, and the shank of the pintle as well as the barrel of the door key 24, are made of non circular shapes, preferably of a square form as shown; and in order to properly guide such door key 24, I provide the outer escutcheon plate 25, with a turning disk 26, having a central opening of the proper non-circular shape to receive the key, and which disk is confined in place by a rider plate 27.

28, is a pivoted lever one end of which engages the lever 21 of the spring bolt 18, the other end of which is bent upwardly so as to engage beneath the tumblers of the lock so as to operate the same, in its movement.

29, is the inside key, turning in the key hole 30, and the inner escutcheon plate 31, and adapted to move the lever 28, and by engagement with the pendent extension 32 of the main locking bolt 2, to operate the same, after having first withdrawn the spring bolt 18, through the instrumentality of the levers 28 and 21.

In the present invention the inner key 29, is out of line with the outer key and preferably is a fixture in the lock, and in my preferred construction as shown in Fig. 9, is provided with an angle portion 33, in which is pivoted a locking dog 34, adapted to engage in the series of radial notches 35, to secure the key at any desired position, either out of the way, so that the lock parts are entirely free to be operated by the outer door key, or to secure such key in a position so that the lock parts cannot be operated by the outer door key.

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

1. In a door lock, the combination of the latch bolt 3, having a projection 14, the locking bolt 2, having a fixed horn 11, the swinging lever 12 having a toe 13 and the spring 15, substantially as set forth.

2. In a door lock, the combination of the locking bolt 2, having an aperture 19, a turning pintle 23, provided with a wiper finger 22, the lever 21, and spring bolt 18, adapted to engage in the aperture 19, substantially as set forth.

3. In a door lock, the combination of the locking bolt 2, having a pendent yoke 32, and an aperture 19, a turning pintle 23 provided with a wiper finger 22, the lever 21, spring bolt 18, lever 28, and inside key 29, substantially as set forth.

4. In a door lock, the lock case provided with outer and inner key holes arranged out of line with each other, in combination with the locking bolt 2, having a pendent yoke or stop portion 32, a permanently arranged inner key 29, turning in the inner key hole 30, of the lock case, and adapted to engage the stop portion 32 of the lock bolt to secure the same against movement, a locking dog 34, on the key 29, and the escutcheon plate 31, provided with radial notches 35, substantially as set forth.

In testimony whereof witness my hand this 29th day of August, 1894.

CHARLES A. DIES.

In presence of—
ROBERT BURNS,
JAMES LAVALLIN.