

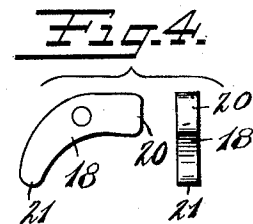
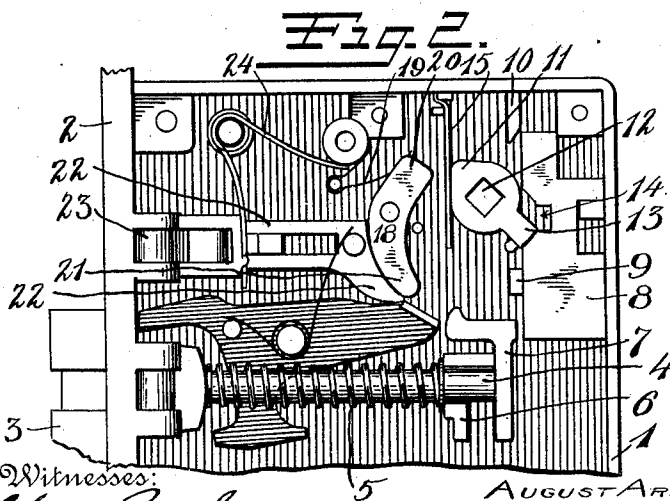
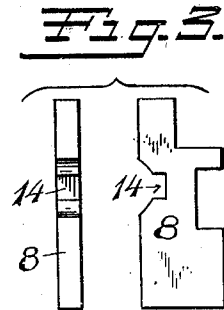
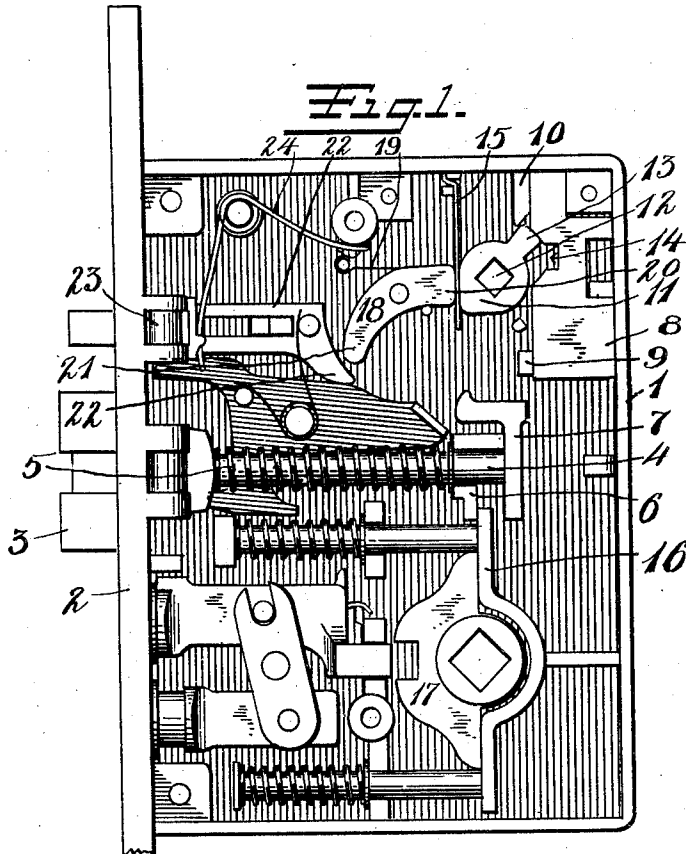
A. ARENS & E. L. TEICH.

LOCK.

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Witnesses:
Chas. A. Reid
Fred. M. Dammelfelser.

Inventors
 AUGUST ARENS
 E. L. TEICH
 By their Attorneys
Carlton Dammelfelser

UNITED STATES PATENT OFFICE.

AUGUST ARENS AND ERNEST L. TEICH, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS
TO P. & F. CORBIN, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CON-
NECTICUT.

LOCK.

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To all whom it may concern:

Be it known that we, AUGUST ARENS and ERNEST L. TEICH, citizens of the United States, residing at New Britain, county of Hartford, 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 is particularly concerned with a lock having a normally spring projected latch bolt and having means for dead locking the latch bolt against retraction from the outside of the door by means preferably of a thumb-turn operable from the inside of the door.

The object of the invention is to provide a lock of this construction, wherein the parts are so arranged that the latch bolt will always be free for retraction when the door is open, so that, should the door be pushed shut without at the same time retracting the latch bolt by means of the knob, said latch bolt will always yield upon coming in contact with the striker-plate and permit the door to close fully; and also to prevent injury to either the latch bolt or the striker-plate by a blow of a rigidly held latch bolt on said striker-plate.

With these objects in view, the invention consists in the construction and arrangement of parts, a preferred embodiment of which is illustrated in the accompanying drawings, in which,

Figure 1 is a side view of a lock embodying the invention with the cap plate removed, showing the interior mechanism; Fig. 2 is a fragmentary view similar to Fig. 1 showing the latch bolt dead-locking mechanism in operative position; Fig. 3 comprises an edge and side view respectively of the latch bolt dead-locking member; and, Fig. 4 comprises a side and end view respectively of the member for blocking the operation of the dead-locking mechanism.

In the embodiment of our invention herein selected for illustration, 1 indicates the lock case, having a face plate 2.

3 indicates a normally spring-projected latch bolt having a stem 4 carrying a coiled spring 5 between the head of the bolt and a guide lug 6 on the lock case, said stem also having a tail-piece 7, with which the cam arm of any suitable construction of cylinder lock may engage to retract the latch bolt.

8 is a latch bolt dead-locking member slidably mounted in the lock case and guided by suitable lugs 9 and 10.

11 indicates a roll-back which is connected by means of a spindle 12 with a suitable thumb-turn (not shown) operable from the inner side of the door. Said roll-back is provided with an arm 13 engaging a notch 14 in the dogging member 8.

15 indicates a spring mounted in the lock case and arranged to contact with suitable cam faces on the roll-back 11 to hold the same in either of its operative positions.

When the dead-locking member 8 is in the position indicated in Fig. 1, the latch bolt may be freely retracted either by the latch bolt retracting yoke 16, which coöperates with the usual roll-back 17 connected with the door knobs (not shown) or by means of a key of the cylinder lock (not shown) in the usual manner. When, however, the dead-locking member 8 has been moved to the position indicated in Fig. 2 behind the tail-piece 7 of the latch bolt, said latch bolt is locked against operation either by the knobs or keys. It is to be observed that before the door can be opened from the inside by the knob, the dead-locking member 8 must be raised to inoperative position as indicated in Fig. 1, thereby releasing the latch bolt.

In order to prevent blocking the latch bolt by means of the dead-locking mechanism when the door is open, and thereby prevent injury either to the latch bolt or striker-plate by the pushing of the door to with the latch bolt rigidly held, means is provided for preventing the turning of the roll-back 11 to move the dead-locking member to operative position when the door is opened. For this purpose is provided a pivoted dog 18 which is normally held by a spring 19 with one end 20 closely adjacent to or in contact with the spring 15 on the side opposite the roll-back as shown in Fig. 1 whereby when said dog is free to stand in the position indicated in Fig. 1, the operation of the roll-back 11 is prevented, and the dead-locking member 8 and roll-back 11 and dog 18 are so relatively arranged that this blocking action takes place only when the dead-locking member is in operative position.

In order to free the blocking dog 18 out of position with respect to the roll-back

when the door is closed, said dog is provided with an arm 21, which lies in the path of the shank 22 of the usual safety member 23, which is employed to prevent retraction of the latch bolt by insertion of a thin blade between the striker-plate and the face-plate in the lock, as is well known to those familiar with this art. When the door is open, the safety member 23 is thrown into projected position by means of its spring 24, thus leaving the blocking dog 18 free to be thrown into operative position by means of its spring 19. When, however, the door is closed, the safety member is retracted by contact with the striker-plate, and the stem thereof engages the arm 21 of the blocking dog 18 and moves the dog into operative position as indicated in Fig. 2.

By the above described construction, it will be seen that while the latch bolt dead-locking member 18 may be freely operated by the thumb-turn when the door is closed, said member must be moved into inoperative position before the door can be opened and will be held locked in such inoperative position as long as the door remains open, thereby invariably leaving the latch-bolt free for retraction by contact with the striker-plate when the door is pushed to.

While we have herein described the preferred embodiment of our invention, it is to be understood that the same may be modified in detail and relative arrangement of parts within the scope of the appended claims.

What we claim is:

1. In a lock, the combination with a spring projected latch bolt, dead-locking means therefor and means for moving the latter to operative position from the inner side of the door, of means for automatically blocking the movement of said dead-locking means into operative position when the door is opened.

2. In a lock, the combination with a spring projected latch bolt, a dead-locking member therefor and means for moving the latter to operative position from the inner side of the door, of means to positively block the move-

ment of said member into operative position when the door is open and means to automatically release said member from said blocking means when the door is closed.

3. In a lock, the combination with a spring projected latch bolt a dead-locking mechanism therefor and means for moving the latter to operative position from the inner side of the door, of means for positively blocking the movement of said mechanism to operative position when the door is open, and a safety member coöperating with said latch bolt and having means to release said dead-locking mechanism from said blocking means when the door is closed.

4. In a lock, the combination with a spring projected latch bolt and a dead-locking member therefor, of a roll-back for said member operable from the inner side of the door, means to prevent operation of said roll-back when the door is open and means to automatically release said roll-back when the door is closed.

5. In a lock, the combination with a spring projected latch bolt and dead-locking member therefor, of a roll-back for operating said member from the inner side of the door, a blocking dog operating with said roll-back, said dog being arranged to prevent rotation of said roll-back when said dead-locking member is in inoperative position, and means for automatically releasing said blocking member when the door is closed.

6. In a lock, the combination with a latch bolt and a dead-locking member therefor, of a roll-back for said member operable from the inner side of the door, a blocking dog constructed and arranged to prevent the operation of said roll-back when said roll-back is in inoperative position, a safety member for said latch bolt arranged to engage said blocking dog to release the latter from said roll-back when the door is closed.

AUGUST ARENS.
ERNEST L. TEICH.

Witnesses:

G. ERNEST ROOT,
WM. V. COLLINS.