

A. ARENS.
LOCK.

APPLICATION FILED JUNE 1, 1912.

1,057,795.

Patented Apr. 1, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

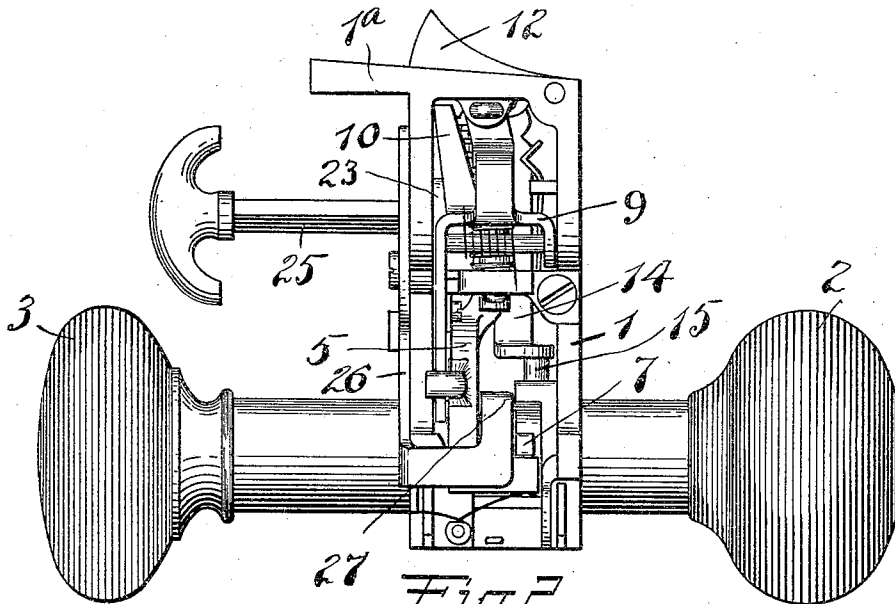
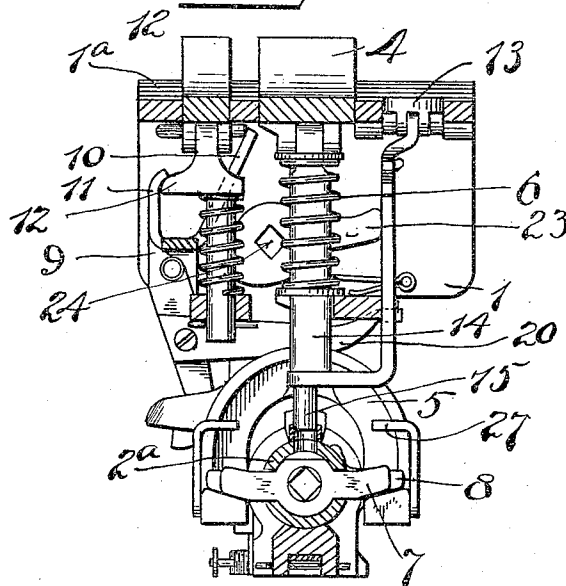


Fig. 2.



Witnesses:
Chas. A. ...
Geo. W. ...

Inventor
AUGUST ARENS
By his Attorneys
Reuben ...

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2 SHEETS—SHEET 2.

Fig. 3.

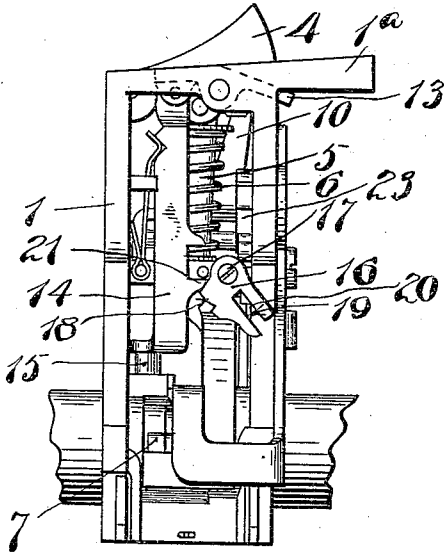


Fig. 4.

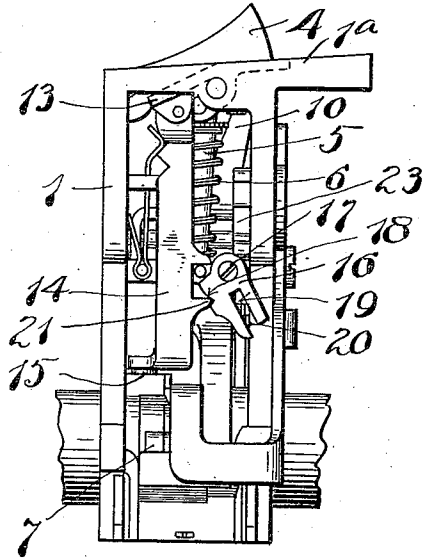


Fig. 5.

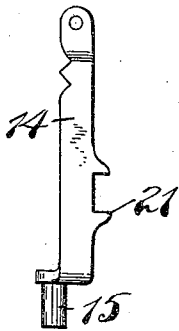


Fig. 6.

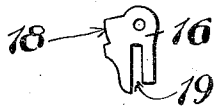


Fig. 7.

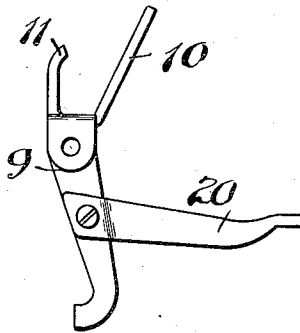
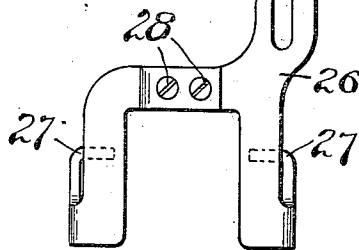


Fig. 8.



Witnesses:
Chas. Beard
Edw. W. Humziker

Inventor
AUGUST ARENS
By his Attorneys
Paul C. Furness & Wallace

UNITED STATES PATENT OFFICE.

AUGUST ARENS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE AMERICAN HARDWARE CORPORATION, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK.

1,057,795.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed June 1, 1912. Serial No. 700,916.

To all whom it may concern:

Be it known that I, AUGUST ARENS, a citizen 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.

My invention relates to an improvement in locks and latches, and particularly to that type of a lock in which the operator may dead-lock the outer knob against turning by pressing upon an operating device at the front of the lock the construction being such that when the door is closed, this operating device cannot be actuated to release the latch. These and other advantages will be apparent to the mechanic skilled in the art.

In the drawings, Figure 1 is a plan view of my improved lock complete excepting for the escutcheons. Fig. 2 is a cross section on the line $x-x$ looking in the direction of the arrows. Fig. 3 is a view of the under side of the lock shown in Fig. 1, the knobs being broken away and certain parts being in a different position. Fig. 4 is a similar view, the parts being shown in a different position. Figs. 5, 6, 7 and 8 are views of details.

1 represents the frame of a lock.
2 is an outside knob.
3 is an inside knob.
4 is a latch bolt arranged to project through the plate 1^a of the frame 1.
The knobs are suitably mounted on the frame 1 and are separately connected with the yoke end of a latch slide 5.
6 is a spring for projecting the latch.
7 is a roll-back for the outer knob.
8 is a roll-back for the inner knob.

The latch bolt is provided with an automatic stop, such as described in detail in United States Letters Patent numbered 834,994, which, when the door is closed, stands to the rear of the latch so that it cannot be pressed in by a thin tool inserted between the edge of the door and the door casing. This automatic stop need not be described in unnecessary detail because no specific claim is laid thereto herein. The stop comprises a swinging frame 9 having a dogging arm 10 and a cam arm 11 which is controlled by an actuator 12. This actuator 12 is hinged in the face plate 1^a of the frame 1 and resembles the latch 4. It, how-

ever, operates differently to this extent. When the door is closed, that part of the strike plate (not shown) in front of the actuator 12 holds said actuator repressed, in which position the dogging frame 9 swings so as to move the stop arm 10 to a position in the rear of the latch 4, thus guarding against the aforesaid method of manipulating the same.

In addition to the foregoing safety device, I also provide means for preventing the retraction of the latch by the outer knob, which also is blocked or locked when the door is closed. This means comprises, in this particular instance, a tilting lever 13 hinged in the face 1^a of the frame. 14 is an arm or extension carrying a plunger 15 which is arranged to be projected into and hold in the shank 2^a of the knob 2 so that when said plunger stands therein, the outer knob 2 cannot be turned. Obviously, in the absence of some satisfactory dogging means, this lever 13 might be reversed by means of a thin tool inserted between the edge of the door and the door casing. To guard against this, I provide an automatic stop of novel construction.

In Fig. 3, the lever 13 is shown in the "out" position, wherein the knob 2 is free to turn. In Fig. 4, the parts are in the position in which they would appear with the outer knob dogged, the lever 13 being shown therein as reversed. In this figure also, and in fact, in both Figs. 3 and 4, it may be assumed that the actuator 12 is repressed, as by a strike plate, when the door is closed. 16 is a dog for the stop work. This dog is in the form of a swinging lever pivoted at 17 and having a blocking shoulder 18. This lever also has a slot 19 in which the end of an arm 20 is located. The arm 20 is carried by the automatic dogging frame 9 which, when the door is closed, stands in one position, and when the door is open, stands in another position. When the stop work lever 13 has been thrown to lock the outer knob, as shown in Fig. 4, and the actuator 12 has been repressed, the movement of the dogging frame 9 will swing the dog 16 to the position shown in Fig. 4 in which position the blocking shoulder 18 will stand against a shoulder 21 so as to prevent outward movement of the arm 14, and hence will prevent the withdrawal of the plunger 15 or the tilting of the stop work lever 13. As

soon as the door is opened, the frame 9 will swing to the position shown in Fig. 2, whereupon, through the medium of the arm 20, the dog 16 will be thrown outwardly so that the slot will stand practically at right angles to the center line of the frame 1, thereby removing the blocking shoulder 18 from the shoulder 21 and freeing the arm 14 and stop work lever 13. In Fig. 3 I show the parts in such position as they would appear if the door were open and the actuator 12 repressed as by the finger. Under such a condition, the stop 16 would assume the position shown in Fig. 3, but the stop work could even then be reversed in a direction to dog the outer knob because pressure on the raised end of the lever 13 in a rearward direction would cause the point or shoulder 21 to swing the dog 16 to the right, after which it would snap back into the position shown in Fig. 4, securely blocking the operation of the stop work until the actuator 12 is again projected. As an additional means of security, I also provide a positive dead-locking device in the form of a lever arm 23 mounted on the frame 1 and having a hub with a squared passage 24 arranged to receive a thumb turn spindle 25. This thumb turn spindle, on being turned in one direction, moves the arm 23 to the position shown in Fig. 2, and when turned in another direction swings the arm 23 directly to the rear of the latch, dead-locking the same. This provides at the inside of the door another convenient means for absolutely deadlocking the door. In my United States Letters Patent No. 1,028,423, I have described and claimed means for throwing off this manually operated dead-locking device by the mere act of turning the inside knob, thus relieving the occupant of the room of the necessity of first turning the thumb turn for that purpose. This operation is effected through the medium of a slide 26 which is operatively connected with the thumb turn, and which is provided with hooked extensions 27—27 which straddle the knob spindles and are arranged to be operated by the ends of the inner roll-back 8 so that the mere act of turning the knob in either direction will shift the slide 26 in a direction to release the manually operated latch dog 23. In the present case I have improved that construction by dividing the forked end of the slide 26 into two parts, which parts may overlap

and fasten together; for example, by screws 28. By this construction the act of assembling the lock is vastly simplified because, in exceedingly compact structures, such as shown herein, it is sometimes difficult to apply or remove the slide 26.

What I claim is:

1. In a lock of the character described, a spring latch bolt, a manually operable dogging device arranged to be operated from the inside of the door when the latter is closed to block the latch against repression, a knob arranged to retract the latch, and operative means of connection between said knob and the manually controllable latch dog to cast off the latter by the turning of said knob preparatory to retracting said latch, the connecting means between said knob and said manually operable latch dog including a sliding frame having a bifurcated end, the bifurcated part of said frame being separable to facilitate assembling the lock.

2. In a lock of the character described, a spring latch bolt, a manually operable dogging device arranged to be operated from the inside of the door to block the latch against repression when the door is closed, a knob arranged to retract the latch and operative means of connection between said knob and said dogging device to cast off the latter by turning the knob preparatory to retracting the latch, a sliding frame having a bifurcated end, said frame being connected with both the latch and the manually operable dog therefor, the bifurcated part of the frame being separable to facilitate assembling, a stop work device for locking the knob against rotation, with an operating device for said stop work adjacent to the spring latch bolt and at the front end of the lock, an automatic dogging device for said stop work, with means for moving the last mentioned dogging device into position to block the stop work when the door is closed and only while the door is closed, with a second knob opposite the first mentioned knob, and operative means of connection between said second knob and all of said parts whereby the latch bolt may be retracted thereby at any time.

AUGUST ARENS.

Witnesses:

RAYMOND K. BROOKS,
CLAYTON A. PARKER.