

LOCK.

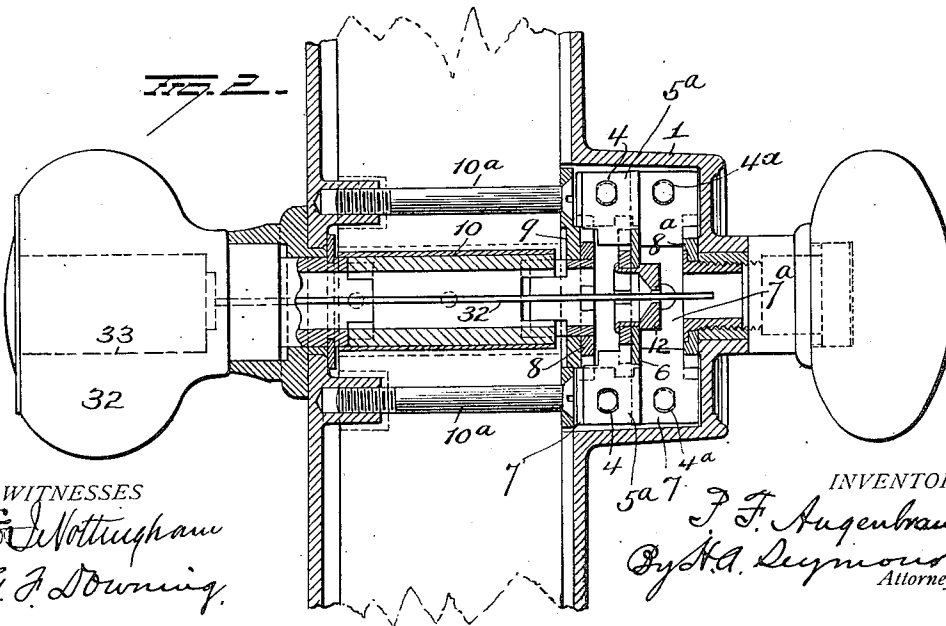
Patented Apr. 29, 1913.

3 SHEETS—SHEET 1.

A detailed technical drawing of a door lock assembly, likely a Yale brand lock as indicated by the logo in the top right corner. The drawing shows a side view of the lock mounted on a door. The components are labeled with numbers 1 through 7:

- 1: The main body of the lock, which houses the internal mechanism.
- 2: The handle or lever, which is used to operate the lock.
- 3: The strike plate, which is mounted on the edge of the door to engage with the lock's bolt.
- 4: The bolt or latch, which extends from the lock body into the strike plate.
- 5: The mounting plate or escutcheon, which is attached to the door to provide a finished appearance and protect the lock body.
- 6: The mounting screws, which are used to secure the lock assembly to the door.
- 7: The keyhole, which is used to insert and turn a key to operate the lock.

The drawing is a black and white line drawing with cross-hatching used for shading and to indicate different materials or surfaces. The Yale logo is visible in the upper right corner.



WITNESSES

Edinburgh
G. F. Downing.

INVENTOR

5a7. J. F. Augenbraun
By H. A. Seymour
INVENTOR
Attorney

P. F. AUGENBRAUN.

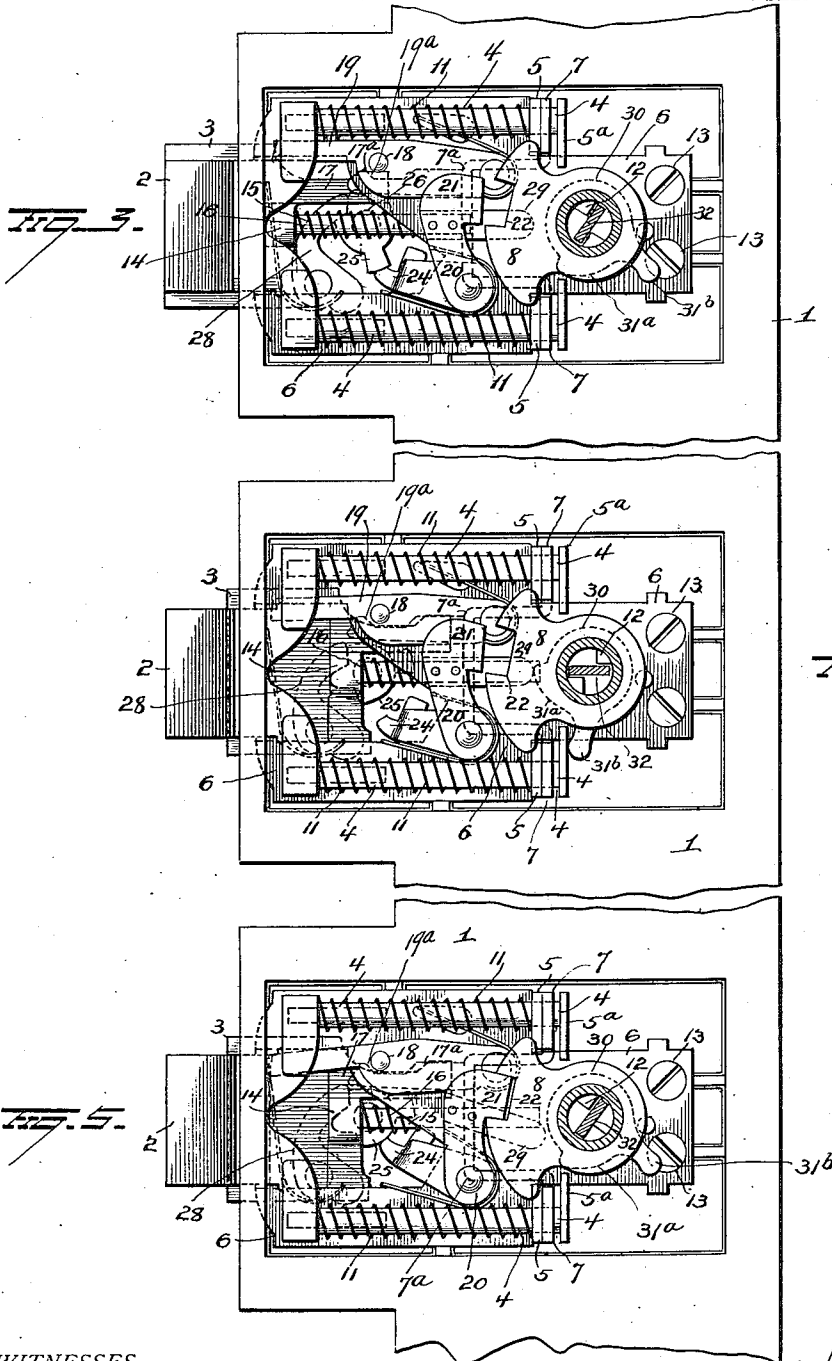
LOCK.

APPLICATION FILED MAR. 16, 1912.

Patented Apr. 29, 1913.

3 SHEETS—SHEET 2.

1,060,413.



WITNESSES

E. Nottingham
G. J. Downing

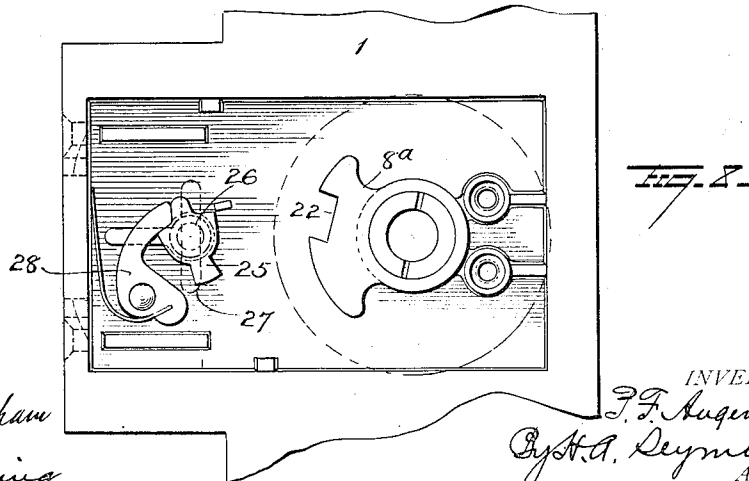
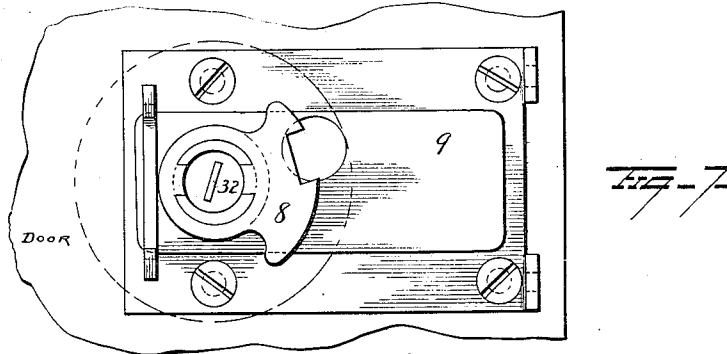
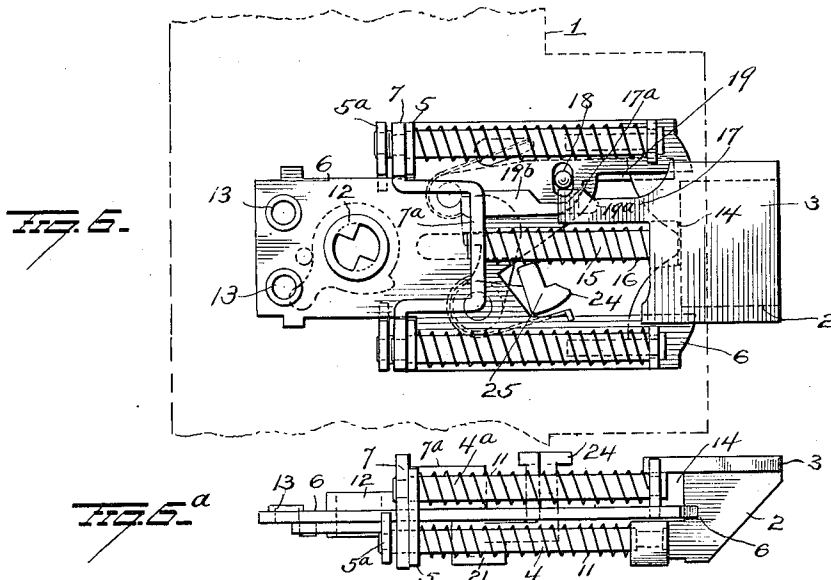
INVENTOR

P. F. Augenbraun
By K. A. Seymour
Attorney

P. F. AUGENBRAUN.
LOCK.
APPLICATION FILED MAR. 16, 1912.

1,060,413.

Patented Apr. 29, 1913.
3 SHEETS—SHEET 3.



WITNESSES
E. J. Nottingham
C. F. Downing.

INVENTOR
P. F. Augenbraun
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

PETER F. AUGENBRAUN, OF STAMFORD CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

LOCK.

1,060,413.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed March 16, 1912. Serial No. 684,290.

To all whom it may concern:

Be it known that I, PETER F. AUGENBRAUN, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in locks, adapted for use on any door, but designed particularly for hollow metal doors, the object being to provide a lock having connections between the bolt and the knobs, whereby the bolt may be retracted by either knob, with stop work for dogging the outer knob, the said stop work being operable by a thumb piece at the inner side of the door, and by a key from the outer side.

A further object is to provide a lock wherein the bolt, and its actuating mechanism are carried on a frame detachably secured to the lock case, so that these parts may be assembled as a unit before being applied to the lock case.

With these and other objects in view, my invention consists in the parts and combination of parts as will be more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a lock applied to a section of a door. Fig. 2 is a view in vertical section through the door and lock, the knobs being shown in elevation. Fig. 3 is a view of the lock, showing the stop work held out of contact with the roll back, thus permitting the bolt to be retracted by either knob. Fig. 4 shows the stop work after it has been moved out of contact with the roll back by a key. Fig. 5 shows the roll back locked by the stop work. Fig. 6 is a view of the bolt and its actuating mechanism assembled as a unit. Fig. 6^a is a view in side elevation of Fig. 6. Fig. 7 is a view of the rear plate of the lock showing the roll back for the outer knob and the bar connecting the key lock in the outer knob with the roll back on the bolt carrying frame, and Fig. 8 is a view of lock case the bolt and its mechanism being removed and showing the roll back for the inner knob and the cam for the stop work.

The bolt mechanism, herein shown and de-

scribed, is of the type shown in Patent No. 917,398, granted to the Yale & Towne Manufacturing Company, April 6th, 1909, and comprises the casing 1 open at its inner face only, and provided at one end with an opening for the passage of the bolt 2, and with a wider opening immediately in front of, and in open communication with said bolt opening for the passage of the dead locking slide 3.

Projecting inwardly from the latch bolt 2, are the parallel rods 4 which latter project rearwardly and pass through the cross heads 5 rigid with the frame 6, and are provided at their ends, in rear of the cross heads 5, with the heads 7 which are engaged at one end by the roll back 8 carried by the removable back plate 9 of the lock, and are engaged at their opposite ends by the roll back 8^a mounted in the casing 1. Roll back 8 is connected with the outer knob by sleeve 10 passing through the door, while roll back 8^a is mounted on the spindle of the inner knob, which latter is journaled in the casing 1.

Rods 4, which are rigidly secured to the bolt pass loosely through the heads 7 and are provided at their ends in rear of said heads with the plates 5^a, which overlap one face of frame 6, while the heads 7 are connected by the yoke 7^a which rests against the opposite face of said frame, thus holding the said rods and connected bolt on the frame. Rigidly secured to the heads 7 are the parallel rods 4^a located in the planes of the rods 4. These rods 4^a also pass through the cross heads 5 and both sets of rods 4 and 4^a, are encircled by spiral springs 11, all four of which bear at their rear ends against the cross heads 5. The outer ends of the springs on rods 4 bear against the rear end of bolt 2, while the outer ends of the springs on rods 4^a, bear against plates rigidly secured to the front ends of the rods, hence it will be seen that by retracting the heads 7 by the roll back of either the outer or inner knob, all four springs will be put under compression, and the bolt retracted. The front end of frame 6 is slotted or cut away, for the reception and free movement of the bolt 2, the slot being just wide enough to receive the bolt and prevent any lateral movement of the latter. Frame 6 also carries the roll back 12 actuated by the connecting bar from the key lock, and also car-

ries the stop work to be hereinafter described, and is provided at its rear end with holes 13 for the passage of screws which connect it, to the lock case. It will thus be
 5 seen that the bolt 2 and its connected parts are all secured on a removable frame, hence the parts can be assembled on the frame and applied to and removed as a unit from the lock case.

10 The dead locking slide 3 comprises a flat plate, wider than the bolt so as to project at opposite sides of the latter. This slide is provided with a shoulder 14 which projects behind the head of the bolt and limits
 15 the outward movement of the slide 3, and which operates by its contact with the head of the bolt to retract the slide when the bolt is retracted. A rod 15 is secured to the shoulder 14 and projects rearwardly and
 20 passes through yoke 7^a connecting the heads 7, and is encircled intermediate said yoke and shoulder 14 by the spring 16 which latter tends to normally hold the slide projected. The slide is also provided with a
 25 rearwardly extending finger 17, provided with a cam surface 17^a, which, when in engagement with a pin 18 on the dead locking lever 19 holds the latter out of the path of movement of the bolt, but which when
 30 released from said pin, permits the free end of dead locking lever to move into the path of movement of the bolt and thus lock the latter against retraction except through the manipulation of the knobs or lock. In
 35 the operation of the device, the dead locking slide 3 is always pushed back by the bolt as the latter moves rearwardly, by the engagement of the rear end of the bolt with shoulder 14, but the slide is purposely made
 40 wider than the bolt, so as to engage the strike plate or keeper and be held in its retracted position at all times when the bolt is engaged by the strike plate or keeper, hence as the bolt moves rearwardly, the dead
 45 locking slide is also moved rearwardly thus carrying the cam 17^a on finger 17 to the rear of pin 18, hence when the bolt moves forwardly under the strike plate or keeper the cam surface will be out of the path of the
 50 pin 18 and thus permit the dead locking lever, which is actuated by a spring, to move to dead locking position. When the lock is actuated by the knobs or a key, the heads 7 are retracted by the roll backs. The yoke
 55 7^a connecting the two heads also carries a finger 19^b having a cam surface 19^a which engages with the pin 18 and shifts the dead locking lever out of the path of the bolt.

Pivotaly mounted on the frame 6, is the
 60 stop work lever 20, provided at one end with a projection 21, adapted to enter a recess 22 in the roll back 8 of the outer knob, for locking the latter against movement. This lever 20 is approximately V-shaped in
 65 plan, and its opposite end 24 is adapted to

be engaged by the cam 25 on the spindle 26 of the thumb turn 27, the latter being carried by the lock casing 1 and located at the inner side of the door. The cam 25 is held
 70 in its two positions by the spring actuated dog 28, which holds the cam against movement except when positively turned by the thumb turn 27.

Stop lever 20 is provided with a rearwardly projecting finger 29 which rests
 75 against the periphery of the collar 30 keyed to the roll back 12 carried by the frame 6. This collar is provided with a cam 31^a and with a finger 31^b, the latter located in a position to be engaged by the plates 5^a on rods 4,
 80 when the latter are retracted by the rearward movement of the heads 7, while the cam 31^a is adapted to be moved against the free end of finger 29, for holding the stop work lever 20 out of contact with the roll
 85 back on the outer knob.

Both of the roll backs 8 and 8^a are actuated directly by the knobs and engage the heads 7, and when free to move, retract said heads and the bolt when the knobs are
 90 turned, while the roll back 12 which is carried by the frame 6, is connected by connecting bar 32 with the key lock 33 in the outer knob and is turned by said key lock. From the foregoing it will be seen that when
 95 cam 25 is turned by the thumb turn on the inner side of the door, into the position shown in Fig. 3, it engages one end of the stop lever 20 and holds the other end out of contact with the roll back 8 of the outer
 100 knob, and when turned to its other extreme, as shown in Fig. 5, it releases said stop work lever and permits its projection 21 to enter recess 22 in said roll back and lock the outer knob against rotation. If now the key be introduced in the lock in the outer knob, and
 105 given a quarter turn to the right, its connecting bar 32 turns roll back 12 and collar 30 and moves cam 31^a on said collar under finger 29, which turns the stop work lever
 110 on its pivot, and carries its projection out of the recess in the roll back, thus leaving the latter free to be turned. If the key be now turned in the opposite direction, that is to say to the left, the outer knob will, due to the
 115 fact that the key cannot turn to the left independently of the knob, turn with same and actuate roll back 8 in a direction to retract the bolt. As the bolt is retracted, the plates 5^a on rods 4, moving in contact with
 120 the finger 31^b, turn the collar 30 and thus carry the cam 31^a on said collar, out of contact with the finger 29, thus releasing the stop work lever 20 and permitting it to move over into contact with the roll back
 125 and again engage the recess therein as soon as the outer knob is released. It will therefore be seen that the key throws off the stop work for one opening movement only of the bolt by the outer knob, and as soon as the
 130

knob has been turned to open the door after the release of the parts by the key, the stop work again engages the outer roll back 8^a and locks the door from the outside, and this continues so long as the stop work is disengaged from the cam 25. By turning the cam into the position shown in Fig. 3, the stop work is held away from the roll back of the outer knob thus permitting the latter to be freely actuated.

The lock as shown is a rim lock and is designed particularly for hollow metal doors. It is attached to the outer face of the door, hence the only cutting necessary is for the sleeve 10 and for the bolts 10^a which connect the lock on the inner face of the door with the escutcheon on the outer face of the door. This construction is equally applicable to wooden doors but its advantages are more apparent when applied to metal doors.

The lock in the outer knob may be of any construction, but is preferably of the pin tumbler type and as previously explained, is connected with the roll back 12 by a connecting bar, and operates to simply throw off the stop work, thus leaving the bolt free to be actuated by either knob. The stop work, when thrown off by a key from the outside, resets or goes on automatically when the bolt is retracted by either knob. When the stop work is thrown off by the thumb turn on the inner side, the bolt is free to be actuated by either knob.

While I have shown the stop work applied to a lock of the type disclosed in the patent above referred to, I do not confine the application of the stop work to any particular type of lock. Neither do I confine myself to the details of the stop work but consider myself at liberty to make such changes therein as may fall within the spirit and scope of the claims.

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

1. In a lock, the combination of a bolt, an outer roll back, a stop work for deadlocking said roll back, a key lock operable from the outer side of the door, means actuated by said key lock for moving the stop work out of engagement with the roll back and means actuated by the retraction of the bolt for throwing the stop work into engagement with said roll back.

2. In a lock, the combination of a bolt, an outer roll back, a stop work for deadlocking said roll back, a thumb turn located at the inner side of the door for controlling the position of the stop work with relation to the roll back, a key lock operable from the outer side of the door, means actuated by said key lock for moving the stop work out of engagement with the roll back and means actuated by the retraction of the bolt for throwing the stop work into engagement

with the roll back after the stop work has been disconnected from the roll back by the key lock.

3. In a lock, the combination of a bolt, an outer roll back, a stop work for deadlocking said roll back, a key lock and mechanism actuated by said key lock whereby the stop mechanism will be disengaged from said roll back and permit the bolt to be retracted, and means actuated by the movement of the bolt for again throwing the stop work into engagement with the roll back after the bolt has been retracted.

4. In a lock, the combination of a bolt, an outer roll back, a stop work for deadlocking said roll back, a thumb turn at the inner side of the door for throwing said stop work into or out of engagement with the roll back, a key lock at the outer side of the door, means actuated by said key lock whereby the stop mechanism will be disengaged from said roll back and permit the bolt to be retracted, and means for again throwing the stop work into engagement with the roll back after the bolt has been retracted.

5. In a lock, the combination of a bolt, an outer roll back, a stop work for deadlocking said roll back, a thumb turn at the inner side of said door for throwing said stop work into or out of engagement with the roll back, a key lock, a roll back actuated by said key lock, and means connected with said key lock roll back whereby the stop work may be disengaged from the outer roll back to permit the bolt to be retracted from the outside, and means for again throwing said stop work into engagement with the outer roll back after the bolt has been retracted.

6. In a lock, the combination with a bolt mechanism and inner and outer knobs and their roll backs for actuating same, of stop work mechanism for deadlocking the outer knob roll back, a key lock and a third roll back actuated by said key lock for throwing the stop work off.

7. In a lock, the combination with a bolt mechanism and inner and outer knobs and their roll backs for actuating the same, of stop work mechanism for deadlocking the outer roll back, a key lock, a roll back actuated by said key lock for throwing the stop work off, and means actuated by the inward movement of the bolt for throwing said stop work on.

8. In a lock, the combination of a bolt mechanism, a casing therefor, the said casing adapted to be applied to the inner face of the door, inner and outer knobs, two roll backs within the casing for retracting the bolt, one of said roll backs connected with the outer knob and the other with the inner knob, a key lock within the outer knob, a third roll back within the casing and connected with the key lock, and a stop work for deadlocking the outer roll back, the said

stop work adapted to be thrown off by the key lock roll back.

9. In a lock, the combination with a bolt mechanism, two knobs, a roll back for each, a key lock in one of said knobs, a third roll back actuated by said key lock, stop work for dogging the roll back of the outer knob, means actuated by said third roll back whereby said stop work may be thrown off by the key lock, and means whereby it will be thrown on by the retraction of the bolt.

10. In a lock actuated by knobs, a frame detachably secured to the lock casing and carrying a spring actuated sliding bolt, dogging mechanism, stop work mechanism for the outer knob, and means operable by a key from the outside for shifting said stop work mechanism.

11. In a lock actuated by knobs, a frame detachably secured to the lock casing, bolt mechanism, dogging mechanism for the bolt, automatic means for actuating said dogging mechanism, stop work mechanism for dogging one of the knobs and means operable by a key from the outside for shifting said stop work mechanism, the said bolt mechanism, dogging mechanism, automatic means, stop work mechanism and stop work shifting means being secured to and removable with said frame.

12. In a rim lock, the combination with a lock casing adapted to be secured to one face of the door, outer and inner knobs, a roll back connected with each knob and a thumb turn carried by the lock casing and provided with a cam, of a frame carrying the bolt

mechanism, stop work mechanism for deadlocking one of the knobs, and key actuated mechanism for disconnecting said stop work from the roll back.

13. In a rim lock, the combination with a lock casing adapted to be secured to one face of a door, outer and inner knobs, a roll back connected with each knob and a thumb turn carried by the casing and provided with a cam, of a frame carrying the bolt mechanism, a dead lock for the bolt and stop work for dogging one of the knob roll backs and key actuated means for disconnecting said stop work from the roll back, the said stop work mechanism being controlled by the thumb turn.

14. In a rim lock, the combination with a lock casing adapted to be secured to one face of a door, outer and inner knobs, a key lock in the outer knob, and a roll back connected with each knob, of a plate detachably secured to the casing and carrying the bolt mechanism, and stop mechanism for deadlocking one of the knob roll backs, and also carrying a roll back actuated by the key lock, the said latter roll back adapted to throw off the stop work mechanism to permit the outer knob to turn to retract the bolt.

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

PETER F. AUGENBRAUN.

Witnesses:

SCHUYLER MERRITT,

EDITH M. CROZIER.