No. 845,909. PATENTED MAR. 5, 1907.

H. G. VOIGHT.

LOCK AND LATCH MECHANISM.

APPLICATION FILED MAR. 23, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

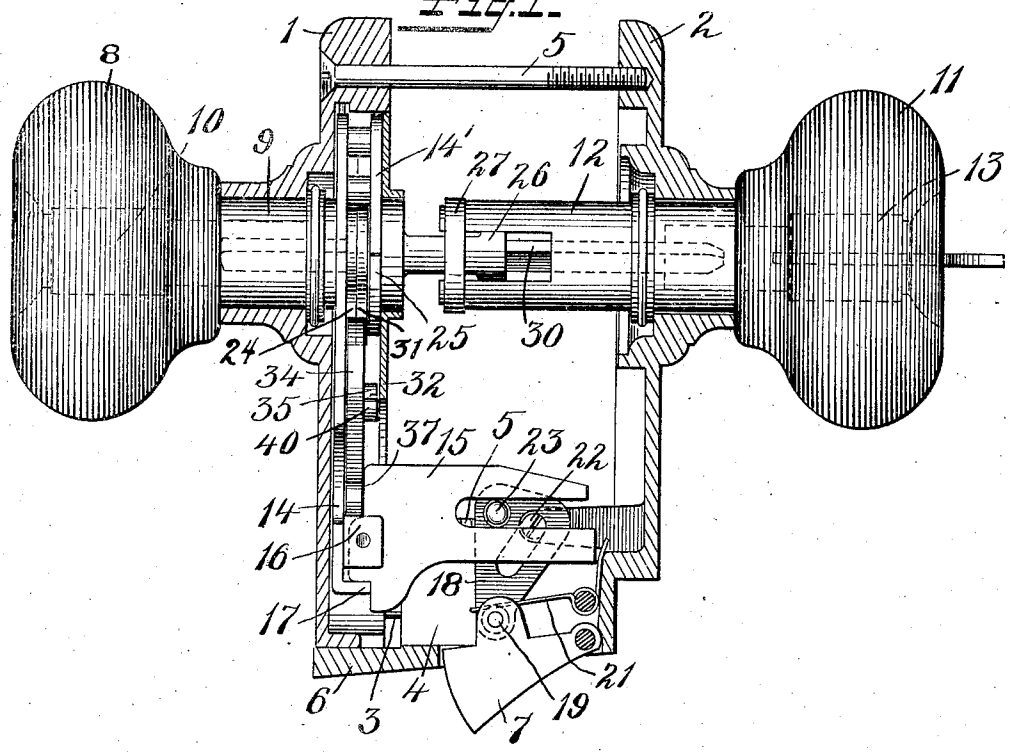
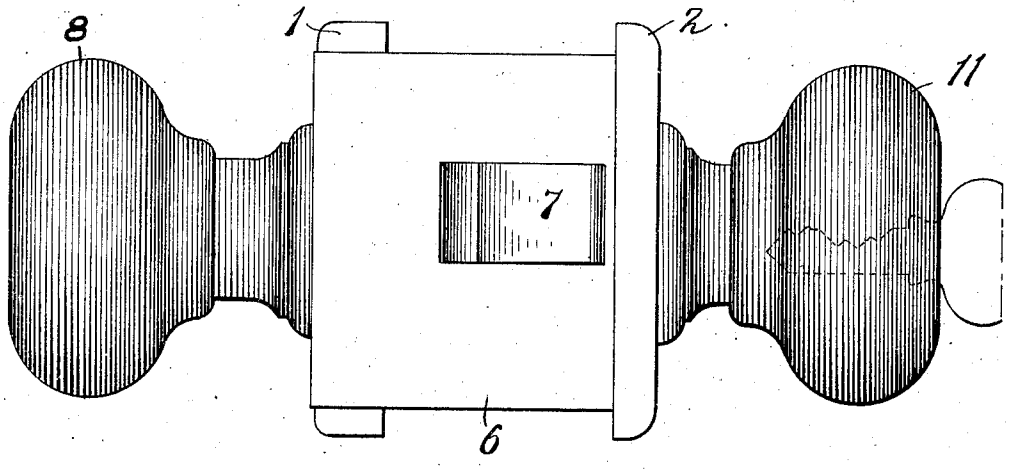


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

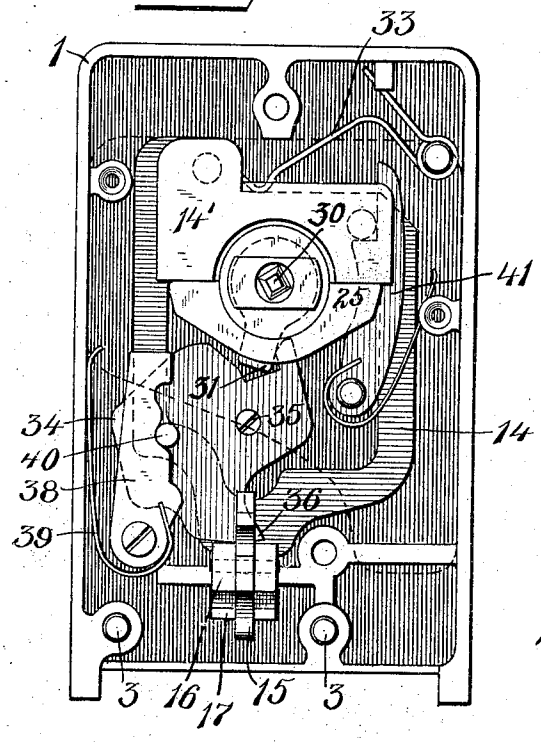


Fig. 4.

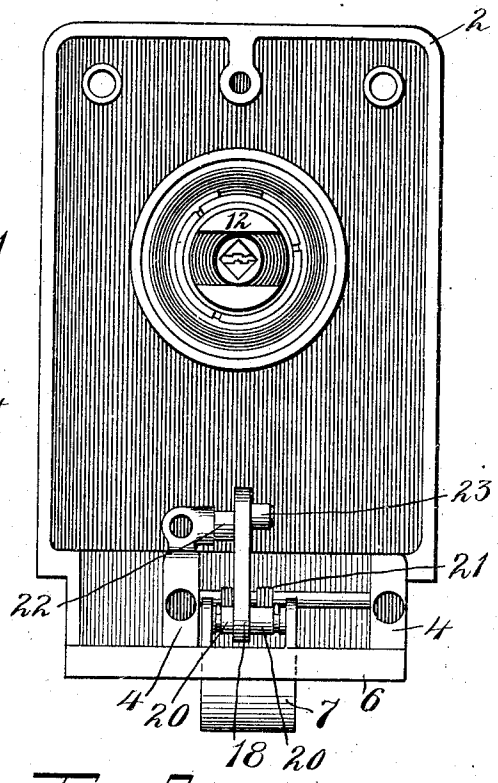


Fig. 5.

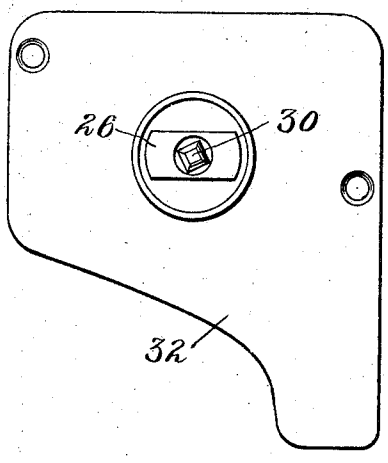
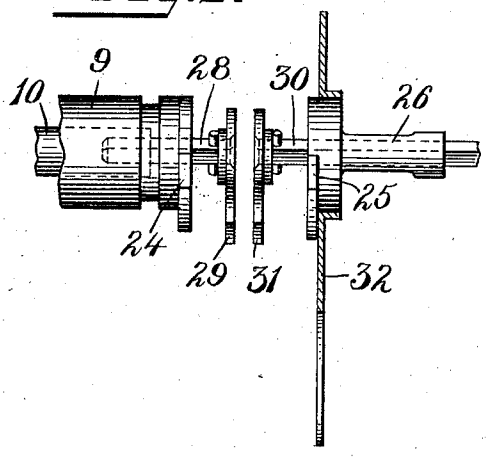


Fig. 6.



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UNITED STATES PATENT OFFICE.

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LOCK AND LATCH MECHANISM.

No. 845,909. Specification of Letters Patent. Patented March 5, 1907.

Application filed March 23, 1906. Serial No. 307,641.

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, county of Hartford, Connecticut, have invented certain new and useful Improvements in Lock and Latch Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in lock and latch mechanism.

The mechanism is particularly adapted for use on doors communicating between two offices in which it is desired at times to lock the door from either side and still be able to unlock the door from either side.

In the type of mechanism shown the locks proper are of the cylinder type and located in the knobs. Normally the latch-bolt may be retracted by the operation of either knob. Its retraction may, however, be prevented by the operation of either cylinder-lock and similarly released by the operation of either lock.

The principles of the invention are illustrated in the accompanying two sheets of drawings. The particular type of lock illustrated is adapted to be applied to a door by sawing a notch in the edge of the door and boring a hole through the door for the knob-shank, the mechanism being carried by two side plates which are adapted to the opposite sides of a door.

Figure 1 is a horizontal section and plan view of mechanism embodying the improvements of my invention. Fig. 2 is a view of the end of the lock. Fig. 3 is a view of the interior of the side plate carrying the latch operating and dogging mechanism. Fig. 4 is a view of the inner side of the plate carrying the latch-bolt. Fig. 5 is a view of the cover-plate for the operating mechanism, showing the lock-spindle and one of the roll-backs in position. Fig. 6 shows the parts of the roll-back mechanism separated.

The side plates 1 and 2 are adapted to the opposite sides of a door and are given a definite alinement by the pins 3 3, which telescope in sockets in the projections 4 4. The side plates may be drawn together by screws, as 5 5. One of the side plates has an extension 6, which is adapted to the edge of the door, and has an opening for the passage of the latch-bolt 7.

8 is a knob having a shank 9 and providing a housing for the cylinder-lock shown dotted at 10. The details of the cylinder-lock mechanism are well known and need not be illustrated or described. The knob and shank are provided with suitable bearings in the side plate 1. 11 is the other knob, having a shank 12 and providing a housing for the cylinder-lock 13. This knob and shank are supported in the side plate 2.

14 is the latch-retracting slide, carried by the plate 1.

15 is an extension pivoted in the lug 16 of the latch-slide and having a toe-like portion normally abutting against the shoulder 17 of the latch-slide, so that the extension will be retracted with the slide, but may be tilted to the rear independently of the movement of the slide.

18 is a latch-tail pivoted to the latch-bolt on the pin 19.

20 20 are rollers mounted on the pin 19, which are preferably grooved. The spring 21 has its ends resting in grooves in the rollers 20 20 and serves to tilt the bolt outward. The presence of these rollers reduces the friction which would occur between the parts and prevents the spring from wearing out. This is a very vital point in latch mechanism, since the failure of the bolt-spring means the failure of the mechanism to operate.

22 is a screw passing through the slot in the latch-bolt 18 and rigidly carried by a part of the side plate 2. This screw acts as a stop-pin to limit the inward and outward movement of the latch-bolt.

23 is a roller-like projection carried by the latch-tail, which extends into a slot in the slide extension 15. This projection 23 is substantially in the rear of the pivot-pin 19, so that the pull of the latch-slide upon the latch-bolt is exerted directly in the rear of the latch-bolt. The slot in the extension 15 is arranged at substantially right angles to the plane of the side plates, so that the connection between the latch-slide and the latch-bolt is maintained substantially the same irrespective of the thickness of the door to which the mechanism is applied.

24 is a roll-back of the usual type in mechanism of this character, which is secured to the knob-shank 9 and by which the latch-slide is adapted to be retracted when the knob 8 is

rotated. 25 is a second roll-back, also adapted to engage the portion 14′ of the latch-slide for retracting the same. This roll-back has an extended shank 26, which is flattened and telescopes in a correspondingly-shaped slot in the shank 12, so that the connection between the shank of the knob and the roll-back is maintained irrespective of the thickness of the door to which the mechanism is applied.

27 is a ring surrounding the end of the shank 12 and holding the two parts together to prevent separation under the strains to which the parts are subjected. The latch-bolt may, by the parts thus described, be retracted upon the operation of either knob independently.

28 is a spindle connected to the plug of the cylinder-lock 10 and having a roll-back 29.

30 is a second spindle connected to the plug of the cylinder 13 and carrying the roll-back 31.

32 is a cover-plate forming a bearing for the hub of the roll-back 25. When the parts are assembled, the four roll-backs 24, 25, 29, and 31 are all close together and are held in position between the side plate and the cover-plate 32.

33 is a spring which presses the latch-slide 14 outward and holds it against the roll-backs 24 and 25.

34 is a dogging-lever or bolt pivoted at 35 and having a nose 36, which is adapted to be extended underneath the heel 37 of the latch-slide extension 15 and in the rear of the lug 16, as shown in Fig. 3. Normally, however, this nose 36 is clear of the lug 16 and the pivoted extension 15 of the latch-slide. The dog may be operated by either one of the roll-backs 29 or 31, operating in a notch in the dog, as shown in Fig. 3.

38 is a lever held under the tension of the spring 39 against the pin 40, which is carried by the dog. By this means the dog is held either in its operative or inoperative position and prevented from vibration or displacement. Both roll-backs 24 and 31 normally point up. In Figs. 1 and 3 they are shown in engagement with the locking-dog.

41 is a spring-pressed tumbler or lever which bears against the roll-backs when they are in their normal position and prevents their displacement during their acts of assembling and applying the lock on a door. The operating of the dogging mechanism by either of the cylinder-locks does not prevent its subsequent operation by the other lock.

What I claim is—

1. In a lock and latch mechanism, side plates, a latch-bolt carried by one side plate, a latch-slide carried by the other side plate, operative means of connection between said slide and bolt, a knob carried by each side plate, a lock in each knob, independent means of connection between the knobs and said slide, a dogging device for said slide and independent means of connection between said locks and said dogging device.

2. In a latch mechanism, plates adapted to the opposite sides of a door, a knob carried by each plate, a latch-slide carried by one plate, a latch-bolt carried by the other plate, adjustable means of connection between said slide and said bolt, a shank extending from each of said knobs, a roll-back for each shank for coöperating with said latch-slide, one of said roll-backs having a flattened extension fitting in a corresponding slot in its knob-shank, and a binding-ring for the end of said slotted shank.

3. In a lock and latch mechanism, a pair of side plates, a knob carried by each plate, a lock in each knob, a latch-bolt, a latch-slide, a dogging device for said slide, independent roll-backs for said knobs for engaging said slide and independent roll-backs for said locks for operating said dogging device.

4. In a lock and latch mechanism, a latch-bolt, a latch-slide, an extension pivoted thereto, means of connection between said extension and said bolt, a dogging-lever adapted to simultaneously block said slide against retraction and said extension from tilting on its pivot.

5. In a lock and latch mechanism, a latch-bolt, a latch-slide, means of connection between said slide and bolt, a pair of knobs, means of connection between said knobs and said slide, a dogging-lever for said slide, lock mechanism carried by each knob and independent means of connection between said lock mechanisms and said dogging-lever.

6. In a lock and latch mechanism, a pair of escutcheon-plates, a bolt, a latch-slide, dogging mechanism, a pair of knobs, roll-backs for each knob, a lock carried by each knob, a roll-back for each lock, and an internal cover-plate carried by one of said escutcheon-plates for holding one of said roll-backs against the next adjacent roll-back.

7. In a lock and latch mechanism, side plates adapted to the opposite sides of a door, a latch-plate, a latch-slide, an extension pivoted thereto, means of connection between said extension and said plate, and means for simultaneously dogging said slide and said extension.

8. In a latch mechanism, a pair of side plates, knobs carried thereby, a latch-slide carried by one side plate, means of connection between said knob and said latch-slide, a latch-bolt carried by the other side plate, a latch-tail pivotally connected to said latch-bolt, a stationary-pin acting in a slot in said latch-tail to limit the inward and outward movement of said latch-bolt.

9. In a latch mechanism, a pair of side plates, knobs carried thereby, a latch-slide, means of connection between said knobs and said slide, a pivoted extension carried by said latch-slide having a slot in its outer end, a piv-

oted latch-bolt, a latch-tail pivoted thereto, a guide for said latch-tail and a projection from said latch-tail engaging in the slot in said slide extension.

10. In a lock and latch mechanism, a bolt, a pair of knobs, operative means of connection between said knobs and said bolt, dogging mechanism, a lock mounted in each knob, and operative means of connection between said locks and said dogging mechanism, including independent roll-backs and a yielding tumbler normally engaging said roll-backs.

Signed at New Britain, Connecticut, this 19th day of March, 1906.

HENRY G. VOIGHT.

Witnesses:
M. S. WIARD,
CHAS. E. RUSSELL.