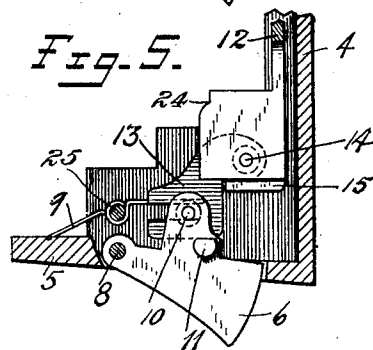
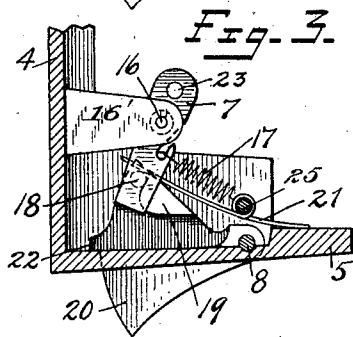
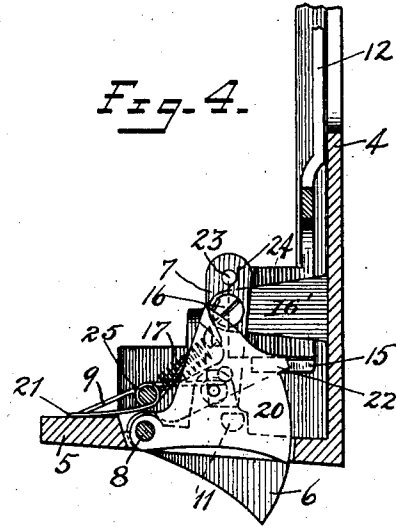
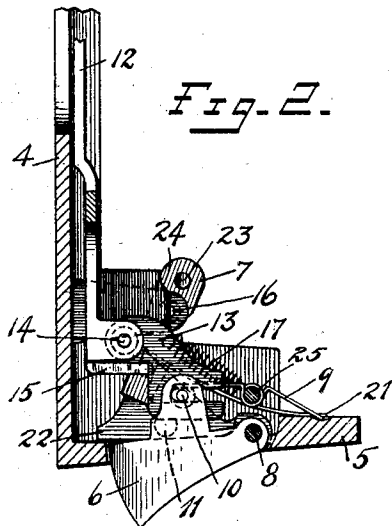
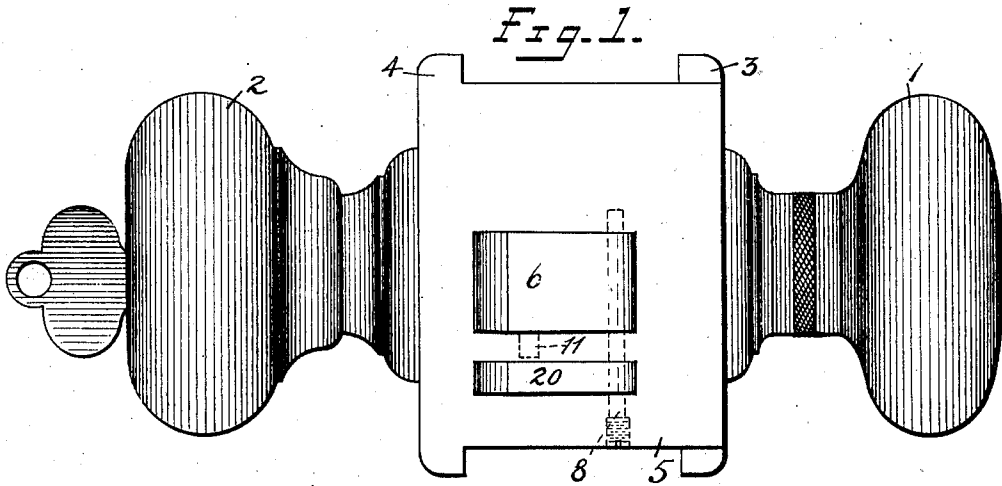


No. 830,545.

PATENTED SEPT. 11, 1906.

H. G. VOIGHT.
LOCK MECHANISM.

APPLICATION FILED MAY 15, 1905.



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LOCK MECHANISM.

No. 830,545.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed May 15, 1905. Serial No. 260,371.

To all whom it may concern:

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

My invention relates to improvements in lock and latch mechanism, and particularly for use on hinged or swinging doors.

The object of the invention is to provide a simple and effective means for automatically dogging the latch-bolt when the door is closed, so as to prevent retraction by means of an instrument inserted at the edge of the door from the outside. In mechanisms of this general character it is customary to provide a lock or latch bolt which may be set so that it can be opened from the outside only by means of a key.

I have shown my invention as applied to a mechanism in which the same bolt serves as a latch-bolt and as a locking-bolt, being operable under normal conditions by either the inside or outside knob. The lock may be set so as to block the outside knob by suitable means. When the outside knob is blocked, the bolt may be retracted by the use of a key inserted from the outside. In the particular embodiment of the invention as shown in the accompanying sheet of drawings the latch-bolt is of the pivoted or swinging type and adapted to be retracted by a latch-slide operated either by the inner or outer knob. When the door is closed, a dog automatically moves into place back of the latch-bolt and prevents it being pushed back by the insertion of an instrument between the edge of the door and the door-casing. This dog is brought into position automatically by the movement of a member which is retracted by contact with the striker-plate. The latch-bolt may, however, at this time be retracted in proper manner by the operation of the knobs or key, the movement of the latch-slide itself serving to retract the dog so as to first free the latch-bolt. It will be obvious, however, that the invention is applicable to other types of locks and that the details of construction may be varied without departing from the spirit or scope of my invention.

Figure 1 is a front view of a lock or latch

mechanism embodying the improvements of my invention. Fig. 2 is a horizontal sectional view taken on a plane immediately above the latch-bolt and showing those details which are particularly necessary for an understanding of my invention. Fig. 3 is a similar view taken on a plane below the latch-bolt, showing the dogging device and operator. Fig. 4 is a view on a horizontal plane below the operating member and looking upward. Fig. 5 is a similar view taken just below the latch-bolt.

In the type of lock herein illustrated the latch-bolt, latch-slide, dogging device, and operator are carried by a plate secured to the outer surface of the door, and a cylinder-lock is carried by the outside knob.

1 and 2 are the inner and outer knobs, respectively, secured to the side plates 3 and 4. 5 is an end plate secured to the outer side plate and adapted to extend across the edge of the door.

6 is the latch-bolt, adapted to swing through an opening in the end plate.

7 is the dog for preventing the latch-bolt being pushed in when the door is closed.

8 is a pivot for the latch-bolt.

9 is a spring normally extending the latch-bolt outwardly and bearing against the pin 10.

11 is a stop or projection carried by the latch-bolt which prevents the latch-bolt from being extended beyond the end plate. This stop 11 stands in line with the dog 7 when the door is closed to prevent the latch-bolt being pushed inward.

12 is the latch-slide.

13 is a member in the form of a slotted yoke engaging the pin 10 on the latch-bolt.

14 is a pivot therefor carried by the latch-slide.

15 is a shoulder portion of the latch-slide against which the member 13 normally rests, so as to retract the latch-bolt when the latch-slide is retracted. The member 13 being pivoted, however, the latch-bolt may swing inward when it hits the striker-plate without moving the latch-slide.

The dog 7 is pivoted on pin 16, which is carried by lug 16', projecting from the plate 4.

17 is a spring normally pulling on the outer arm of the dog.

18 is a laterally-projecting pin carried by the dog normally resting against a cam 19,

which is an integral part of the operating member 20.

21 is a spring normally holding the operator 20 in its extended position.

5 The outer end of the operator 20 is shaped substantially the same as the latch-bolt 6 and projects through an opening in the end plate 5, being limited in its outward movement by the shoulder 22 striking against the back of the end plate. When the door is
10 closed, the latch-bolt springs out into the pocket in the striker-plate and the operator 20 is moved back by the surface of the striker-plate and held there. The retraction of the
15 operator 20 permits the dog 7 to tilt under the influence of the spring 17, the pin or projection 18 being released from the cam 19. The parts then take the position shown in Fig. 4, the outer end of the dog standing
20 back of the projection 11 on the latch-bolt. The projection 23, carried by the dog 7 on the side opposite pin 18, is held against an inclined shoulder 24, carried by the latch-slide, by the tension of the spring 17 when the op-
25 erator 20 is retracted. When it is desired to open the door in the proper manner, the latch-slide is retracted and moves the pin 23 up the incline 24, so as to swing the dog 7 and free the projection 11. When the door is
30 closed, the end of the dog 7 in position shown in Fig. 4 is separated a slight distance from the projection 11. The result is that the retracting movement of the latch-slide 12 moves the dog 7 before the latch-bolt 6 and
35 projection 11 have reached the dogging position of the dog. Continued retraction of the slide then retracts the latch-bolt freely. The operation of the dog will therefore be seen to be automatic upon closing the door and ef-
40 fectively prevents the latch-bolt from being tampered with by an instrument inserted at the edge of the door.

The bolt 6 and operator 20 are both pivoted on the pin 8, which is threaded near its
45 outer end and screwed into the end plate 5, so as to be removable. The bolt-spring 9 and the operator-spring 21 are both mounted on pin 25, and the dog-spring 17 is also connected to the same pin. The axes of the
50 pivot-pins 8 and 16 and spring-carrying pin 25, dog-pins 18 and 23, bolt-pin 10, and yoke-pivot 14 are all parallel to each other and to the planes of the side plate 4 and end plate 5. This construction facilitates manu-
55 facture of the parts, assembling, and operation. When the door to which the mechanism is attached is in the act of closing, the bolt 6 and dog-operator 20 both contact with the striker-plate at the same time. The
60 operating-face of the cam 19 is so constructed, however, that the dog 7 is not immediately released or permitted to move to its dogging position. This lag in the movement of the dog permits the bolt projection 11 to inter-
65 cept the dog, so that the bolt may move in-

ward freely by reason of its contact with the striker-plate. As the closing movement continues the dog is released by the operator and thrown against the side of the bolt projection 11 by action of the spring 17. It rests
70 against the projection 11 until the bolt is allowed to shoot out again, at which time the dog being unrestrained by the operator or bolt moves into its dogging position, with
75 its pin 23 resting against the slide-shoulder 24 ready for retraction by operation of the slide either through the medium of one of the knobs or the usual key.

What I claim is—

1. In a lock mechanism, a latch-slide, a 80 spring-pressed latch-bolt retractable thereby or independently thereof, a dog, a spring-pressed operator therefor movable independently of the latch-bolt for permitting the setting of said dog when the operator is re-
85 tracted, and means carried by the slide for retracting the dog when said slide is operated to retract the latch-bolt.

2. In a lock mechanism, side plates adapted to the opposite sides of a door, a latch-
90 bolt, a dog, an operator therefor movable independently of the bolt, said bolt, dog, and operator all being carried by one of said side plates.

3. In a lock mechanism, a slide, a pivoted
95 latch-bolt retractable thereby or independently thereof, a dog normally disengaged from said bolt, and an operator adapted when retracted to permit the setting of said dog to prevent the retraction of said bolt. 100

4. In a lock, a bolt, a dog, an operator having a cam-face adapted to hold the dog from engagement with the bolt for an appreciable portion of the extent of movement of said operator while the bolt is being retracted and
105 then to release the dog.

5. In a lock, a pivoted bolt, a dog pivoted on an axis parallel to the bolt-axis, an operator for controlling said dog and setting it in position to prevent the retraction of said bolt
110 when said operator is retracted.

6. In a lock, a side plate, an end plate having an opening, a pivoted latch-bolt adapted to extend through said opening, a projection carried by said latch-bolt for limiting its out-
115 ward extension, a dog adapted to be set behind said projection, and an operator for releasing said dog.

7. In a lock, a bolt, a slide for retracting said bolt, an operator having a cam-face and
120 movable independently of the bolt, and a plate-like dog having a laterally-projecting pin on one side for engaging said cam, and a laterally-projecting pin on the other side for engaging said slide, said dog standing behind
125 and in the path of movement of said bolt when said operator is retracted.

8. In a lock, a bolt and an operator pivotally mounted on the same axis, and a dog pivoted on an axis parallel thereto and adapted 1

to be set by the retraction of said operator to prevent the retraction of said bolt.

9. In a lock, a side plate, a pivoted bolt, a pivoted dog, and a pivoted operator for releasing said dog to prevent the retraction of said bolt when said operator is retracted, the axes of said three members being parallel to the plane of said plate.

10. In a lock, an end plate, a bolt, a dog for preventing the retraction of said bolt, an operator normally holding said dog out of engagement with said bolt, and a single pivot-pin for said bolt and said operator having a screw-threaded portion seated in a tapped hole in said end plate.

11. In a lock, a pivoted bolt, a dog for preventing the retraction of said bolt, a pivoted operator for holding said dog out of engagement with said bolt when extended, springs for said bolt and for said operator, and a single pin supporting said springs.

12. In a lock, a pivoted bolt, a dog for preventing the retraction of said bolt, a pivoted operator for holding said dog out of engagement with said bolt when extended, springs for said bolt and for said operator, and a single pin supporting said springs, and a spring for said dog connected to said pin.

13. In a lock, a bolt having a projection, an operator having a cam-face, and a dog for preventing the bolt from being pushed inward, said dog normally resting on said cam-face when said operator is extended and adapted to rest on said projection when the operator and bolt are retracted together.

14. In a lock, a side plate, an end plate carried thereby, a bolt adapted to be extended through said end plate, an operator adapted to be extended through said end plate, a lug projecting inwardly from said side plate, a dog pivotally carried thereby and adapted to be set by the incursion of said operator.

15. In a lock, a slide, a pivoted latch-bolt, a yoke pivoted to said slide, and connected to said bolt, a dog for preventing the incursion of said bolt, an operator for holding said dog in its inoperative position, means for moving the dog into its operative position upon the incursion of said operator, and a projection carried by said dog coacting with said slide for the retraction of said dog by the action of said slide.

HENRY G. VOIGHT.

Witnesses:

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