No. 849,569. PATENTED APR. 9, 1907.

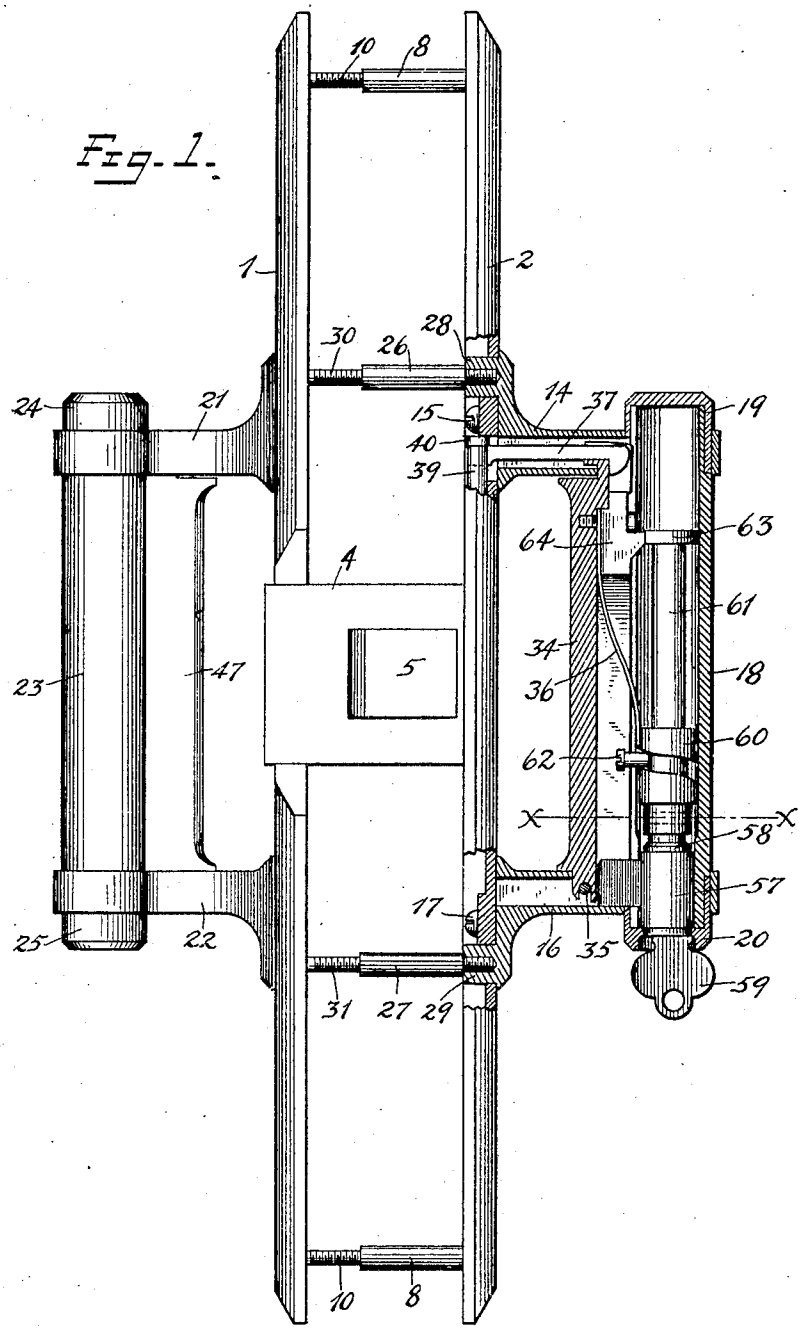
B. PHELPS.

LOCK AND LATCH MECHANISM.

APPLICATION FILED OCT. 28, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

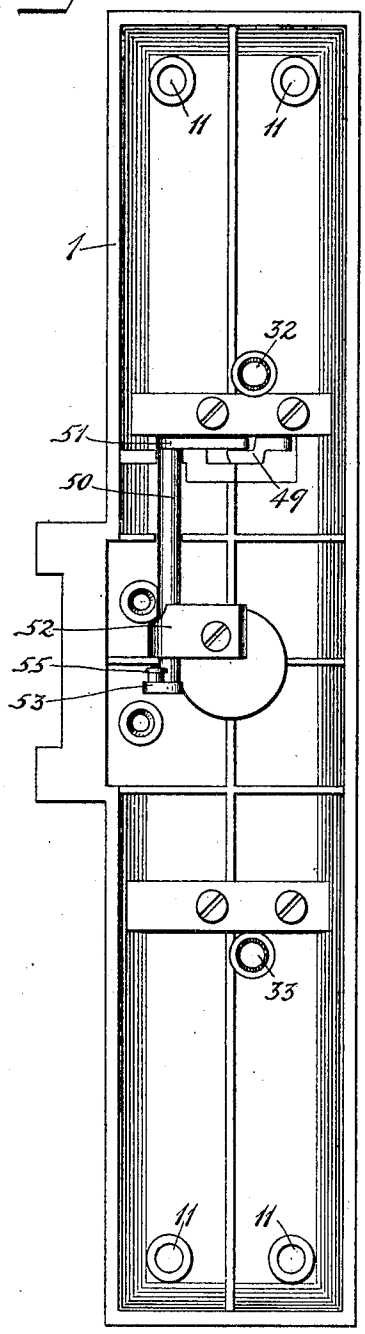
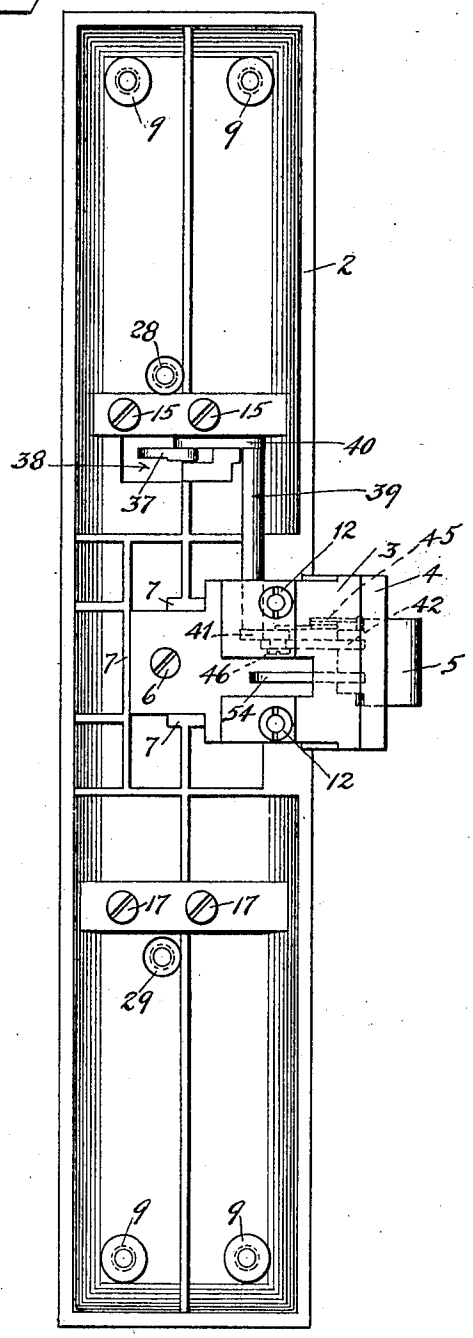


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

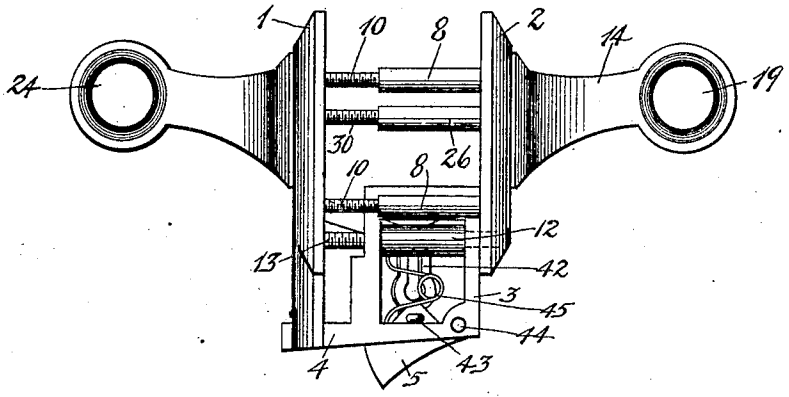


Fig. 5.

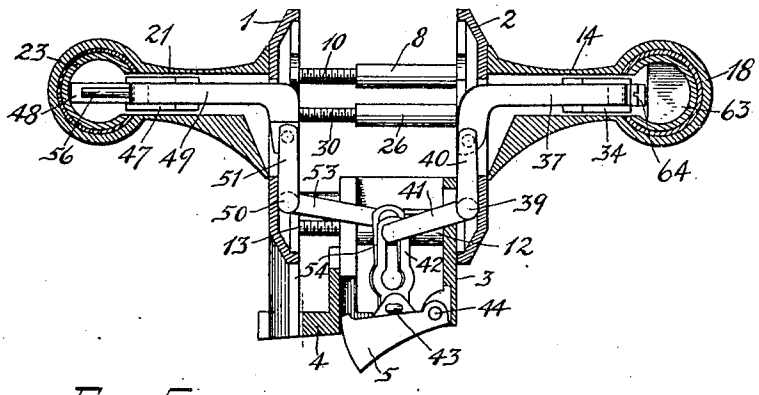


Fig. 6.

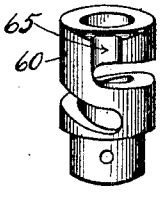


Fig. 7.

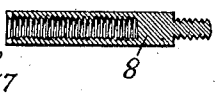
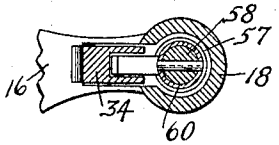


Fig. 8.



Witnesses

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LOCK AND LATCH MECHANISM.

No. 849,569. Specification of Letters Patent. Patented April 9, 1907.

Application filed October 28, 1905. Serial No. 284,784.

To all whom it may concern:

Be it known that I, BYRON PHELPS, a citizen of the United States, residing at Seattle, Washington, (post-office address New Britain, 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.

It has been customary in the past to operate the latch-bolt by means of a rotatable, a longitudinally-movable, or a tilting knob. It has also been customary to operate the locking or dogging mechanism by means of a key inserted through the side of the mechanism or in the end of the knob. I have sought to construct a mechanism which shall have great strength, combined with ease of operation, and in which the danger from tampering is greatly reduced.

The type of mechanism is that set forth in a number of patents heretofore issued to me and comprises side plates or escutcheons adapted to the opposite sides of a door and a frame carried by one side plate having a face-plate through which the bolt protrudes. The two side plates are secured together by screws, so that the mechanism is adapted to doors of different thicknesses. In this invention these principles are carried out. The handles are secured to the side plates by means of brackets, and on the inner side of each handle is a movable grip-piece. Each grip-piece is operatively connected with the latch-bolt by means of a slide located in one of its brackets and a bell-crank lever or rock-shaft carried by its side-plate, having one arm connected to the slide and the other arm connected to the latch-bolt. In one of the handles is located a lock or dogging mechanism for preventing the retraction of the latch-bolt by the operation of the grip-piece of that handle.

The principles of the invention are illustrated in the accompanying three sheets of drawings.

Figure 1 is a front view of a lock embodying the improvements of my invention, one handle and the connections with its side plate being shown in section. Fig. 2 is a view of the inside of the inner side plate. Fig. 3 is a view of the inner side of the outer side plate. Each plate carries independently mechanism necessary for connection with the latch-bolt. Fig. 4 is a plan view of the entire mechanism. Fig. 5 is a horizontal section showing the operative connections between the handle-grips and the latch-bolt. Fig. 6 is a detail perspective view of the operating-cam for the dogging or locking mechanism. Fig. 7 is a longitudinal sectional view of the removable screw-seat with which the clamping-screws coact. Fig. 8 is a horizontal section of the lock-bearing handle on the plane of the line X X, Fig. 1.

1 and 2 are respectively the inner and outer side plates or escutcheons.

3 is a frame carrying the face-plate 4, which is adapted to extend across the edge of a door and coact with the edge of the inner side plate.

5 is a locking-bolt which protrudes through the face-plate 4.

6 is a screw for securing the frame 3 to the outer side plate 2.

7 7 7 indicate lugs or projections which coact with the edges of the frame 3 for holding it in its proper position.

8 8 8 8 are screw-stumps having one end threaded on the exterior and the other end threaded on the interior. These stumps are screwed into the seats 9 9 9 9 on the outer side plate preferably after the mechanism is in position on the door.

10 10 10 10 are screws passing through openings 11 11 11 11 in the inner side plate and taking into the interior threaded portions of the stumps 8 8 8 8 for clamping the two side plates to the opposite sides of the door, and thus holding the mechanism securely in position.

12 12 are screw-stumps similar to stumps 8, which pass through the frame 3 and take into the outer side plate and provide seats for the screws 13 13. These stumps 12 aid in holding the frame in position and, together with the screws 13, greatly reinforce the side plates adjacent the edge of the door.

14 is a hollow bracket secured to the outer side plate by screws 15 15. 16 is a second bracket secured to the outer side plate by screws 17 17.

18 is the outer handle, carried between the ends of the brackets 14 and 16 and provided at the top and bottom with caps 19 and 20, suitably held in position.

21 and 22 are brackets secured to the inner side plate in a similar manner and carrying the handle 23, with upper and lower caps 24 and 25, respectively.

26 and 27 are screw-stumps similar to

stumps 8, which take into the seats 28 and 29, which are integral with the brackets 14 and 16.

30 and 31 are screws which pass through the seats 32 and 33 in the inner handle-brackets 21 and 22 and take into the stumps 26 and 27 for connecting the handle-brackets independently of the side plate. This affords a strong mechanism by which the door may be opened, the pull from the outer side, for instance, being taken not by the outer side plate, but by the inner side plate, and vice versa.

34 is a grip member, preferably U-shaped in cross-section and pivotally mounted at 35 in the lower bracket 16. This is normally held in the position shown in Fig. 1 by means of a spring 36.

37 is the latch-slide located within the upper bracket 14 and having a hooked end engaging the upper end of the operating grip member 34. The inner end of the slide projects through the opening 38 in the outer side plate.

39 is a rock-shaft pivotally carried by the outer side plate and held in position by the frame 3. The arm 40 of the rock-shaft is connected to the latch-slide 38, and the arm 41 is connected to the slotted link 42, the link being in turn connected by cotter-pin 43 to the rear of the latch-bolt. The latch-bolt being pivoted at 44 may be readily retracted by operation of the grip member 34 and is extended when released by means of the spring 45. The slot in the link 42 is preferably enlarged at the outer end, so as to admit of the passage of the head 46 of the arm 41 when assembling and disassembling the mechanism.

47 is the operating-grip for the inner handle, normally held yieldingly in position by the spring 48.

49 is the latch-slide connected with the upper end of the operating member 47.

50 is a rock-shaft connected by arm 51 to the latch-slide and held in place on the inner side plate by the member 52.

53 is the lower arm of the rock-shaft, connected to the slotted link 54, which is connected to the pin 43 of the latch-bolt.

55 is the enlarged head of the arm 53, which is adapted to be passed through the keyhole-opening in the link 54.

56 is a projection from the rear of the operating-grip 47 for limiting its movement when retracting the latch-bolt. The latch-bolt may thus be retracted by the operation of the grip member 34 or member 47 by the simple natural act of grasping the handle, so that the same pressure which is applied to open the door serves to retract the latch-bolt automatically.

It is sometimes desirable to have a means for locking the latch-bolt in certain types of mechanism, especially for the outer doors of offices and stores, for which this mechanism is particularly adapted. I have therefore provided mechanism for dogging the operating-grip 34.

57 is the body of a cylinder-lock, having suitable tumblers and a plug 58. The cylinder-body is mounted in the outer handle 18 and has the tumble portion located within the groove of the grip member, so that the body is prevented from turning. An opening is provided in the cap 20 for centering the head of the body and guiding the key 59 to position in the plug.

60 is a grooved cam pinned or otherwise secured to the plug member 58 of the lock.

61 is a rod longitudinally movable in the cam member 60 and having a pin or screw 62, which projects through the groove in the cam 60. The head or end of the pin is guided within the vertical groove in the grip member 34.

63 is the head of the rod 61, forming a stop-shoulder for coöperation with the stop 64, carried by the operating grip member 34. When the parts are in the position shown in Fig. 1, the stop 63 being in line with the stop 64 prevents the operation of the grip 34. The latch-bolt can therefore be retracted only by the operation of the inner grip 47. When the key 59 and plug 58 are turned through a complete revolution, the cam 60 in its rotation coöperates with the pin 62 to draw down the rod 61 and remove the stop 63 from its dogging position. The groove in the cam 60 extends through little more than a complete revolution, so that the plug may be revolved exactly three hundred and sixty degrees. A seat 65 on the cam 60 is provided for the end of the spring 36, so that a slight resistance is afforded to the turning of the cam by means of the key, and a slight indication is given of the returning of the parts to their normal position when the end of the spring snaps into position on the seat.

The parts of the lock mechanism are so located as to be inaccessible for any purpose of tampering. Since they are invisible, the ornamental character of the lock is not interfered with or broken up by the presence of any keyhole or any protruding parts unnecessary for the ordinary manual operation.

What I claim is—

1. In a latch mechanism, a pair of plates adapted to the opposite sides of a door, a pair of brackets removably secured to each side plate, a handle supported between each pair of brackets, and screws directly connecting the opposite brackets.

2. In a latch mechanism, a recessed side plate, two brackets carried thereby, a handle carried between said brackets, a pivoted latch-bolt, a link connected thereto and having an opening with an enlarged end, a rock-shaft pivotally mounted in the recess in the back of said side plate, an arm projecting

from said shaft having an enlarged head adapted to be removably connected in the slot of said link, an operating member carried by said handle, and means of connection between said operating member and said rock-shaft.

3. In a latch mechanism, a side plate, a pair of brackets removably carried thereby and having openings in the outer ends thereof, a tubular handle having its ends within said bracket-openings but removable therefrom and having shoulders coacting with said brackets to prevent longitudinal movement, cap members for the opposite ends of said handle, a bolt, a yielding grip member extending along the inner surface of said handle, and means of connection between said grip member and said bolt.

4. In a latch mechanism, a pair of oppositely-arranged dependent side plates adapted to be adjusted to and fro to doors of different thicknesses, adjustable means for connecting said side plates, a latch-bolt, a pair of brackets carried by each side plate, a handle removably carried by each pair of brackets, a grip member for each handle, and independent means of connection between said grip members and said latch-bolt.

5. In a latch mechanism, a latch-bolt, a handle, a laterally-movable spring-pressed grip member, operative means of connection between said grip member and said latch-bolt and means for dogging said grip member.

6. In a lock and latch mechanism, a side plate, a bolt, a pair of brackets carried by said side plate, a tubular handle carried by said brackets, a grip member at the inner side of said handle having a recess in the side toward the handle, means of connection between said grip member and said bolt, a cylinder-lock mounted in said handle, a cam connected to the plug of the cylinder-lock, and a longitudinally-movable dogging device in said handle having a projection extending through said cam and into said recess.

7. In a lock and latch mechanism, a pair of side plates, a latch-bolt supported by one side plate, a handle carried by each side plate, operating means for said latch-bolt, and lock-controlled means accessible from the bottom of one handle for dogging the operation of the latch-bolt.

8. In a lock and latch mechanism, a side plate, a latch-bolt carried thereby, a tubular handle carried by and parallel to said side plate, an operating member carried by said handle, means of connection with said latch-bolt, and a key-controlled dogging mechanism accessible through one end of said handle.

9. In a lock and latch mechanism, a bolt, a handle, an operating member movable into said handle, means of connection with said bolt, and key-controlled means movable longitudinally in said handle for dogging the operation of said bolt by said operating member.

10. In a lock and latch mechanism, a bolt, a tubular handle, a spring-pressed operating member movable toward said handle, and a dogging device in said handle.

11. In a lock and latch mechanism, a side plate, a bolt, a pair of brackets carried by said side plate, a tubular handle carried by said brackets, a grip member lying along one surface of said handle, means of connection between said grip member and said bolt, a dogging device for said grip member, a cam for operating said dogging device, and a spring coacting between said grip member and said cam.

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