A. BOCK.

LATCH.

APPLICATION FILED OCT. 29, 1909.

959,295.

Patented May 24, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

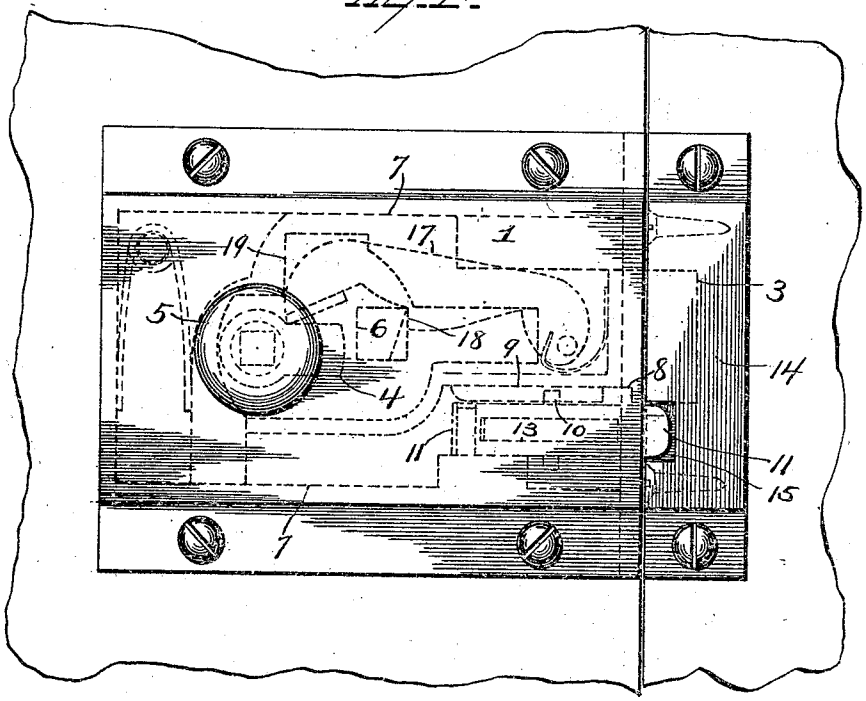
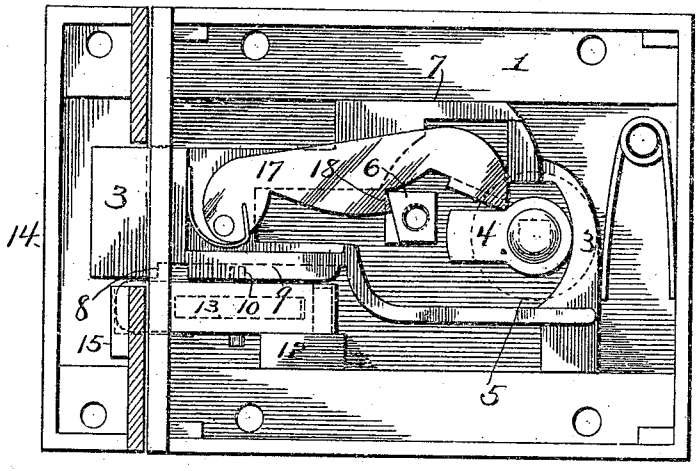


Fig. 2.



WITNESSES

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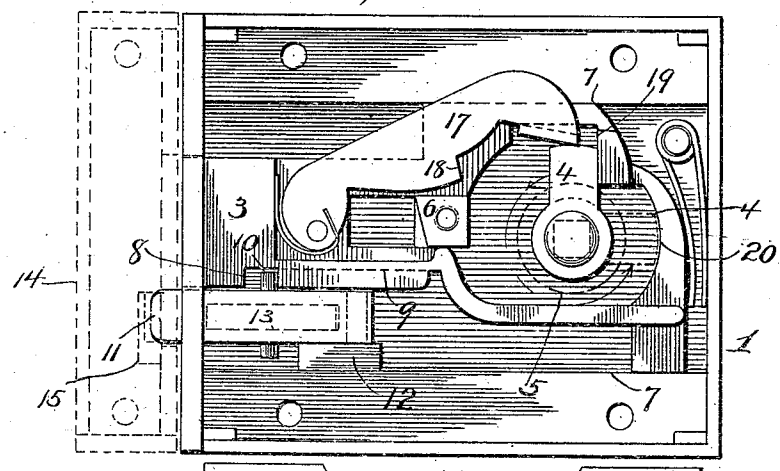
2 SHEETS—SHEET 2.

Fig. 3.



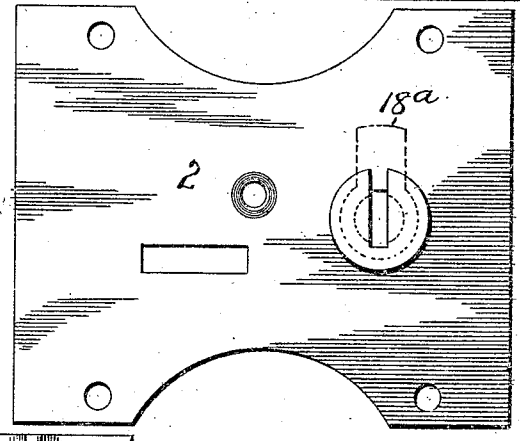


Fig. 7.

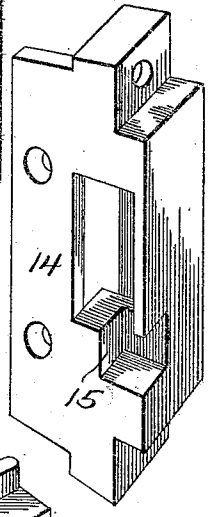


Fig. 5.

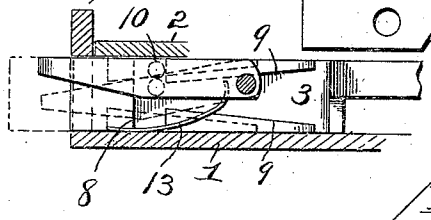


Fig. 4a

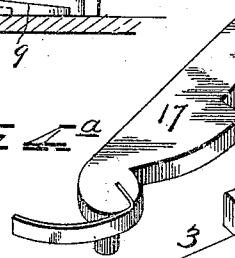
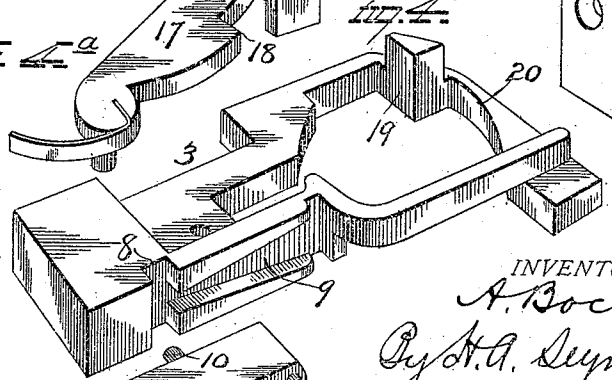


Fig. 4.



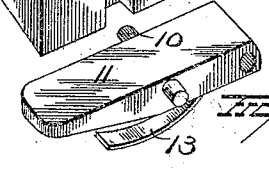


Fig. 5.

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UNITED STATES PATENT OFFICE.

ALFRED BOCK, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

LATCH.

959,295. Specification of Letters Patent. Patented May 24, 1910.

Application filed October 29, 1909. Serial No. 525,371.

To all whom it may concern:

Be it known that I, ALFRED BOCK, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Latches; 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 latches, the object being to provide a latch bolt that will be retained in its retracted position when actuated by a knob or key; which will be deadlocked when projected, and which may be projected by bolt releasing means engaging the keeper as the door is closed.

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

In the accompanying drawings, Figure 1 is a view of a section of the door and frame showing the lock and keeper. Fig. 2 is a view of the lock detached, the cover plate being removed and the bolt projected and deadlocked. Fig. 3 is a similar view showing the bolt held retracted by the bolt controlling lever and also showing, in dotted lines the keeper and the manner of holding the bolt retracted by the cam on the knob. Fig. 4 is a view in perspective of the bolt. Fig. 4[a] is a similar view of the tumbler. Fig. 5 is a similar view of the bolt controlling lever. Fig. 6 is a view in section of a portion of the lock showing the bolt held retracted by its lever and Fig. 7 is a view in perspective of the keeper.

1 represents a lock case having a removable cover plate 2, and 3 is the bolt, the shank or stem of which is open at its rear end for the reception of the cam 4 on the knob 5, and for the stud 6 integral with the lock case 1. This bolt is mounted to slide between the guides 7 rigid with the case 1, and is provided on one side of its head, preferably its lower side, with a slot 8 extending transversely of the bolt, and with a slot 9 extending lengthwise the bolt, the longitudinal slot having its inner wall, or side adjacent the door inclined so as to have a cam action on the pin 10 projecting from the upper side of the bolt controlling lever 11. This lever is pivoted to the post 12 integral with or secured to the lock case, and bears against a spring 13 which latter tends to force the outer free end of the bolt controlling lever 11 toward the door or toward the keeper 14 secured to the door frame. This lever rests in contact with the bolt, in the present instance in contact with the lower edge thereof and it projects beyond the face plate of the casing to engage the shoulder 15 formed integral with the keeper 14, the outer member of the latter being cut away or removed as shown at 16, to permit the projecting end of the lever 11 to move into contact with the shoulder 15. The pin 10, carried by the lever 11 is always within either the transverse or longitudinal slots in the edge of the bolt, and the spring 13 acting against the lever 11 tends to turn the latter to a position where the pin will rest in the transverse slot to one side of the longitudinal slot which communicates with the transverse slot. This transverse slot 8 and pin 10 are so located that when the pin is in the slot 8, it holds the bolt retracted, and as the bolt is moved inwardly the cam or inclined wall of the longitudinal slot 9 puts the spring 13 under compression, so that when the bolt is fully retracted, the spring will turn the lever 11 on its pivot and thus carry the pin into the transverse slot and hold the bolt retracted. With the bolt retracted and so held by the lever, the free end of the latter will be in a position to engage the shoulder 15 on the strike plate, hence when the door is closed, the lever coming in contact with the shoulder, will be turned, and move the pin 10 into alinement with the longitudinal slot 9, thereby releasing the bolt and permitting the spring 16 to force or shoot the bolt 3 to its projected position.

Pivotally mounted on the bolt 3, is the bolt deadlocking tumbler 17 which latter is provided with a beveled shoulder 18, which falls in front of the beveled front face of stud 6 when the bolt is projected, and absolutely prevents the bolt from being forced inwardly, by pressure against its outer end, such as by a thin instrument inserted between the face plate of the lock and the keeper. This dead locking tumbler 17 projects over the cam 4 of the knob 5, so as to be engaged and lifted thereby before the cam engages the shoulder 19 on the bolt for

retracting same, and it and the bolt are also engaged by the cam 18a, which latter is carried on the inner face of the cover plate of the lock and is actuated by a key lock, such as a pin tumbler lock, in the usual and well known manner. Both cams 4 and 18a rest within the opening in the shank or stem of the bolt, and when actuated, disengage the dead locking tumbler from the stud 6. After the bolt has been retracted and locked in such position by the pin on the bolt controlling lever, it can be rendered inoperative so that the door can be shut without throwing the bolt, by simply turning the knob in the reverse direction so as to cause the cam to engage the rear wall 20 of the opening in the bolt shank as shown in dotted lines in Fig. 3. In the ordinary operation of the door, the turning of the knob or the key retracts the bolt. As the bolt reaches its innermost position the pin 10 on the bolt controlling lever 11, engages the wall of the transverse slot in the bolt and locks the bolt in its retracted position. As the door nears its closed position, the end of the bolt controlling lever 11 comes in contact with the shoulder 15 on the keeper, and the continued movement of the door to its closed position, turns the bolt controlling lever 11 until the pin 10 thereon alines with the longitudinal slot in the bolt, whereupon the spring 16 forces the bolt to its projected or locking position.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but,

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

1. In a latch the combination with a casing, a bolt having slots in one edge, a tumbler for deadlocking the bolt, and means for retracting the bolt, of a bolt controlling lever pivoted to the casing and projecting through the face plate of the latter so as to engage the strike plate, and a pin carried by said lever and always resting and moving in slots in the bolt, whereby when the bolt is retracted it will be so held by the pin on the lever engaging a wall of the slot, and will be released by the engagement of the lever with the strike plate of the lock.

2. In a latch, the combination with a casing, a bolt having a transverse slot and communicating longitudinal slot, a tumbler carried by the bolt and adapted to engage a fixed part in the casing for deadlocking the bolt when the latter is projected, and means for actuating the tumbler and retracting the bolt, of a spring pressed lever pivoted to the latch case and projecting through the face plate thereof, and a pin carried by said lever and resting in the slots in the bolt and adapted to engage the wall of the transverse slot and hold the bolt retracted while the door is open and to release the bolt when the lever carrying the pin engages the strike plate or keeper.

3. In a latch, the combination with a casing, a bolt therein, a spring tending to force the bolt outwardly and automatically operating means for holding the bolt retracted against the action of the spring, of a manually actuated cam adapted when turned in one direction to retract the bolt, and also adapted when turned in the opposite direction after the bolt has been retracted to hold the bolt retracted and render it inoperative against the action of the automatic holding means.

4. In a latch, the combination with a casing, a bolt therein, a spring tending to force the bolt outward, and a tumbler for deadlocking the bolt in its projected position, of a lever pivoted adjacent to the bolt and provided with a pin adapted to engage a shoulder on the latter for holding the bolt retracted, a fixed stop for tripping said lever to release the bolt as the door is closed, and a cam for actuating the tumbler and retracting the bolt, and also adapted after the bolt has been retracted to be moved into position to hold the bolt into its retracted position inoperative against the releasing action of the pin on the pivoted lever.

5. In a latch, the combination with a casing, a bolt therein having a transverse slot and a longitudinal slot, a deadlocking tumbler for the bolt and means for retracting the bolt, of a lever pivoted to the latch casing, projecting through the face plate thereof and adapted to engage the strike plate or keeper and be moved thereby as the door is closed, and a pin on said lever, the said pin resting in the longitudinal slot in the edge of the bolt, and adapted to move into the transverse slot when the bolt is fully retracted and engage a wall of said slot to hold the bolt retracted.

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

ALFRED BOCK.

Witnesses:
FRED C. SQUIRES,
WM. J. NAHRWOLD.