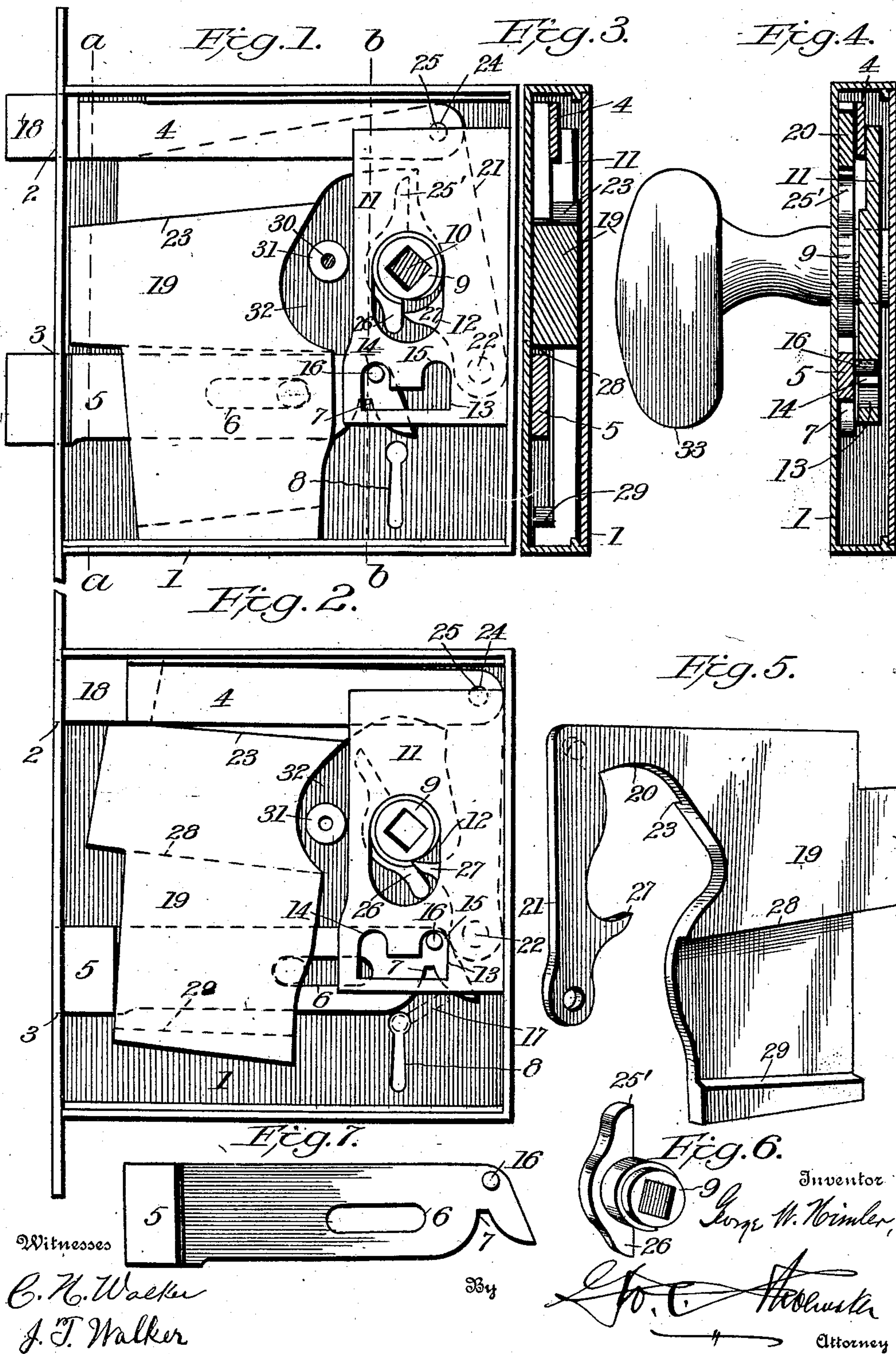


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PATENTED JAN. 22, 1907.

G. W. HIMLER.
COMBINED LOCK AND LATCH.
APPLICATION FILED DEC. 12, 1905.



UNITED STATES PATENT OFFICE.

GEORGE W. HIMLER, OF LATROBE, PENNSYLVANIA.

COMBINED LOCK AND LATCH.

No. 841,967.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed December 12, 1905. Serial No. 291,471.

To all whom it may concern:

Be it known that I, GEORGE W. HIMLER, a citizen of the United States, residing at Latrobe, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Lock and Latch, of which the following is a specification.

This invention relates to a combined lock and latch.

One object of the invention is to provide an exceedingly simple, inexpensive, durable, and efficient lock and latch for inside or outside use with respect to dwellings or other buildings.

Another object resides in the provision of a combined lock and latch wherein the use of springs is obviated.

A still further object of the invention is to provide a construction and arrangement whereby the lock and latch bars may be operated independently of each other and the latch-bar held normally in operative position and movable regardless of whether or not the key be in coöperative relation with the lock-bar.

With the above and other objects in view the present invention consists in the combination and arrangement of parts hereinafter fully described, clearly illustrated in the accompanying drawings, and particularly set forth in the appended claims, it being understood that changes may be made in the form, proportion, size, and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a plan view of the invention, showing the lock and latch bars projecting from the casing, the face-plate being removed in order to illustrate the interior parts. Fig. 2 is a view similar to the above, showing the lock and latch bars retracted. Fig. 3 is a vertical sectional view on the line *a a* of Fig. 1 and including the face-plate. Fig. 4 is a view similar to Fig. 3 on the line *b b* of Fig. 1. Fig. 5 is a detail view of the weight for automatically throwing the latch-bar outwardly of its casing. Fig. 6 is a detail view of the roll-back. Fig. 7 is a detail view of the lock-bar.

Referring now more particularly to the accompanying drawings, the reference character 1 designates a suitable casing of any desired material, having its front end provided with upper and lower openings 2 and 3, respectively, for the passage therethrough of

the latch and lock bars 4 and 5. It will be seen that the latch-bar is above the lock-bar and that both have a sliding movement outwardly of the casing. The lock-bar has a short longitudinal slot 6 intermediate its ends, whereby it may have a true sliding movement, and in order that it may be moved inwardly and outwardly of the casing I provide the inner end thereof with a key-receiving notch 7, which is arranged at all times in close proximity to the key-slot 8 of the casing.

Mounted upon the roll-back 9, in which the knob-spindle 10 is fitted, is a vertically-sliding tumbler 11, the latter having a short vertical slot 12 embracing the said roll-back and also provided with a short horizontal slot 13, in the upper edge of which latter will be seen the alining notches or recesses 14 and 15, designed for interchangeable reception of the pin 16, projecting from one side of the lock-bolt to hold the latter securely either in its inward or outward position. In other words, by referring to Fig. 1 it will be seen that the notch or recess 14 of the sliding tumbler is in engagement with the said pin 16, thereby holding the lock-bar extended from its casing. When the bit 17 of the key is turned into the notch 7, it contacts with the lower edge of the sliding tumbler 11, moving the latter upwardly, permitting further turning of the key to move the lock-bar outwardly through the opening 3 of the casing, when the sliding tumbler 11 will fall to present its opposite notch or recess 15 to the pin 16, as clearly shown in Fig. 2, and thereby hold the lock-bar in its unlocked position. It will be observed that this operation just alluded to may be performed without interfering in the least with the latch-bar or its adjunctive parts.

In order to hold the outer end 18 of the latch-bar outwardly of the casing—that is to say, projected through the opening 2 in the front of the casing so that a door may be held firmly in its closed position and latched automatically—I provide a peculiarly-shaped weight 19 of any suitable material, whose upper end is reduced and extended rearwardly, as at 20, and then downwardly, as at 21, the extremity of the downwardly-directed portion being pivoted to one side of the casing by means of a suitable pivot-pin or projection 22. The reducing of the upper end of the weight results in the formation of a shoulder 23, between which and the upper

face of the casing 1 the latch-bar slides. The rear end of the latch-bar is provided with a perforation 24 for engagement with a pin or projection 25 upon the corresponding side of the rearwardly-directed portion 20 of the weight, so that as the weight drops to its normal position the latch-bar is thrown outwardly. Obviously, therefore, when the headed or outer end of the latch-bar contacts with a slotted plate of a door-jamb (not shown) it may move inwardly against the action of the gravitating weight 19 until the slot of said plate is reached, when the gravitating weight will cause forward or outward movement of the latch-bar, causing its outer end to enter the said slot, and thereby automatically latch the door against swinging movement. To unlatch the door, I provide the roll-back 9 with a finger 26', designed to move into engagement with the downwardly-directed portion 21 of the weight when the door-knob is turned backwardly, and thereby lift the weight and cause the latch-bar to be drawn inwardly of the casing. In view of the fact that the door-knob may be turned forwardly instead of rearwardly I provide the roll-back 9 with a second finger 26, designed to cooperate with a finger 27, carried by the downwardly-directed portion 21 of the weight. It is therefore apparent that the knob-spindle may be turned in either direction to permit of unlatching the door and that such unlatching may be accomplished without interference with the parts making up the positive locking means, the latter of course having to be in unlocked position to permit of opening the door. It should be noted that the aforesaid shoulder 23 of the gravitating weight is upon one side thereof, while upon the opposite side there are formed spaced upper and lower shoulders 28 and 29, which converge rearwardly and between which the lock-bar slides. These shoulders are so spaced that the weight may rise and fall without hindrance on the part of the locking-bolt.

The facing-plate of the casing is secured in proper place by means of a suitable fastening 30, designed to pierce the same and the post 31, which is disposed between the recess 32 of the weight and the roll-back and vertical tumbler. It should be noted that the weight is pivoted at a point beneath the roll-back in which the knob-spindle is mounted and that the knob 33 is mounted eccentrically of its spindle. This eccentric mounting of the knob tends to take the strain off the gravitating weight. In other words, the knob by reason of its eccentric mounting cooperates with the parts to right them, relieving the weight of strain.

From the foregoing it will be seen that not a single spring is employed in my invention, which is consequently less liable to derangement.

It will also be seen that my invention is

very simple, and therefore inexpensive of manufacture.

It is obvious that the invention may be applied to the inside or outside of a door and that its parts may be readily reversed for application to doors. If the lock should become accidentally broken, which, however, is not likely, any person could readily determine what parts were out of order and perhaps remedy the trouble at once.

Attention will here be directed to the fact that, as best indicated in Fig. 6 of the drawings, the elements 25' and 26 constitute a roll-back for actuating the gravity-weight 19, and this roll-back is provided with an integral cylindrical hub 9, through which the knob-spindle passes, the slidable tumbler 10 being so mounted upon the hub of the roll-back as not to be affected by the rotation of said roll-back, whereby the knob-spindle may be turned to actuate the latch-bar 4 without releasing or otherwise affecting the lock-bar 5.

What is claimed is—

1. A lock having a roll-back, and a tumbler supported thereon, the roll-back being rotatable independently of the tumbler.
2. A lock having a roll-back, and a slidable tumbler supported thereon, the roll-back being rotatable independently of the tumbler.
3. A lock having a roll-back provided with a cylindrical hub, and a slotted tumbler receiving the roll-back through the slot with one end wall of the slot supported upon the roll-back, said roll-back being capable of rotation within the slot without imparting movement to the tumbler, and the tumbler capable of sliding in the direction of its slot upon the roll-back.
4. A lock having a lock-bar, a latch-bar, a roll-back for the latch-bar, and a tumbler for locking the lock-bar, said tumbler being supported on the roll-back in a manner to prevent movement thereof by rotation of the roll-back and capable of moving upon the roll-back for locking and releasing the lock-bar.
5. A combined lock and latch comprising lock and latch bars, a swinging gravity-weight operatively engaged with the latch-bar, a roll-back for the weight, and a slidable locking-tumbler for the lock-bar, the lock-bar and tumbler being arranged for control by a key, and the tumbler being supported upon the roll-back in a manner to permit movement of the roll-back without movement of the tumbler.
6. A combined lock and latch comprising substantially parallel endwise-movable latch and lock bars, a swinging gravity-weight recessed in opposite sides and having the latch and lock bars working in the respective recesses, said weight being provided with an opening, a roll-back working in the opening in cooperative relation with its walls for swinging the weight, said roll-back having

a cylindrical hub projecting at one side thereof, and a slidable tumbler having a slot receiving the hub of the roll-back which is rotatable in the slot without affecting the tumbler, the tumbler being provided with a branched slot, and the lock-bar having a projection for alternate engagement with the branches of the slot to lock the bar in open and closed positions, the lock-bar and the tumbler being arranged for actuation by a key.

7. A combined lock and latch comprising a casing having lock and latch bar openings, lock and latch bars mounted to slide through the corresponding openings, a gravitating weight provided with an angular extension and pivoted within the casing at the free extremity of its angular extension, the latch-bar being pivoted to the weight, the lock-bar having a projection at one end, a roll-back disposed between the weight proper and its angular extension, and a sliding tumbler supported upon the roll-back and provided with means for interchangeable interlocking engagement with the projection of the lock-bar to hold the latter against accidental displacement at either end of its movement, the movement of the tumbler and its interchangeable interlocking engagement with

the lock-bar being controlled by the key of the lock.

8. A lock having a roll-back provided with a cylindrical hub integral therewith, and a tumbler supported upon the hub, the roll-back being rotatable independently of the tumbler.

9. A lock having a roll-back provided with an integral cylindrical hub, and a slidable tumbler supported upon the hub, the roll-back being rotatable independently of the tumbler.

10. A lock having a roll-back, a latch-bar, a roll-back for the latch-bar, the roll-back having an integral cylindrical hub, and a tumbler for locking the lock-bar, said tumbler being supported upon the hub of the roll-back in a manner to prevent movement thereof by rotation of the roll-back and capable of moving upon the roll-back for locking and releasing the lock-bar.

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses.

GEORGE W. HIMLER.

Witnesses:

ALEX H. WHITE,
R. P. BROWN.