

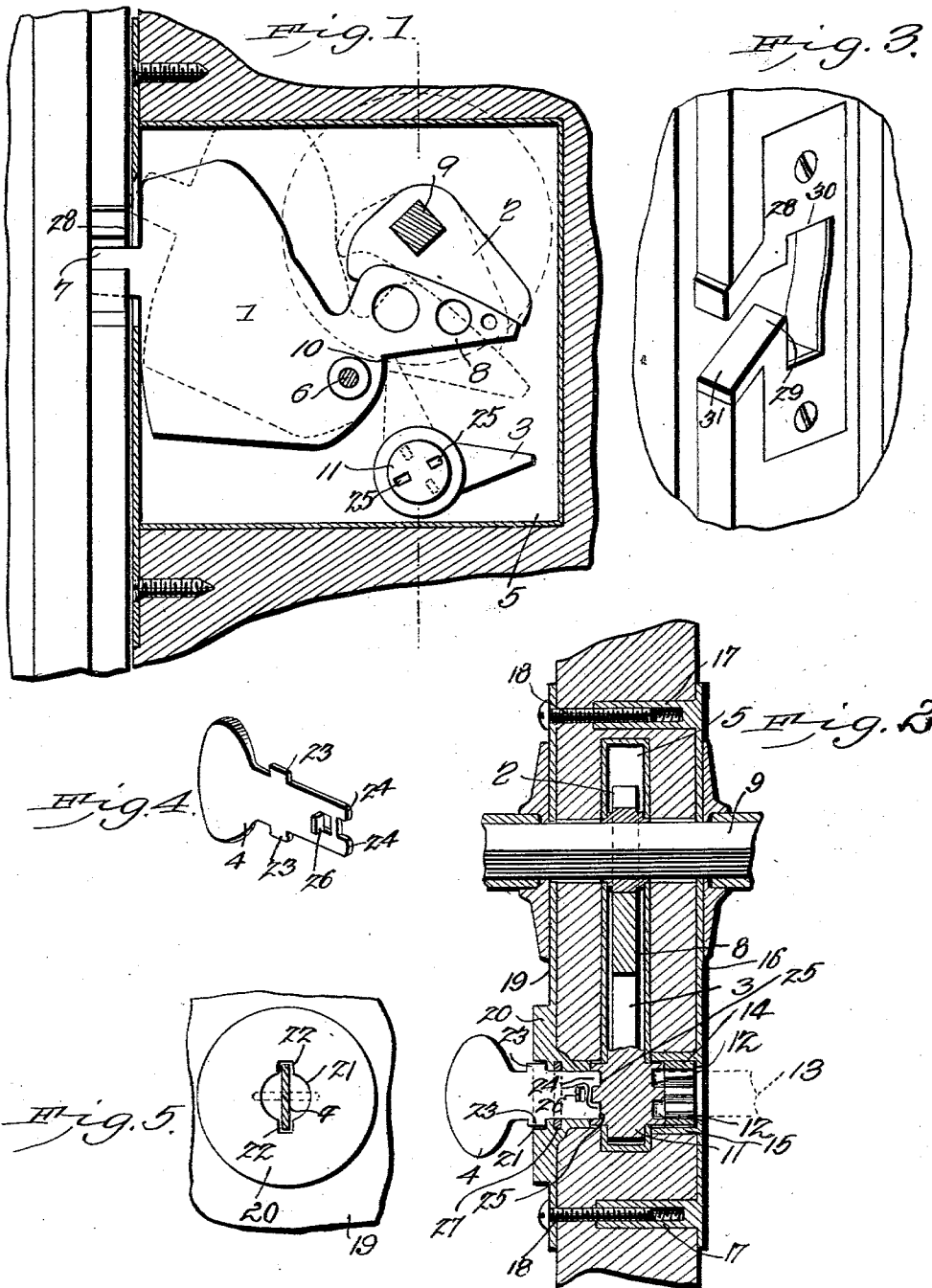
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J. B. COX.
COMBINED LOCK AND LATCH.

(Application filed Mar. 24, 1902.)

(No Model.)



Witnesses
E. J. Stewart
Paul Elliott

J. B. Cox, Inventor.
by *Chas. H. Knowlton*
Attorneys

UNITED STATES PATENT OFFICE.

JAMES BURTON COX, OF CANTON, NEW YORK.

COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 716,671, dated December 23, 1902.

Application filed March 24, 1902. Serial No. 99,704. (No model.)

To all whom it may concern:

Be it known that I, JAMES BURTON COX, a citizen of the United States, residing at Canton, in the county of St. Lawrence and State of New York, have invented a new and useful Combined Lock and Latch, of which the following is a specification.

This invention relates to a combined lock and latch.

The object of the invention is to present a simply-constructed, thoroughly efficient, durable, and inexpensive form of lock and latch in which the force of gravity shall be utilized for actuating the latch-bolt in lieu of a spring, such as commonly employed.

A further object is to provide novel means for rendering the latch-key inoperable for operating the locking-tumbler.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a combined lock and latch, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated a form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in front elevation of the combined lock and latch in coactive relation with a door-frame, exhibiting the locked position of the latch in full lines and its unlocked position in dotted lines, the unlocked position of the locking-tumbler being indicated in full lines and its locked position in dotted lines. Fig. 2 is a view in transverse section through the lock, showing the tumbler-locking key in locked engagement with the tumbler to prevent its being turned to actuate the latch-bolt from the outside through the medium of an ordinary pass-key, indicated in dotted lines. Fig. 3 is a perspective detail view of the improved keeper. Fig. 4 is a perspective detail view of the tumbler-locking key detached. Fig. 5 is a detail view in elevation of a plate with

which the tumbler-locking key coacts to effect locking of the tumbler against rotation.

The lock constituting this invention is composed, generally stated, of four coöperative elements—namely, a latch-bolt 1, a latch-lifter 2, a locking-tumbler 3, and a tumbler-locking key 4—these parts, with the exception of the tumbler-locking key, being housed in a suitable casing 5 of the usual or any preferred construction. The lock herein shown is of the ordinary mortise type; but it is to be understood that the improvements herein defined are adapted for use in connection with an outside lock, and as this will be obvious detailed illustration thereof is deemed unnecessary.

The latch 1 is pivoted intermediate of its ends upon a pivot 6 and is counterweighted, the heavy extremity being at the forward end of the latch, or that carrying the bolt 7. The rear end of the latch carries an arm or projection 8, constituting a bearing-surface to be engaged by the members of the latch-lifter carried by the usual knob-spindle 9. The surfaces of the latch-lifter that coact with the bearing-surface 8 are rounded or curved to present cam-surfaces, which by impingement with the bearing-surface will effect lifting of the latch when the knob is turned in either direction, as will be obvious by reference to Figs. 1 and 2. The under side of the bearing-surface 8 is provided adjacent to the pivot 6 with a shoulder 10, adapted to form a stop to limit the inward movement of the locking-tumbler, which latter is associated with a spindle 11, the terminals of which work in suitable openings in the casing members, as clearly shown in Fig. 2. On one side the spindle is provided with one or more notches 12 to be engaged by the wards of an ordinary latch or pass key 13, (indicated by dotted lines,) which upon being turned will move the tumbler into or out of engagement with the latch. The key 13 herein shown is of the ordinary flat or Yale type and is adapted to engage the slot of a disk 14, suitably housed in an inward-extending tubular extension 15, carried by a face-plate 16, the said plate being provided with two inward-projecting tubular threaded extensions 17, engaged by screws 18, passing through a face-plate 19, secured to the inner

side of the door. While generally it will be preferred to employ these face-plates 16 and 19, it is to be understood that the invention is not to be limited to their employment, as they may be dispensed with and the disk 14 be associated with the lock-plates in the usual manner. On the inner side of the door is arranged a disk 20, which may be either integral with the face-plate 19 or detachable therefrom, and this disk is provided with a centrally-disposed orifice 21, provided with oppositely-alined notches 22, designed to be engaged by lugs or projections 23 of the tumbler-locking key 4 when the latter is in the position shown in Fig. 2, the inner end of the key having wards 24, adapted to engage recesses 25 in the inner face of the disk. The key is also provided with a lug or projection 26, disposed near its inner end and designed to limit the outward movement of the key, the shank of the key engaging a slot formed in a disk 27, suitably housed for rotary movement within the disk 20. When the lock is used as a day-latch, the locking-tumbler will be turned to the position shown in full lines in Fig. 1, thereby leaving the latch-bolt 1 free to be rotated by the knobs. When it is to be used as a night-latch, the tumbler-locking key is moved outward to the position shown in dotted lines in Fig. 2, thereby freeing the notches 25 of the spindle from the wards 24 and permitting the locking-tongue to be turned from the outside by the ordinary night-key. When it is desired positively to lock the locking-tumbler against being raised from the outside by the use of the night-key, the key 4 is pushed inward until its wards engage with the recesses of the spindle and the lugs 23 engage the notches 22 of the disk 20, when it will be impossible to throw the locking-tumbler by the use of an ordinary key, and as a solid wall of metal is interposed between the night-latch-key opening and the tumbler-locking key it will be seen that without destroying the lock when the tumbler-locking key is once positioned as shown in Fig. 2 it will be an utter impossibility to pick the lock from without. In order to guard against accidental locking of the spindle in the day-time, it is intended that the tumbler-locking key after having been moved outward to free it from engagement with the spindle shall be given a half-turn to bring the lugs 23 over the solid portion of the disk 20, as indicated by dotted lines in Fig. 5.

The keeper 28, which is secured to the jamb of the door in alinement with the bolt 6, is provided with two recesses or slots 29 and 30, disposed at an angle to each other, the said keeper being a plate of metal and its construction being such as to permit of its either being secured to the right or left hand side of the jamb. The slot 30 occupies approximately a vertical position when the keeper is secured to the jamb, and the slot 29 is disposed at such an angle with relation thereto

that its lower wall 31 by contact with the bolt 7 will lift the latch automatically and allow the bolt to drop into the recess 30, and thereby be held securely locked in place.

It will be seen from the foregoing description that the lock of this invention absolutely dispenses with the employment of springs for any purpose, the proper operation of the locking-latch being secured wholly through the agency of gravity. The lock is therefore rendered certain and positive of operation and cannot get out of order unless the parts are strained by being tampered with. Moreover, by the simple construction of the locking-tumbler certain and positive locking of the latch may be effected, while the coercion therewith of the tumbler-locking key will render the lock absolutely burglar-proof.

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

1. In a lock, the combination with a latch-bolt, of a locking-tumbler therefor adapted to be operated from the outside by a key, and a reciprocatory key arranged on the inner side of the lock and adapted, when moved inward, to lock the tumbler against movement from the latch-key and when moved outward to release the tumbler.

2. In a lock, the combination with a latch-bolt and means for operating the same, of a locking-tumbler having a spindle provided at its outer end with means to be engaged by the wards of a latch-key to effect turning of the tumbler, a reciprocatory key disposed on the inner side of the lock and having terminal wards to engage notches in the inner ends of the spindle, and means for permanently associating the last-named key with the lock.

3. In a lock, the combination with a latch-bolt and means for operating the same, of a locking-tumbler having oppositely-projecting spindles each provided with key-engaging means, and a reciprocatory key permanently associated with the inner side of the lock-facing and provided with means to interlock with the spindle and the facing to hold the tumbler against turning.

4. In a lock, the combination with a latch-bolt and means for operating the same, of a locking-tumbler having oppositely-projecting spindles each provided with key-engaging means, a reciprocatory key permanently associated with the inner side of the lock-casing and provided with means for locking the spindle against turning, and with laterally-extending projections, and a disk on the lock-casing provided with recesses to be engaged by the projections.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES BURTON COX.

Witnesses:

WORTH CHAMBERLAIN,
E. J. CHAMBERLAIN.