

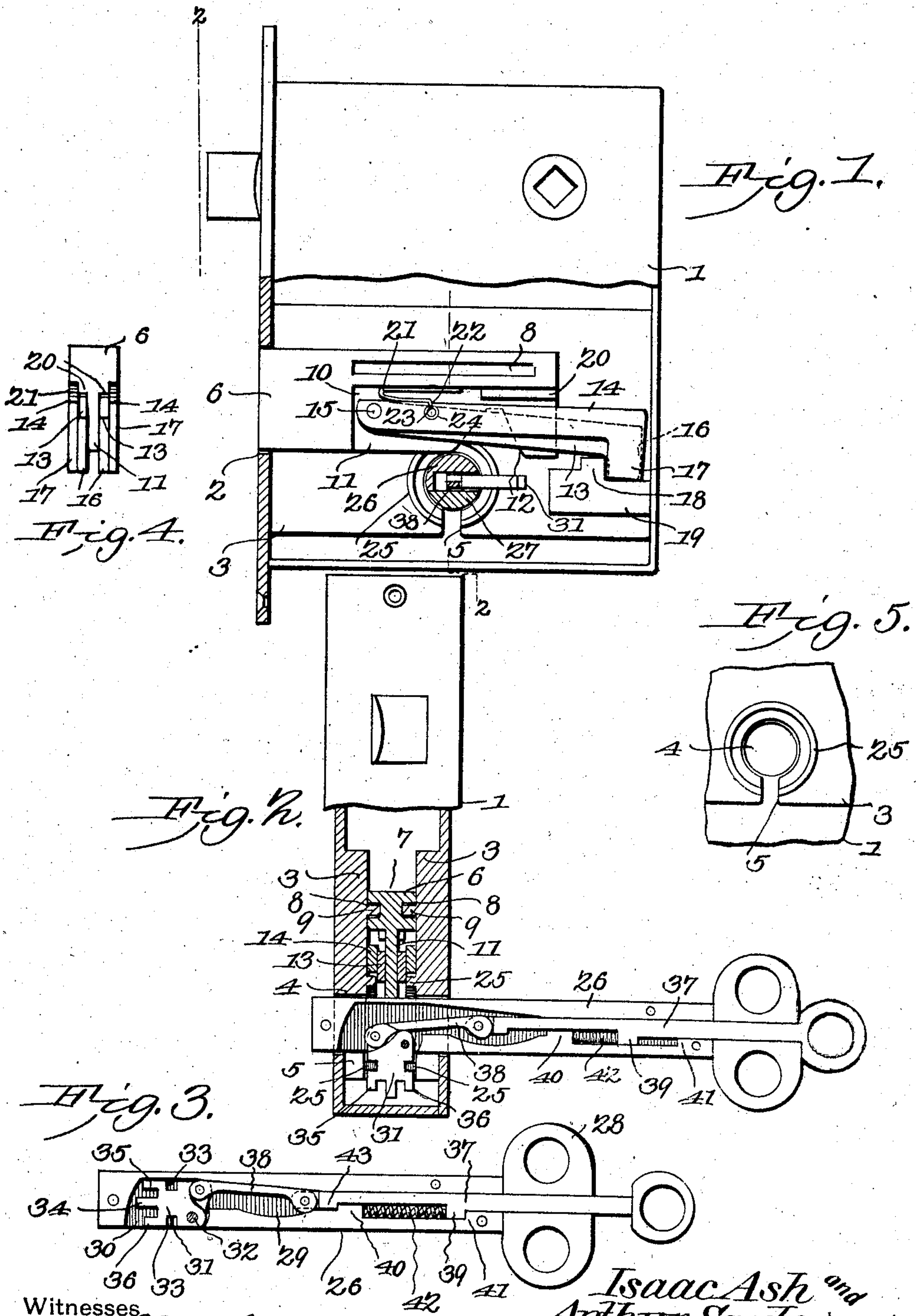
No. 827,201.

PATENTED JULY 31, 1906.

I. ASH & A. SAYLES.

KEY.

APPLICATION FILED MAY 5, 1905.



Witnesses

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# UNITED STATES PATENT OFFICE.

ISAAC ASH AND ARTHUR SAYLES, OF MARQUETTE, MICHIGAN.

## KEY.

No. 827,201.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed May 5, 1905. Serial No. 259,015.

*To all whom it may concern:*

Be it known that we, ISAAC ASH and ARTHUR SAYLES, citizens of the United States, residing at Marquette, in the county of Marquette and State of Michigan, have invented a new and useful Key, of which the following is a specification.

This invention relates to keys, and is primarily designed to provide a novel form of key having a foldable ward or bit capable of being housed within the barrel or shank of the key to permit introduction of the latter into the lock and which is capable of being projected after being entered into the lock, so as to cooperate with the tumblers or other locking elements for releasing the bolt by manipulating the key in the usual manner.

Another object of the invention is to maintain the ward or bit of the key projected in its operable position when in use in the lock without requiring any care on the part of the operator and to enable the automatic return of the bit or ward into the barrel of the key when the locking and unlocking operations have been completed, so as to permit convenient withdrawal of the key without requiring any manual manipulation thereof to return the ward or bit into the key.

With these and other objects in view, the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of a lock having a part of the case broken away to show the bolt and the locking-tumbler, the barrel of the improved key being shown in section and the ward or bit in elevation. Fig. 2 is a sectional view on the line 2-2 of Fig. 1 with the key in its initial inserted position. Fig. 3 is a view of the key, having one side of the barrel removed to disclose the means for projecting and withdrawing the ward or bit. Fig. 4 is a rear elevation of the bolt and its locking-tumblers. Fig. 5 is a fragmentary elevation of the keyhole portion of one of the face-plates of the lock-case looking at the inner side thereof.

Like characters of reference designate cor-

responding parts in each and every figure of the drawings.

In order that the operation of the present invention may be fully understood, there has been shown in the drawings a form of lock with which the present key is particularly designed to cooperate; but it will be understood that the key forms the subject-matter to be claimed in the present application.

The lock includes an ordinary case 1, preferably of the mortise type and provided in one edge with a bolt-opening 2. The opposite face-plates of the case of the lock are provided with corresponding internal enlargements 3, extending rearwardly at opposite sides of the bolt-opening 2. Each face-plate is provided with a circular key-opening 4, extending through the enlargements 3 and having a slot 5 intersecting the lower side of the opening and the enlargement, but not extending into the face-plate. Working in an endwise direction through the opening 2 is the bolt 6, which is received within a guideway 7, formed between the enlargements or guide members 3. Opposite sides of the bolt at the rear and adjacent its upper edge are provided with longitudinal grooves or guideways 8, in which are received guide ribs or projections 9, carried by the guide members 3, whereby the bolt is held in position and prevented from dropping or tilting downwardly. Beneath each groove 8 the bolt is provided with a longitudinal recess or cut-away portion 10, which intersects the lower edge of the bolt and produces a relatively thin web 11, which has an inverted substantially U-shaped notch or recess 12 intersecting its lower edge adjacent its rear end.

In each recess 10 of the bolt there is a pair of tumblers (designated 13 and 14) having their forward ends pivotally mounted upon a common pivot pin or projection 15, extending laterally from the back wall of the recess 10. The rear free ends of these tumblers extend in rear of the bolt and are provided, as best shown in Fig. 4 of the drawings, with the respective pendent fingers 16 and 17, designed to take back of an upstanding shoulder 18, carried by a cross-bar 19, extending between the face-plates of the lock-case. The outer tumbler 14 has a greater upward movement than the inner member 13, which is limited in its upward movement by a shoulder 20, provided upon the back of the recess 10.

Each tumbler is normally and yieldably maintained at its lower limit by means of a



U-shaped spring 21, which is interposed between the top of the tumbler and the under side of the top edge of the recess 10, the free end of the lower side of the spring being bent transversely downward to form a shank 22, the extremity of the shank being bent or rolled to form a loop or enlargement 23, which is snugly received within an opening 24 in the upper portion of the tumbler, there being a notch or slot intersecting the top edge of the tumbler and the opening to receive the stem 22 of the spring, whereby the latter is secured to the tumbler without requiring any extraneous fastenings.

Surrounding the keyhole 4 in each face-plate and upon the inner side of each guide member or enlargement 3 is an annular flange 25, which is intersected at its lower side by a notch or opening registering with the slot 5 in the guide 3. The upper portion of this flange underlies one or both of the tumblers 13 and 14, as shown in Fig. 2 of the drawings, so as to form a guard to prevent lifting of the tumblers except by means of the key expressly provided for the lock.

The key of the present invention includes a shank or barrel made up of longitudinal sections 26 and 27, of which the section 26 is provided at one end with a transversely-disposed handle 28. In the inner flat face of the key-section 26 there is an irregularly-shaped longitudinal passage or channel 29, which intersects the rear handle end of the section and terminates short of the front end thereof, where it intersects one longitudinal edge of the shank or barrel, as shown at 30. In the forward portion of the channel or passage 29 there is a bit or ward member 31, which is pivotally supported at its rear outer corner, as at 32, and is provided in its opposite edges with corresponding notches 33. At the middle of the front free end of the ward there is a projection 34, and spaced at suitable intervals at opposite sides of this projection are other shorter projections 35 and 36. In rear of the ward or bit there is a plunger 37, which is projected in rear of the handle 28 and has its forward end connected to the bit or ward by means of a link 38, which is pivoted at one end to the ward and at its opposite end to the plunger. The plunger is provided with a lateral shoulder 39, working between shoulders 40 and 41 in the channel or passage 29, and there is a helical spring 42 interposed between the front side of the shoulder 39 and the rear side of the shoulder 40, whereby the plunger is normally and yieldably held at its rearward limit, so as to retract or draw the bit or ward 31 entirely into the shank or barrel of the key. A shoulder 43 upon the plunger is arranged to engage the front side of the shoulder 40 to limit rearward movement of the plunger.

To project the bolt 6 from its retracted position, (shown in Fig. 1 of the drawings,) the

barrel of the key is introduced into either of the keyholes 4, and then the plunger of the key is forced forwardly, so as to swing the bit or ward 31 into a position at substantially right angles to the barrel, as shown in Fig. 2 of the drawings. It will here be explained that this projecting of the ward can be accomplished only when the opening 30 in the side is in alinement with the slots 5 of the guards 3. When the key is turned, the guard members 25 are received within the notches 33, the projections 35 and 36 engage and lift the respective tumblers 14, while the tumblers 13 are lifted by the back walls of the recesses between the middle projection 34 and the side projections 35 and 36 until the fingers 16 and 17 of the tumblers are elevated above the top of the shoulder 18, whereupon the central projection 34 strikes against the front wall of the notch 12 in the under side of the bolt 6 and moves the latter forwardly until the ward turns downwardly out of engagement with the bolt and the tumblers and the fingers of the latter drop in front of the shoulder 18, which locks the bolt against being moved inwardly.

Having fully described the invention, what is claimed is—

1. A key comprising a shank provided at one end with a handle and also having a longitudinal passage piercing the handle and provided at its opposite end with a lateral branch intersecting one side of the key, a ward located within the branch passage and capable of being projected outwardly there-through, a plunger working in the passage with one end in coöperative relation with the ward and its other end extending outwardly through the handle, and a spring to yieldably hold the plunger at its rear limit.

2. A key comprising a shank having a handle at one end and provided with a longitudinal passage intersecting the handle, and its other end provided with a lateral branch passage intersecting one side of the shank, shoulders within the passage, a ward normally contained within the branch passage and capable of being projected therethrough, a plunger working in the longitudinal passage and provided with a shoulder working between the shoulders of the passage, a link connecting the plunger and the ward, and a helical spring interposed between the shoulder of the plunger and the forward shoulder of the passage to hold the plunger retracted with its rear end in rear of the passage.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ISAAC ASH.  
ARTHUR SAYLES.

Witnesses:

JAMES DEAGON,  
A. WEST.