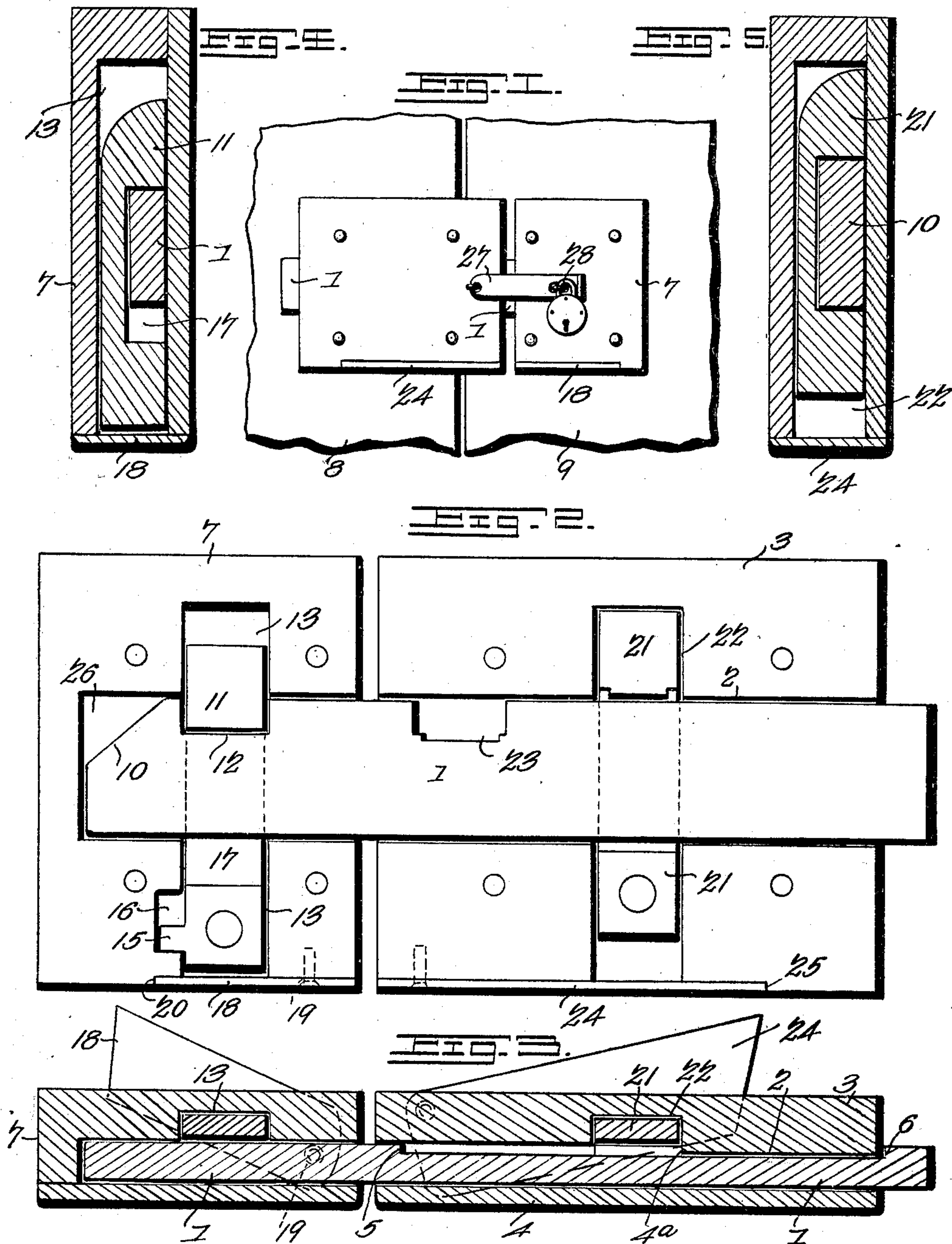


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Patented Apr. 1, 1902.

J. H. KRUSE.
SELF LOCKING LATCH.
(Application filed Dec. 16, 1901.)

(No Model.)



Witnesses
E. H. Smith
J. H. Kruse

J. H. Kruse, Inventor.
by *C. H. Snow*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN HENRY KRUSE, OF PUEBLO, COLORADO.

SELF-LOCKING LATCH.

SPECIFICATION forming part of Letters Patent No. 696,684, dated April 1, 1902.

Application filed December 16, 1901. Serial No. 86,131. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY KRUSE, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented a new and useful Self-Locking Latch, of which the following is a specification.

The invention relates to improvements in self-locking latches.

10 The object of the present invention is to improve the construction of latches and to provide a simple and comparatively inexpensive one of great strength and durability designed to be applied to both sliding and swinging doors and capable when applied to a sliding door of automatically locking when the door is closed and adapted also when applied to swinging doors of locking automatically when the bolt is shot.

20 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

25 In the drawings, Figure 1 is an elevation of a latch constructed in accordance with this invention. Fig. 2 is a rear elevation of the same, the back plates being removed to show the catches or tumblers. Fig. 3 is a horizontal sectional view, the parts being arranged as shown in Fig. 2. Figs. 4 and 5 are vertical sectional views illustrating the manner of mounting the tumblers or catches.

35 Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a sliding bolt disposed horizontally and mounted within a horizontal way 2 of a casing 3, which is provided with a removable back plate 4, secured to the body portion of the casing by bolts or other suitable fastening devices. The horizontal way 2 is formed by a groove having a shallow rear portion to provide a shoulder 4^a, and the inner or rear portion of the bolt is provided with a longitudinal recess forming shoulders 5 and 6, arranged to engage, respectively, the shoulder 4^a and the exterior of the casing, whereby the reciprocation of the bolt is limited and the latter prevented from leaving the casing. The recess of the bolt may be of any desired length to secure

the necessary movement to enable it to be disengaged from the casing 7 of a keeper. The casing of the bolt is designed to be mounted on a door 8, and the casing 7 is secured to the door-frame 9 or adjacent portion of the structure upon which the door 8 is mounted, and the said door 8 is adapted to slide to and from the part 9 or swing, according to the manner in which it is mounted.

The outer end 10 of the bolt is beveled to enable it to lift a tumbler or catch 11 of the casing 7, and it is provided adjacent to the beveled portion with a recess 12, adapted to be engaged by the catch or tumbler, whereby the bolt is automatically locked in engagement with the keeper. The vertically-movable catch or tumbler 11 is mounted in a vertical way 13, consisting of a groove formed in the front or body portion of the casing 7 and extending upward from the bottom thereof and provided with a horizontal projection 15 for engaging a recess 16, which prevents the catch or tumbler from dropping through the bottom of the casing 7. The catch or detent is provided between its ends with a longitudinal recess 17 to receive the bolt and to provide projecting upper and lower portions, the upper projecting portion being adapted to drop into engagement with the sliding bolt, as clearly illustrated in Fig. 2 of the accompanying drawings.

The lower end of the vertical way is normally covered by a pivoted plate 18, secured to the casing 7, in a suitable recess thereof, by means of a screw 19 or other suitable fastening device and engaging a shoulder 20 when it is closed. The shoulder 20 is arranged diagonally, and the plate is also cut at an angle, as clearly shown in Fig. 3. When the plate is closed it forms a continuation of the casing and is arranged at the bottom thereof and is practically concealed. In order to open the door, it is necessary to swing the pivoted plate outward to expose the catch or tumbler and then lift the latter and withdraw the bolt. The projection 15, which extends into the recess 16 at one side of the vertical way 13, limits the downward movement of the catch or tumbler.

The bolt is locked in its retracted position by means of a catch or tumbler 21, constructed substantially the same as that heretofore de-

scribed and provided with a recess 22, forming an upper head for engaging a notch or recess 23 of the bolt. The downward movement of the catch or tumbler 21 is limited by the bolt, which does not leave the recess 22. The casing 3 is provided with a pivoted plate 24, constructed similar to the plate 18 and normally covering the lower end of the vertical groove or way 25, in which the catch or tumbler 21 is mounted.

Any number of catches or tumblers may be employed, as will be readily understood, and the casing 7 is provided with a horizontal groove or way 26, terminating short of its rear side and arranged to receive the bolt.

It will be seen that the latch is exceedingly simple and inexpensive in construction, that the bolt is automatically locked in its closed position, and that it is similarly held in a retracted position. It will also be apparent that the bolt cannot be operated without lifting the catches or detents and that the pivoted plates are concealed beneath the casings.

The casings may also be connected by an ordinary padlock, and the casing 3 is provided with a hasp 27 for engaging a staple 28 of the casing 7, as illustrated in Fig. 1 of the drawings. The pivoted plates which form movable wall-sections may be mounted in any suitable manner, and the bolt-locking members or tumblers which are exposed for actuation by the movement of the plates or wall-sections may be otherwise arranged.

What I claim is—

1. A latch comprising a casing, a sliding bolt mounted in the casing and provided with a notch or recess, and a vertically-movable catch or tumbler mounted within the casing and supported by the bolt and adapted to engage the recess automatically, said catch or tumbler being arranged to be operated by the finger and being wholly concealed within the casing, substantially as described.

2. A latch comprising a casing having vertical and horizontal ways, the vertical way extending to the bottom of the casing, a sliding bolt mounted in the casing, a vertically-movable catch or tumbler arranged in the vertical way and adapted to engage the bolt, and a movable plate mounted on the casing and covering the lower end of the vertical way, substantially as described.

3. A latch comprising independent casings 3 and 7 designed to be mounted on a door, and a door-frame and having vertical and horizontal ways, a horizontal bolt provided with notches and vertically-movable catches or tumblers mounted in the vertical ways and arranged to engage the said notches to lock the bolt in its extended and retracted positions and concealed wholly within the casings, substantially as described.

4. A latch comprising the casings 3 and 7 having vertical and horizontal ways, a horizontal

bolt provided with notches, vertically-movable catches or tumblers mounted in the vertical ways and arranged to engage the notches for locking the bolt in its extended and retracted positions, and movable plates mounted on the casing and covering the lower ends of the vertical ways, substantially as described.

5. A latch comprising the casings 3 and 7 having vertical and horizontal ways, the casing 7 being also provided, adjacent to its vertical way with a recess 16, a horizontal bolt mounted in the horizontal ways and provided with notches, and the vertically-movable catches or tumblers arranged in the vertical ways and recessed to receive the bolt, one of the catches or tumblers being provided with a projection operating in the recess 16, substantially as described.

6. A latch comprising a casing having vertical and horizontal ways and provided at the horizontal way with a shoulder, a horizontal bolt arranged in the horizontal way and recessed to form opposite shoulders for engaging the said shoulder and the exterior of the casing, and a catch or tumbler mounted in the vertical way and arranged to engage the bolt, substantially as described.

7. A latch having its casing provided with a movable wall-section, and a finger-operated bolt-locking member arranged within the casing and exposed for actuation by the movement of said wall-section, substantially as described.

8. A latch comprising a casing having a movable wall-section, a finger-operated bolt, and a bolt-locking member arranged within the casing in position for engaging the bolt and adapted to be exposed for action by the movement of the said wall-section, substantially as described.

9. A latch comprising a casing having a movable wall-section, a sliding bolt mounted in the casing, and a finger-operated reciprocating bolt-engaging member located within the casing and exposed for actuation by the movement of the said wall-sections substantially as described.

10. A latch comprising a casing provided with a movable wall-section, a sliding bolt mounted in the casing and provided with a notch, and a vertically-movable finger-operated bolt-engaging member arranged within the casing in position for engaging the notch of the bolt, and exposed for actuation by the movement of said wall-section, substantially as described.

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

JOHN HENRY KRUSE.

Witnesses:

JAMES C. RITCHY,
WM. H. ROBERTS.