No. 781,185. PATENTED JAN. 31, 1905.

A. J. CAMPBELL.

LATCH AND LOCK.

APPLICATION FILED JAN. 26, 1904.

Fig. 1.

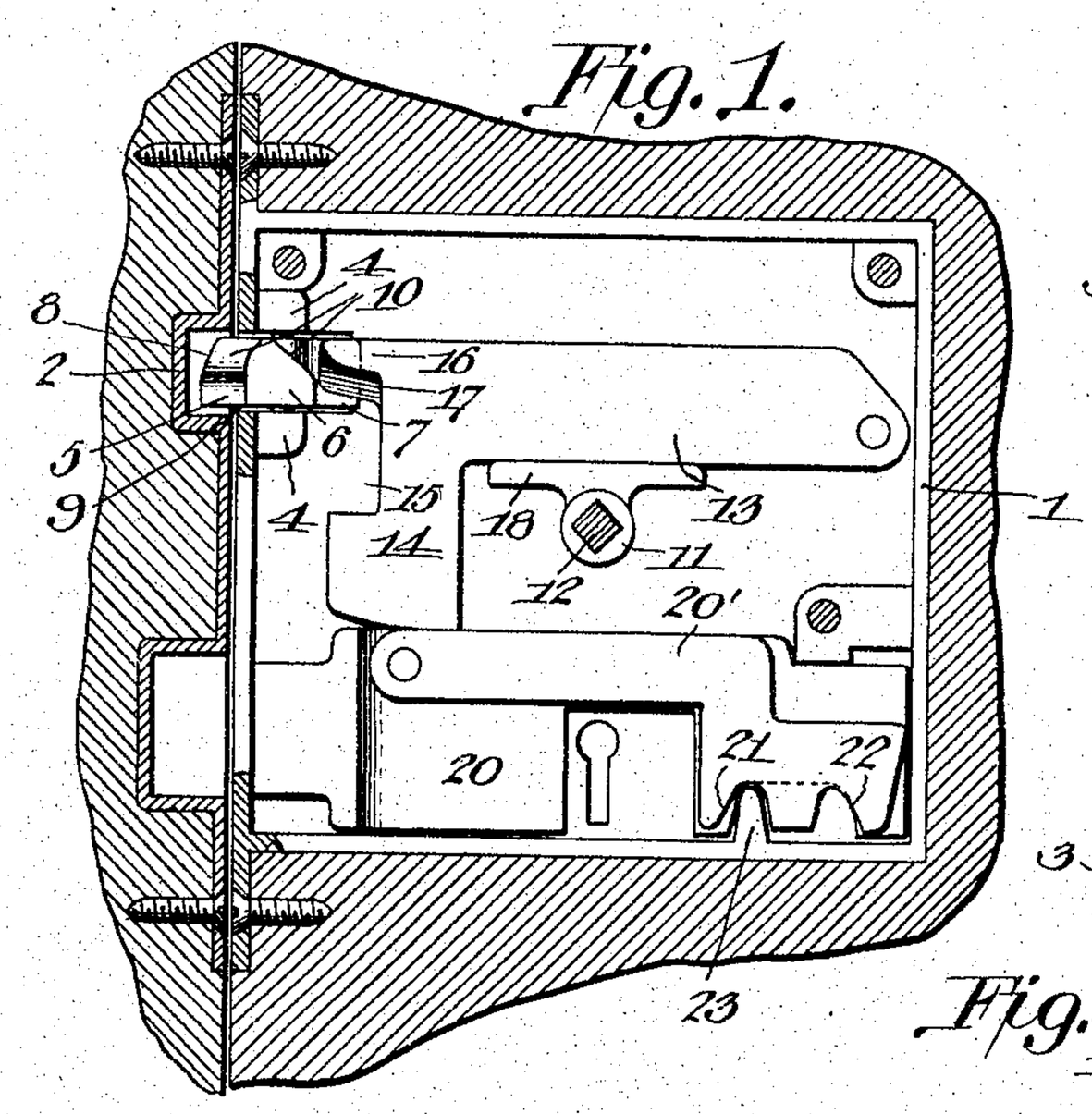
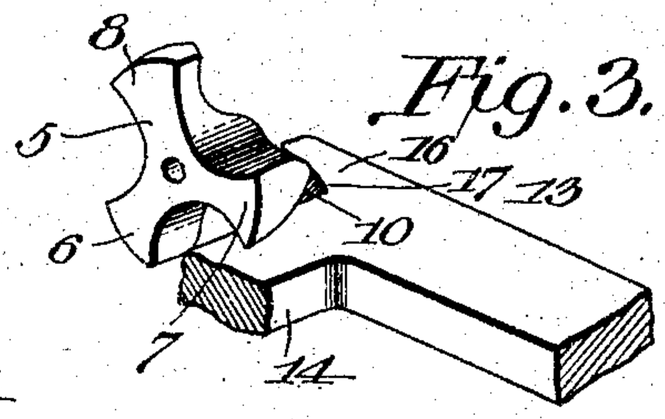


Fig. 3.



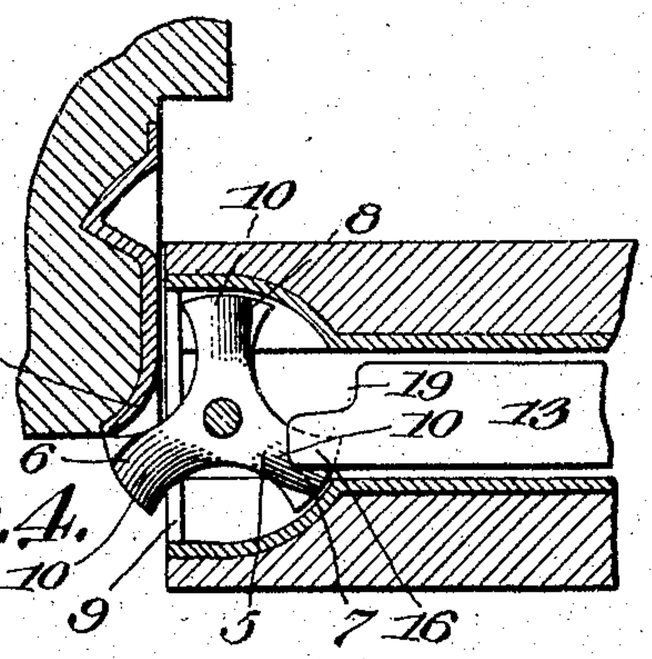


Fig. 4.

Fig. 2.

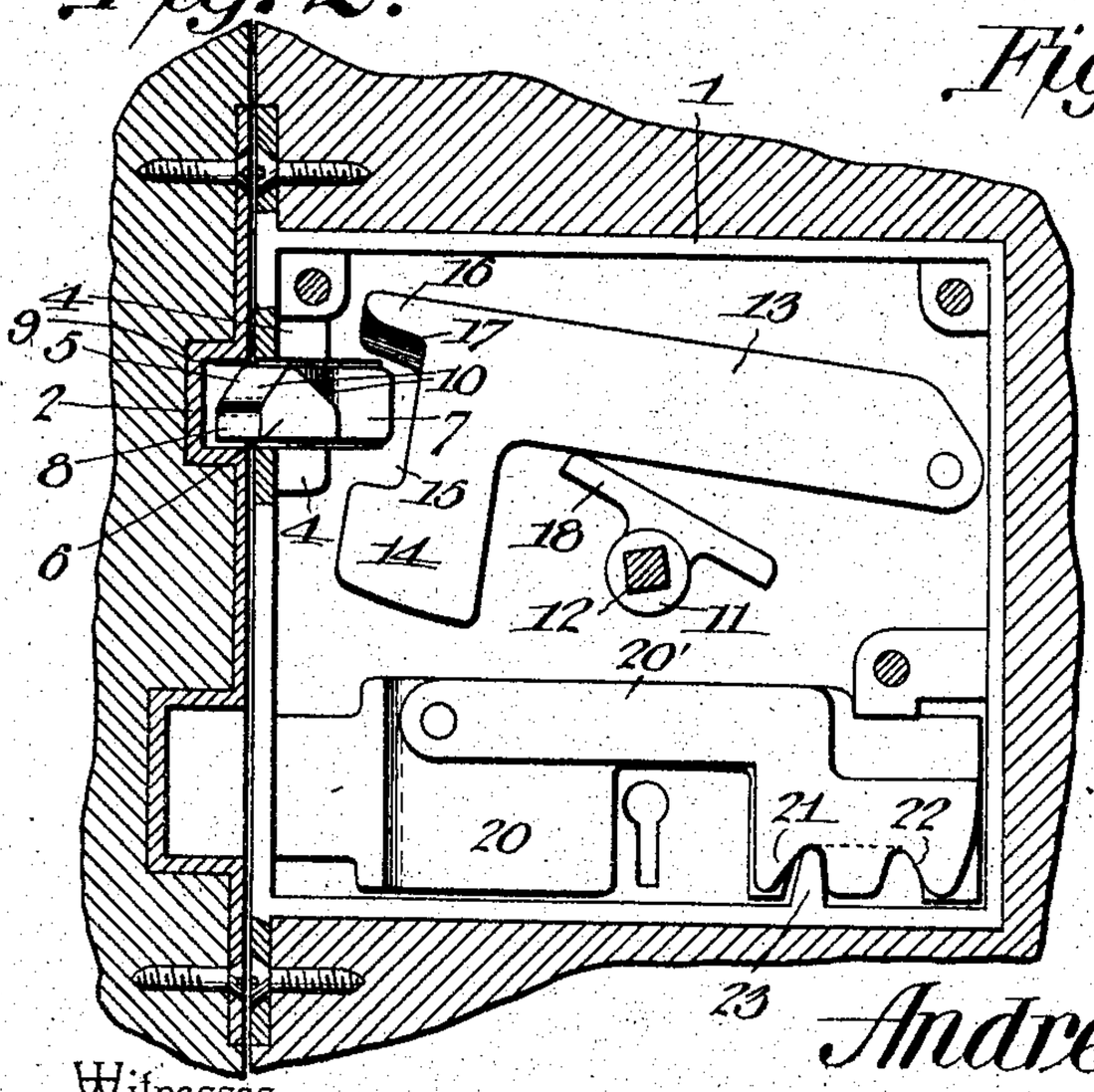
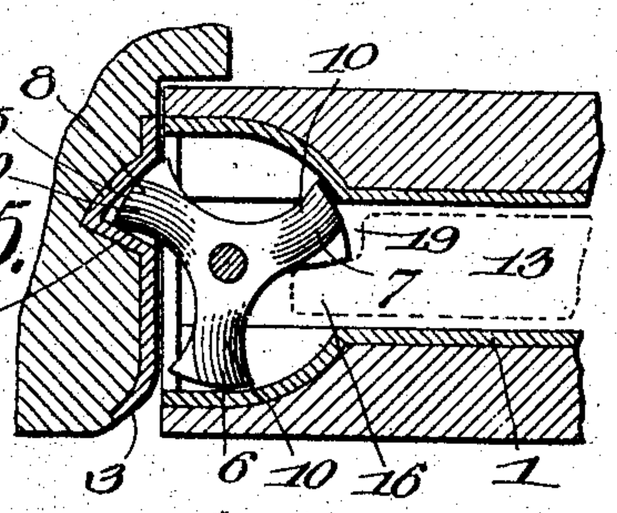


Fig. 5.



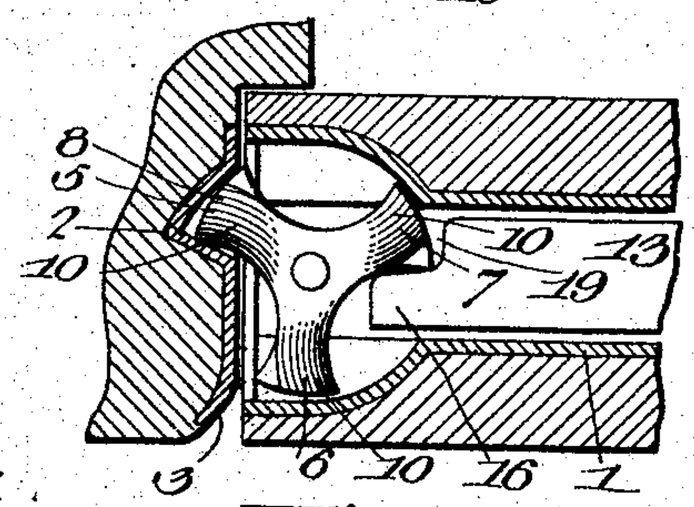


Fig. 6.

Witnesses

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PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 781,185. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

ANDREW J. CAMPBELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 781,185, dated January 31, 1905.

Application filed January 26, 1904. Serial No. 190,687.

To all whom it may concern:

Be it known that I, ANDREW J. CAMPBELL, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Latch and Lock, of which the following is a specification.

My invention relates to latches, and has for its objects to produce a comparatively simple inexpensive device of this character in which the latching member will move freely and smoothly into engagement with its keeper and be securely and automatically locked against disengagement from the latter until positively released.

To these ends the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a combined lock and latch embodying my invention, illustrating the parts in normal locking position. Fig. 2 is a similar view showing the parts in latch-releasing position. Fig. 3 is a detail perspective view of the latch and its locking member. Figs. 4, 5, and 6 are detail views showing the various steps of the latching operation.

Referring to the drawings, 1 designates a lock-casing, and 2 a keeper, these parts, which are conventionally shown herein, being of the usual or any preferred construction, except that the keeper has an inwardly curved or beveled transverse edge 3 for a purpose which will hereinafter appear.

Pivoted upon a vertical axis between suitable spaced bearings or lugs 4 within the casing is a rotary latching member or wheel 5, having a plurality of (preferably three) engaging arms or spurs 6 7 8, any one of which may as the member is rotated project outward through an opening 9 in the front wall of the casing for engagement with the keeper 2. The engaging fingers or spurs 6 7 8 each has its normally upper face downwardly and forwardly inclined or beveled, as at 10, relative to the direction of rotation of the member.

Disposed for rotation within the casing is the usual tubular barrel or sleeve 11, designed for the reception of the knob-spindle 12, over which there is arranged a latch engaging or locking member 13, preferably in the form of a normally horizontal bar, pivoted adjacent to its rear end and provided at its forward end with a depending extension or continuation 14, the front edge of which is recessed at 15, thereby producing upon the front of the bar a finger 16, the lower edge of which is beveled or inclined, as at 17, to coincide with the beveled faces 10 of the latch-fingers, with one of which latter the locking-bar engages to prevent retrograde motion of the latch. The locking member 13, which is weighted to automatically move by gravity into locking position, normally rests upon a projection or cam 18, carried by the sleeve 11, whereby upon rotation of the latter the member will be raised or moved to releasing position.

In practice when the lock is released from its keeper, as shown in Fig. 4, the finger 16 of the locking member will lie in position between a pair of the latching-fingers—say, for instance, fingers 7 and 8—while finger 6 will under such conditions project outward through the opening in the casing. Now as the parts are moved to locking position the finger 6 will contact with the beveled edge 3 of the keeper, thereby rotating the member 5 and causing the finger 7, through the action of its cam-face 10 upon the cam-face 17 of finger 16, to automatically raise the latter and permit the latching-finger 8 to move into the socket of the keeper. As soon as the finger 8 becomes properly seated in the socket the finger 7 will have moved to a position in rear of the finger 16, the rear face of which is mortised, as at 19, for the purpose. The member 5 having assumed this position, the member 13 will immediately drop by gravity to cause its finger 16 to lie in rear of finger 7, thereby preventing backward movement of the latch and maintaining the same in secure engagement with the keeper until released by manipulation of the sleeve 11 in the manner above explained. Particular attention is directed to the fact that in my improved construction the latch will move with ease and freedom into engagement with the keeper and will then be automatically and securely locked in its engaging position.

Arranged within the casing 1 beneath the locking member 13 is a sliding locking-bolt

20, designed for operation by a key, as usual. This bolt is maintained in either of its two positions by means of an engaging member 20′ in the form of a bar pivoted at its forward end to the bolt and provided at its rear end with a pair of sockets 21 22, either of which may receive a lug or stud 23, formed upon the adjacent wall of the casing, it being understood, of course, that when the lug enters the recess 21 the bolt will be locked in retracted position and in extended position when the lug enters recess 22. The engaging member, which is raised to releasing position by means of a suitable key, is adapted to move automatically to engaging position by gravity and is held in the latter position by means of the locking member 13, the extension or continuation 14 of which normally bears upon the upper edge of the member 20′.

From the foregoing it is apparent that I produce a simple inexpensive device which will efficiently perform its functions; but it is to be understood that I do not limit myself to the precise details herein set forth, inasmuch as minor changes may be made therein without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. In a device of the class described, a keeper, a rotary latch member having a plurality of fingers and wholly free for rotation in a direction for any one of the fingers to move into locking engagement with the keeper, said fingers having their forward faces relative to the direction of travel of the member beveled or inclined, and a movable locking member normally lying within the path of and designed for direct engagement with any one of the fingers to lock the latch against reverse rotation, said locking member being provided with a recess for the passage of the latch member, and with a finger, mortised on one side and having on the other side a beveled or inclined portion adapted to coincide with and be acted upon by the beveled faces of the fingers for automatically moving the locking member out of the path of the latter during the advance movement of the latch.

2. In a device of the class described, a socketed keeper, a rotary latch member having a plurality of fingers and wholly free for rotation in a direction for any one of the fingers to move into locking engagement with the socketed keeper, said fingers having their forward faces relative to the direction of travel of the latch beveled or inclined, and a pivoted locking member normally lying within the path of the fingers and designed to swing by gravity into direct engagement with any one of the fingers for locking the latch against reverse rotation, said locking member being provided with a recess for the passage of the latch member and with a finger, mortised on one side and having on the other side a beveled or inclined portion adapted to coincide with and be acted upon by the beveled face of any one of the fingers for automatically moving the locking member out of the path of the latter during the advance movement of the latch.

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

ANDREW J. CAMPBELL.

Witnesses:

J. H. JOCHUM, JR.,

J. ROSS COLHOUN.