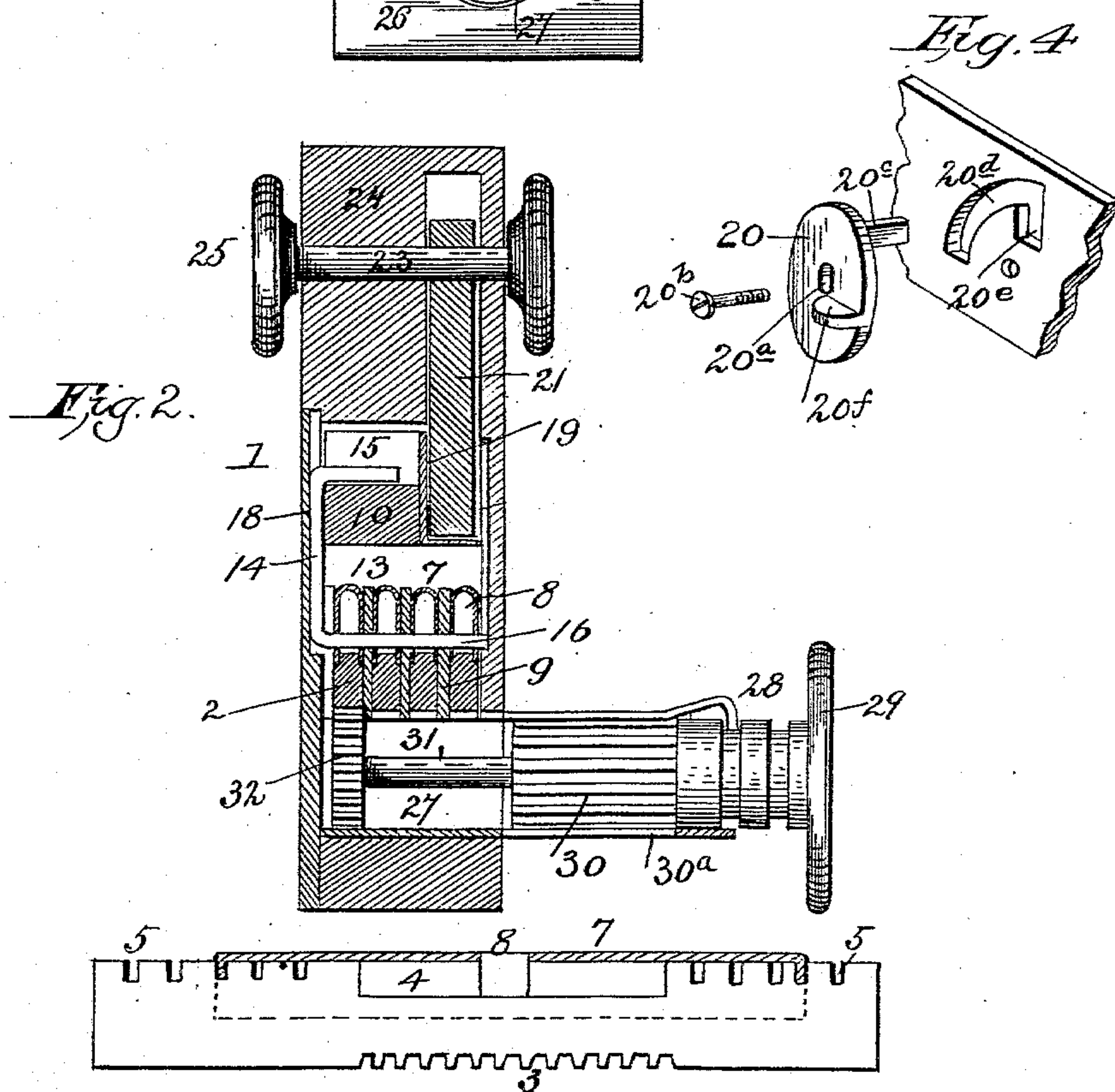
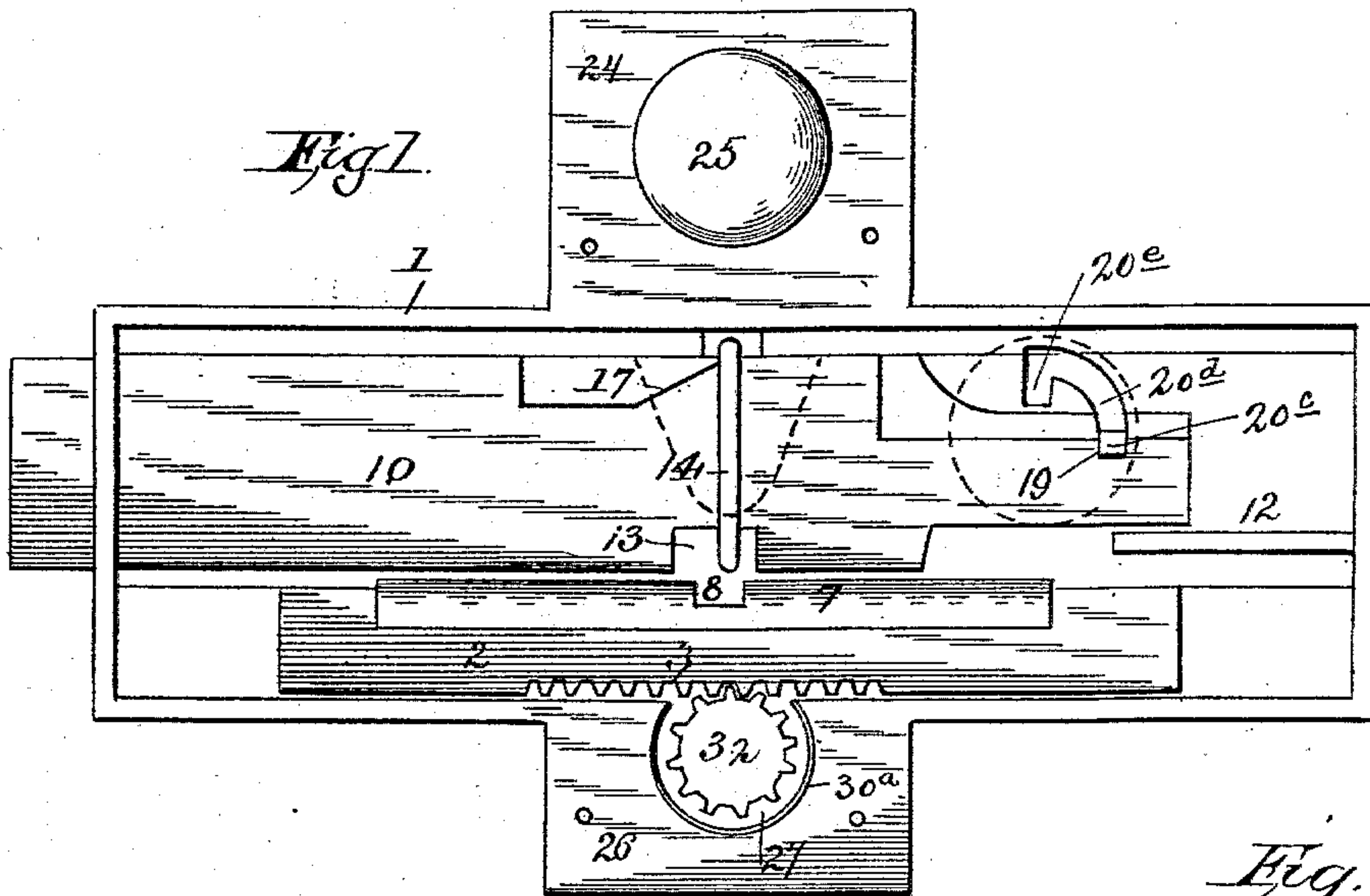


J. W. TATUM.  
LOCK.

Patented Dec. 10, 1895.



WITNESSES:  
F. L. Ouraud.  
H. Loombs

INVENTOR:  
James W. Tatum,  
By Saml. Puffer & Co.  
Attorneys



# UNITED STATES PATENT OFFICE.

JAMES WILLIAM TATUM, OF DURHAM, NORTH CAROLINA, ASSIGNOR OF  
ONE-HALF TO JOHN L. WATKINS, OF SAME PLACE.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 551,296, dated December 10, 1895.

Application filed May 20, 1895. Serial No. 549,978. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WILLIAM TATUM, a citizen of the United States, and a resident of Durham, in the county of Durham and State of North Carolina, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in combination-locks of that class in which reciprocating sliding tumblers are employed instead of the rotatable disks most generally used.

The object of the invention is to provide a novel lock of the above character, which shall be simple and economical in construction, and efficient in operation, and in which the movement of the tumblers to unlock the bolt is controlled by the touch instead of by sight, whereby the lock can be unlocked in the dark, as will be hereinafter described.

In the accompanying drawings, Figure 1 is a view of a combination-lock constructed in accordance with my invention, the back of the casing being removed to show the interior of the lock. Fig. 2 is a central vertical cross-section of the same, the back of the casing being in place. Fig. 3 is a view of one of the reciprocating tumblers, the plate for changing the combination removed. Fig. 4 is a detail perspective view of the turn-button.

In the said drawings, the reference-numeral 1 designates a rectangular casing in the lower part of which is located a number of sliding reciprocating tumblers 2, four being shown in the present instance. Each of these tumblers consists of a rectangular metal bar, resting and slidable on the bottom of the casing, and of a length somewhat less than the length of the casing. On the under side each tumbler is provided with a series of equidistant notches 3, (twelve being shown in the present instance, although more or less may be used, if desired.) On its upper edge the tumbler is cut away or recessed above the notches, as seen at 4, Fig. 3, and at each side is provided

with a series of equidistant slots 5, with which engage the turned-down ends of an adjustable plate 7, consisting of a strip of metal bent over upon itself, so that its edges will embrace the upper part of the tumbler. This plate is formed with a slot or opening 8 at its center, and can be moved or adjusted upon said tumbler, so as to vary the combination. These tumblers are placed side by side in the casing with spacing-plates 9 interposed between them. Located above said tumblers is a slidable bolt 10, one end of which projects through an opening in the side of the lock-casing, while the other end rests upon a support 12, secured to the casing. Upon its underside, near the center, this bolt is formed with a slot 13 to receive the lower arm of a gravity-dog 14, consisting of a metal bar having its ends bent at right angles forming lateral arms 15 and 16. Upon its upper side the bolt is formed with a beveled recess 17 to receive the arm 15 of said dog. The vertical portion of the dog is seated and works in a groove 18 in the back of the casing. Near its inner end and at the upper side the bolt is formed with a slot or notch 19. Pivoted to the lock-case is a turn-button 20, having an elongated slot 20<sup>a</sup>, through which passes the pivot-pin 20<sup>b</sup>. This button, on its inside, is provided with a pin 20<sup>c</sup>, which works in a curved slot 20<sup>d</sup> in the lock-case. The upper end of this slot is formed with a seat 20<sup>e</sup>, in which the pin rests when the button is not in use. The button on its outer face is provided with a finger-piece 20<sup>f</sup>. The object of this button is to lock the bolt from the inside and prevent it from being retracted, whether the combination is known or not. This is accomplished by raising the button so that the pin will be disengaged from its seat, and then by turning the button said pin will engage with the notch 19 in the bolt.

At the front side of the bolt is a lever 21, the upper end of which is secured to a shaft 23, journaled in a box 24 at the upper side of the casing. This lever works in a tapering recess (shown in dotted lines, Fig. 1) in the bolt. At each end this shaft is provided with an operating-knob 25, by turning which the bolt is shot and retracted.

At the lower side of the casing is a box 26



having a circular bore in which is located a cylindrical tube 27, which projects outwardly some distance beyond the front of the casing. Seated and rotatable in this tube is a cylindrical spindle 28, having a head 29, by which it can be rotated. This block is also slidable in the tube, and at its inner end is formed with a series of ribs 30, corresponding in number with the notches in the tumblers, and on its under side the sleeve is formed with a slot 30<sup>a</sup>, so that said ribs can be exposed to the touch. This spindle is provided with an inwardly-extending rod 31, having at its end a wheel 32, formed with a series of peripheral teeth corresponding in number with the notches in the tumblers with which they engage.

The operation is as follows: Supposing the combination is to be set at, say, "6345," then the rear plate 7 is adjusted so that the slot therein will be opposite the sixth notch in its tumbler. The slot in the adjustable plate of the next tumbler is then set at the third notch of said tumbler, and so on. The tumblers are now all pushed to one end of the casing, when the slots in the said plate will be out of alignment, and the dog 14 is elevated by the beveled recess 17 striking the upper arm thereof, which causes the arm 15 to engage with slot 13 and be held in this position by reason of said arm 15 resting upon the solid part of the adjustable plates.

To withdraw or retract the bolt, spindle 28 is rotated until the wheel 32 moves the rear-most tumbler six notches, when the slot or opening in the adjustable plate will be in alignment with the lower arm of the dog. In turning or rotating the said block one of the fingers is placed on the ribs through the opening or slot in the sleeve, and by counting the number of ribs as they pass beneath the fingers it can readily be ascertained when it is time to stop the rotation. The spindle is then pulled out, so that wheel 32 will engage with the notches of the next tumbler, when the operation will be repeated, and so on with all the tumblers, when the slots in the adjustable plates thereof will all be in alignment, so that the dog can drop down therein, releasing the

bolt so that it can be retracted by turning the shaft connected therewith.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a lock, the combination with the slidable tumblers provided with notches on the under side and cut away at the center on the upper side and formed with equidistant slots at each side of said cut away portion, and the slidable plates fitting on said tumblers having a central slot and the ends turned down and engaging with the slots in the tumblers, of the rotatable slidable spindle having a toothed wheel adapted to engage with the notches in the tumblers, substantially as described.

2. In a lock, the combination with the slidable tumblers having notches therein, of the rotatable slidable spindle having a series of ribs, the toothed wheel, and the sleeve in which said block is located having a slot therein, substantially as described.

3. In a lock, the combination with a casing, the bolt having a beveled recess, the knob, and the shaft or spindle, the lever secured thereto and engaging in a slot in the bolt, of the gravity-dog engaging with said beveled recess and working in a groove in the casing, the tumbler having notches on the under side and a slot on the upper side, the adjustable plates having slots fitting over said tumblers and the rotatable slidable spindle having a toothed wheel engaging with the notches in the tumblers, substantially as described.

4. In a lock, the combination of the casing having a curved slot therein with a recess at its upper end, the rotatable and vertically movable turn-button having an inwardly extending pin working in said slot and the bolt having a notch near its rear end, substantially as described.

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

JAMES WILLIAM TATUM.

Witnesses:

H. P. HACKNEY,  
F. H. HEARTT.