

No. 666,697.

Patented Jan. 29, 1901.

J. ROCHE.

MULTIPLE KEY LOCK.

(Application filed Aug. 17, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

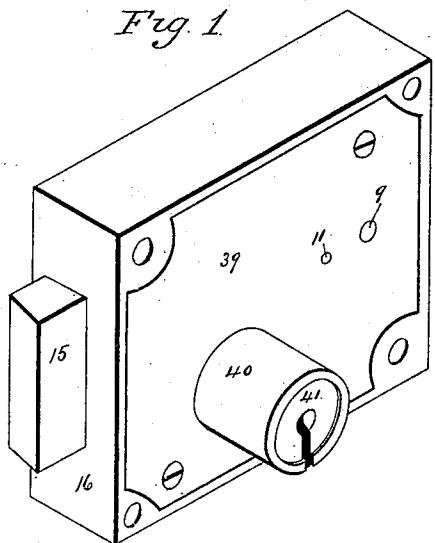


Fig. 2.

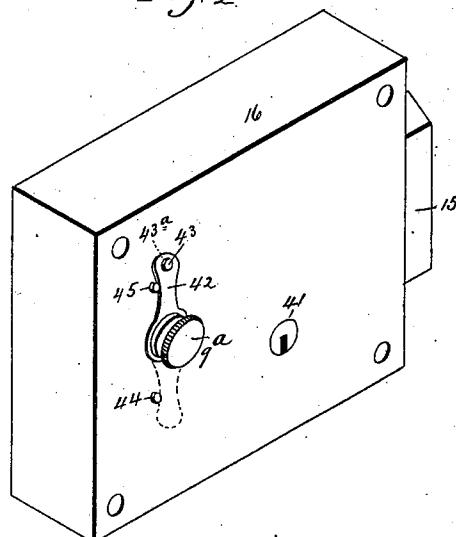


Fig. 3.

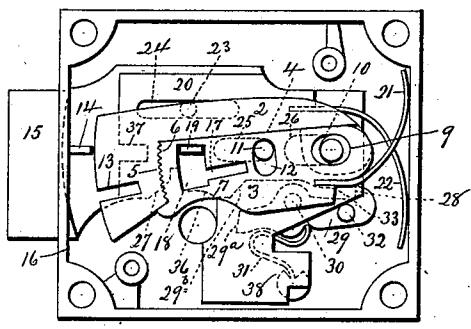


Fig. 4

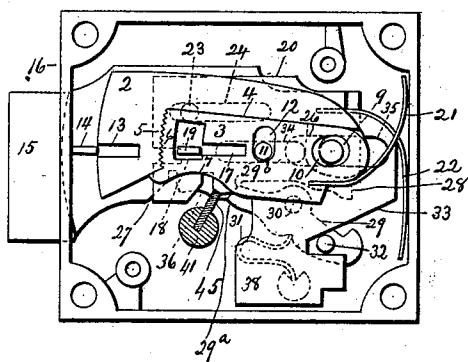


Fig. 5

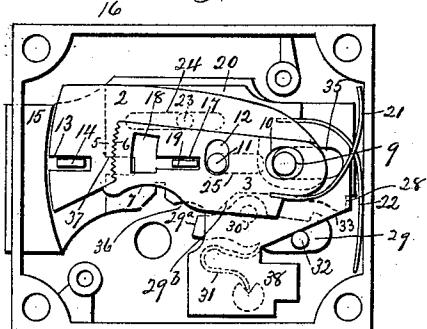
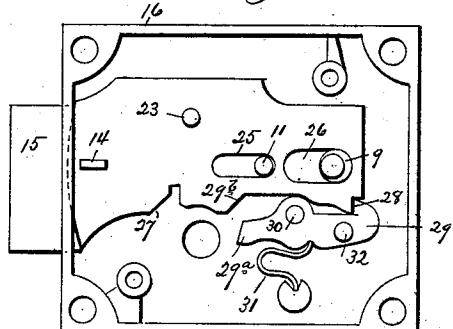


Fig. 6.



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2 Sheets—Sheet 2.

Fig. 7.

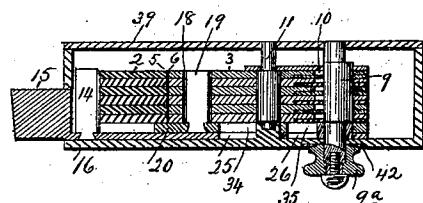


Fig. 8.

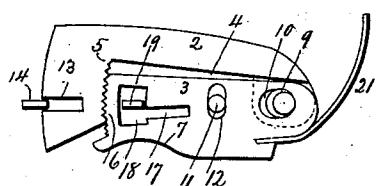


Fig. 9.

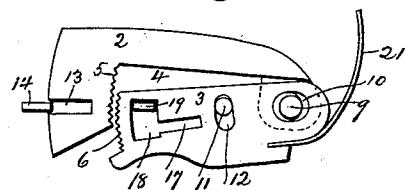


Fig. 10.

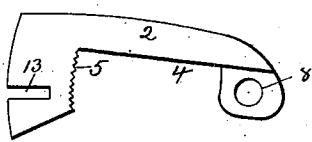


Fig. 11.

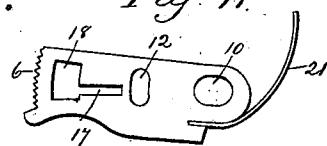


Fig. 12.

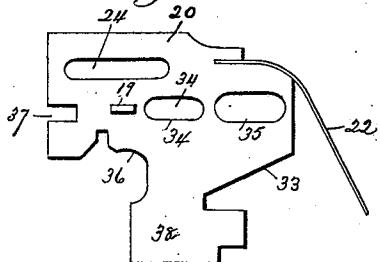


Fig. 13.

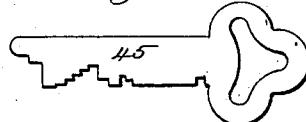


Fig. 14.

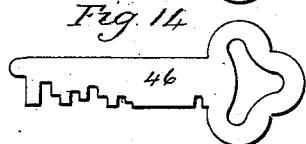
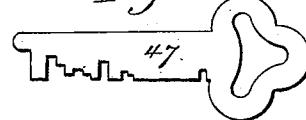


Fig. 15.



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UNITED STATES PATENT OFFICE.

JAMES ROCHE, OF TERRYVILLE, CONNECTICUT, ASSIGNOR TO THE EAGLE LOCK COMPANY, OF SAME PLACE.

MULTIPLE-KEY LOCK.

SPECIFICATION forming part of Letters Patent No. 666,697, dated January 29, 1901.

Application filed August 17, 1900. Serial No. 27,171. (No model.)

To all whom it may concern:

Be it known that I, JAMES ROCHE, of Terryville, in the county of Litchfield and State of Connecticut, have invented a new Improvement 5 in Multiple-Key Locks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the 10 same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of a lock constructed in accordance with my invention; Fig. 2, a reverse perspective view thereof; Fig. 3, a view of the lock with the cover removed, showing the parts in their locked positions; Fig. 4, a corresponding view showing the parts of the lock in the positions due to them after the guard-key has been operated 20 to throw down the pivotal dog and so unlock the main bolt at the heel thereof; Fig. 5, a corresponding view showing the parts of the lock in their unlocked positions; Fig. 6, a view of the lock with the cover removed, as well 25 as all of the contained parts except the bolt and pivotal dog; Fig. 7, a view of the lock in longitudinal section, taken centrally through the adjusting-eccentric; Fig. 8, a detached plan view of one of the two-part tumblers 30 with the supplemental part thereof in its locked position; Fig. 9, a corresponding view with the supplemental part in its unlocked position; Fig. 10, a detached plan view of the main part of one of the tumblers; Fig. 11, a 35 corresponding view of the supplemental part of one of the tumblers; Fig. 12, a detached plan view of the secondary bolt; Fig. 13, a view of the guard-key; Fig. 14, a view of a depositor's key; Fig. 15, a view of another 40 depositor's key to which the lock may be set.

My invention relates to an improvement in multiple-key locks, the object being to produce a simple, compact, and convenient lock adapted to be reset to a very considerable 45 range of different keys without removing it from place. My improved lock is particularly adapted to be used as a safe-deposit lock, but is not limited to such use.

With these ends in view my invention consists in a multiple-key lock having a two-part lever-tumbler comprising a main part and a

supplemental part and constructed to permit them to be set in a variety of positions with respect to each other.

My invention further consists in a multiple- 55 key lock having a plurality of two-part lever-tumblers, each of which is adapted to have its supplemental part adjusted with respect to its main part and an adjusting-eccentric coacting with all of the tumblers, whereby 60 they may be unlocked and reset and relocked in new relations to each other.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and 65 pointed out in the claims.

In carrying out my invention, as herein shown, I employ a plurality of two-part locking-lever tumblers, each consisting of a main part 2 and a supplemental part 3, the main 70 part of each tumbler being centrally cut away to form a deep large notch 4, in which the supplemental part 3 is mainly located. The forward wall of the said notch 4 is formed with serrations 5, which are engaged with and 75 interlocked by corresponding serrations 6, formed upon the outer end of the supplemental part 3, which is provided with a key-sweep 7. The rear or inner end of the main part 2 of each tumbler is cut away and re- 80duced to half the thickness of the rest of the part and formed with a circular hole 8, which receives the arbor-like adjusting-eccentric 9, which passes through all of the tumblers, and by means of which the two members of the 85 respective tumblers are moved with respect to each other and unlocked and then after readjustment again moved with respect to each other and locked and rigidly held in their locked positions, all without the removal of 90 the tumblers from the lock. The rear or inner end of each of the supplemental parts 3 of each tumbler is also reduced in thickness to about half of the thickness of the remaining portion of the part and formed with an 95 elongated clearance - opening 10, through which the said eccentric also passes, but which does not act upon the supplemental part on account of the elongated form of this opening. The supplemental parts 3 of all of 100 the tumblers are held against possible end-wise movement under the action of the ad-

justing-eccentric by means of a retaining-pin 11, which passes through a vertically-elongated slot 12, formed in the supplemental part of each of the tumblers. The main part 5 of each of the tumblers is formed with a stump-slot 13 for the reception of the stump 14, located near the outer end of the main bolt 15, which itself rests upon the bottom of the case 16 of the lock. The supplemental 10 part 3 of each tumbler is formed with a stump-slot 17, opening out of the rear wall of a transversely-arranged stump-opening 16, receiving a stump 19, carried by the secondary or auxiliary bolt 20. The supplemental part 3 of 15 each tumbler is provided with a tumbler-spring 21, while the secondary bolt 20 is furnished with a spring 22. The main bolt 15 is formed with a short guide-pin 23, Fig. 6, entering a guide-slot 24, formed in the secondary bolt, Fig. 12. The said main bolt is also formed with a clearance-slot 25 for the retaining-pin 11 and with a clearance-slot 26 for the adjusting-eccentric 9. It is also formed with a key-sweep 27 and with a locking-notch 28, formed in its heel for the reception of the nose of a pivotal dog 29, turning upon a pivot 30, located in the bottom of the case, and thrown into its locked position by a spring 31. This dog is thrown into its unlocked position by means of a pin 32, carried by it and arranged to be engaged by an operating-bevel 33, formed upon the secondary bolt 20, which is formed with a clearance-slot 34 for the pin 11, with a clearance-slot 35 for 30 the adjusting-eccentric 9, with a key-sweep 36, with a stump-notch 37 for the reception of the stump 14 of the main bolt 15, and with a foot or guide 38. I particularly wish to call attention to the fact that each tumbler 40 as a tumbler is separable between its main-bolt stump-slot and its key-sweep.

It will be understood that the main bolt 15 is slid back and forth directly upon the bottom of the lock-case 16 and that the secondary bolt 20 is adapted to slide back and forth directly upon the said main bolt, while the two-part locking-tumblers are superimposed one upon the other, the lower tumbler of the series resting upon the upper face of the secondary bolt, as shown in Fig. 7. The lock-case 16 is provided with the usual cover 39, which is furnished with a sleeve 40, inclosing a key-hub 41 of usual construction.

The adjusting-eccentric 9 extends through 55 the bottom of the lock-case and its projecting end is furnished with a knurled finger-button 9^a and a yielding stop-finger 42, carrying a locking-pin 43, which snaps into a shallow pocket 43^a, formed to receive it in the lock-case. Two stop-pins 44 and 45, mounted in the case, provide against turning the adjusting-eccentric 9 too far in either direction, the finger 42 being brought up against the said pins 44 and 45 at the limit of the turning 60 movement of the eccentric.

In using the lock the guard-key 45 is inserted into the lock and engaged with the

key-sweeps 7 of the supplemental parts 3 of all of the locking-tumblers, with the effect of lifting the tumblers, so as to bring the stump-slots 17 of the supplemental parts 3 of all of the tumblers into alignment with the stump 36 upon the secondary bolt 20, the key-sweep 19 of which is engaged and the tumbler moved from left to right, with the effect of bringing the bevel 33 into engagement with the pin 32 of the pivotal dog, which is forced downward against the tension of its spring 31 and away from the heel-notch 28 in the main bolt 15, the heel of which is now unlocked. At the 75 termination of the described action of the guard-key it will have the position in which it is shown in Fig. 4 of the drawings. The guard-key is now removed from the lock and the depositor's key 46 inserted thereinto, with 80 the effect of engaging the key-sweeps 7 of the supplemental parts 3 of all of the locking-tumblers, which are now lifted, so as to bring all of their stump-slots 13 into line with the stump 14 of the main bolt 15, which as the 85 key is turned is shot back into its unlocked position, at which time the stump 14 enters the stump-slots 13. As the main bolt 15 is shot back into its unlocked position the tail 29^a of the dog 29 is engaged by the bevel 29^b 90 of the bolt, whereby the dog is swung back again into position for automatic reengagement with the heel of the bolt when the same is shot back into its locked position during the removal of the depositor's key 46 from the 95 lock.

The above description illustrates the ordinary use of the lock. If now it is desired to set the lock to a new depositor's key, such as the key 47, the old depositor's key 46 is first 105 introduced into the lock and turned, so that the two-part tumblers will be lifted for bringing the stump-slots 13 into alignment with the bolt-stump 14, which is thereby permitted to just enter the stump-slots 13, further movement of the main bolt 15 being prevented by the blocking action of the locking-dog 29, which has not been thrown down out of engagement with the heel of the main bolt 15 by the secondary bolt 20 under the action of 110 the guard-key. While the old depositor's key is in this position, the knurled finger-button 9^a is grasped and the adjusting-eccentric 9 rotated until the stop-finger 42 is brought into the position shown by broken 115 lines, Fig. 2, in which it is stopped by the stop-pin 44. This rotation of the adjusting-eccentric will cause the temporary unlocking of the main and supplemental parts of each tumbler, as shown in Fig. 9, their serrations 120 5 and 6 being entirely separated from each other. The old key 46 is now removed and the new depositor's key 47 inserted into the lock and turned to lift the supplemental part 3 of all of the locking-tumblers to correspond 125 to the bittings of the key. This result having been effected, the knurled button 9^a is grasped and the adjusting-eccentric turned through a half-rotation or until its stop-fin- 130

ger 42 is engaged with the stop-pin 45, whereby the main and supplemental parts 2 and 3 of each tumbler will be firmly relocked again. The lock is now operated, as before, with the 5 guard-key and the key 47, the key 46 being now useless in connection with the lock.

It will thus be seen that a lock constructed in accordance with my invention may be very readily reset to a number of different keys 10 without any change in the intrinsic construction of the lock.

It is apparent that in carrying out my invention I may make some changes from the construction herein shown and described, and 15 I would therefore have it understood that I do not limit myself to such construction, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. I am aware, however, that a multiple-key lock having a two-part tumbler consisting of a lever and a wheel 20 geared together is old. I do not, therefore, broadly claim a multiple-key lock having a two-part tumbler. I am also aware that a 25 two-part tumbler the respective parts of which are adapted to be unlocked and moved in the arc of a circle independently of each other and then relocked to move together in the arc of a circle is old, and I do not claim 30 that construction broadly.

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

1. A two-part lever-tumbler for a multiple-key lock, the said tumbler consisting of a pivoted main part and a pivoted supplemental part, and the said parts being adapted to be rigidly locked together in different relations to each other.

2. A two-part lever-tumbler for a multiple-key lock, the said tumbler consisting of a pivoted main part and a pivoted supplemental part, and the said parts being adapted to be rigidly locked together in different relations to each other, the main part having a large notch, and the supplemental part entering the same.

3. A two-part lever-tumbler for a multiple-key lock, each part of the tumbler being pivoted and formed with serrations adapting them to be unlocked from each other and relocked to each other in a variety of different relations for coaction with keys of different bittings.

4. A two-part lever-tumbler for a multiple-key lock, the said tumbler comprising a piv-

oted main part formed with a stump-slot and a pivoted supplemental part formed with a stump-slot, and the two parts being adapted to be rigidly locked together in different relations for coaction with keys of different bittings.

5. A two-part lever-tumbler for a multiple-key lock, comprising a pivoted main part having a bolt-stump slot, and a pivoted supplemental part having a key-sweep, whereby the two parts of the tumbler are separable between the said slot and key-sweep.

6. In a multiple-key lock, the combination with a plurality of two-part tumblers, the parts of which are pivoted and adapted to be locked together in a variety of different relations for coaction with keys of different bittings, and means coacting with all of the two-part tumblers for simultaneously moving one part of each tumbler with respect to the other part thereof, so as to unlock the two parts of each tumbler, and then restoring the parts of each tumbler to their locked positions after one part of each tumbler has been set to a key.

7. In a multiple-key lock, the combination with a plurality of two-part tumblers, the parts of which are separable, and capable of being reset and relocked in different relations for coaction with keys of different bittings, of an adjusting-eccentric passing through all of the tumblers for simultaneously separating their parts to permit them to be reset and simultaneously restoring their parts to locked positions, and means located upon the outside of the lock and connected with the said eccentric for operating the same, as required.

8. In a multiple-key lock, the combination with the case thereof, of a main bolt, a pivotal dog coacting with the heel of the said main bolt, a secondary bolt coacting with the said pivotal dog for disengaging the same from the heel of the main bolt, a plurality of two-part tumblers, the parts of which are separable for being reset in new relations, and means applied to all of the said two-part tumblers for simultaneously separating and simultaneously reuniting the respective parts of the tumblers, for coaction with keys of different bittings.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES ROCHE.

Witnesses:

R. J. PLUMB,
OTIS B. HOUGH.