C. F. RAYMOND.

LOCK.

APPLICATION FILED MAY 3, 1916.

1,233,806. Patented July 17, 1917.

Fig. 1.

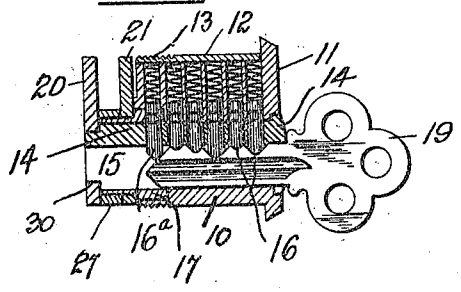


Fig. 2.

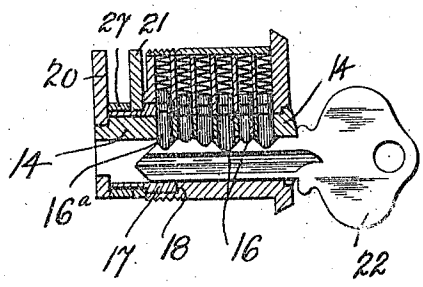


Fig. 3.

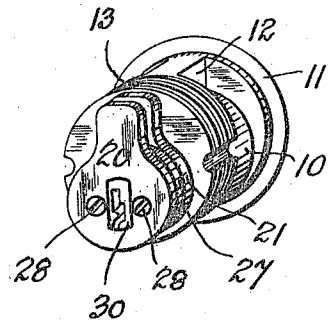


Fig. 4.

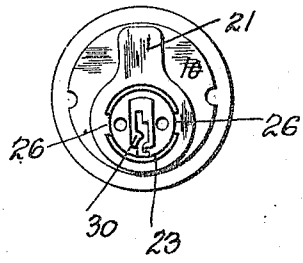


Fig. 5.

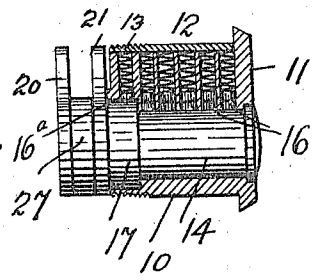
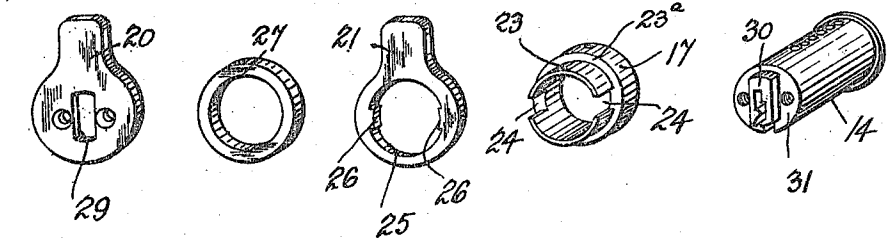


Fig. 6.



WITNESS

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LOCK.

1,233,806. Specification of Letters Patent. Patented July 17, 1917.

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To all whom it may concern:

Be it known that I, CHARLES F. RAYMOND, a citizen of the United States, residing in the city and county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

This invention relates to locks, and more particularly to cylinder locks of the master keyed type.

The primary object of the invention is to provide a very simple, inexpensive cylinder lock construction whereby two rollbacks mounted to rotate in parallel planes at the rear of the cylinder may be actuated by a certain key called the emergency key, whereas only one of said rollbacks can be actuated by the change key.

To these and other ends, the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing,

Figure 1 is a longitudinal section of a cylinder lock embodying my improvements, showing the change key inserted into the cylinder;

Fig. 2 is a similar view, showing the emergency key inserted into the cylinder;

Fig. 3 is a rear perspective view of the cylinder;

Fig. 4 is a rear elevation of the cylinder with the primary rollback and spacing washer detached;

Fig. 5 is a longitudinal section through the cylinder, showing the sleeve, rollbacks and spacing washer in elevation; and

Fig. 6 is a detail view of certain parts, as hereinafter described.

I have shown the cylinder casing 10 as of the usual construction having a face plate or escutcheon 11, a pin tumbler housing 12, and a threaded rear portion 13. The key plug 14 having the keyway 15 is rotatable in a bore through the cylinder and is somewhat longer than the cylinder so that it projects out of the latter at the rear end. The key plug 14 is adapted to be locked to the casing 10 by the usual sectional pin tumblers 16. Surrounding the rear portion of the key plug is a concentric sleeve 17, which fits within a recess 18 formed in the rear part of the cylinder concentric with the key plug recess. This sleeve 17 is adapted to cooperate with the rearmost pin tumbler 16^a which, under normal conditions, is so positioned by its actuating spring as to lock the sleeve 17 to the casing, while offering no resistance to the rotation of the key plug in the sleeve. In the particular form shown, there are six pin tumblers in all, the sleeve 17 coöperating with the rearmost pin tumbler only, and the arrangement is such that under normal condition, with no key inserted into the lock, the five front pins will lock the key plug to the casing, whereas the rear pin tumbler 16^a will only lock the sleeve to the casing. When a change key 19 is inserted into the cylinder, as shown in Fig. 1, this actuates the five pins 16 so as to release the key plug for rotation. The change key 19 has no effect upon the pin tumbler 16^a because it is not long enough to reach and displace said pin tumbler. Consequently, the change key will rotate the key plug and with it a rollback 20 secured to the rear end of the key plug, whereas the sleeve will remain stationary, and a rollback 21 carried by the sleeve will also remain stationary. On the other hand, when the emergency key 22 in inserted into the lock, as shown in Fig. 2, it will not only release the five pin tumblers 16, but it will also actuate the pin tumbler 16^a to lock the sleeve to the key plug and release it from the casing. This is due to the fact that the emergency key 22 is longer than the change key 19, and is bitted to shift the pin tumbler 16^a into the position shown in Fig. 2. It will be understood, therefore, that the emergency key will rotate the rollbacks 20, 21, together in parallel planes.

The sleeve 17 is preferably of the form shown in Fig. 6, being constituted by a ring having a rabbet cut in the rear part thereof, so as to present a thin rearwardly extending flange 23 which is cut away at diametrically opposite points, as shown at 24. The emergency rollback 21 is provided with an opening 25 adapted to tightly fit around the flange portion 23 of the sleeve against a shoulder 23^a. The rollback 21 is non-rotatively interlocked with the sleeve by means of small lugs 26 on the rollback extending into the opening 25, and adapted to engage the cut-away portions or recesses 24 of the sleeve, as shown more particularly in Figs. 4 and 6. After the emergency rollback has been fitted over the sleeve as shown in Fig.

4, a spacing washer 27 is fitted over the flange portion 23, and the primary or regular rollback 20 is then secured to the rear end of the key plug by screws 28. The rollback 20 has an opening 29 adapted to fit closely over a short integral extension 30 on the rear end of the key plug 14, and when the rollback 20 has been placed over this extension, it will abut the rear face of the key plug at 31, and it will also abut the rear face of the washer 27 and the rear face of the flange 23, which are flush with the surface 31 of the key plug. It will be understood, therefore, that when the rollback 20 is screwed in place by the screws 28, the emergency rollback 21 will be clamped in place against the shoulder 23^a of the sleeve, and held against rearward displacement by the spacing washer 27 and the primary rollback.

It will be observed that the sleeve 17 is concentric with the key plug, and that it is accommodated in a shallow recess in the rear part of the cylinder, while a portion of said sleeve extends outside of the cylinder proper to support the emergency rollback in the manner stated. The construction is very simple and inexpensive, and has given very good results in actual practice.

Without limiting myself to the precise construction shown, I claim:

1. In a cylinder lock, the combination of a casing, a key plug rotatable therein, pin tumblers coöperating with the key plug and casing, a rollback fixed to the rear extremity of the key plug, a short sleeve rotatable in a shallow recess at the rear end of the cylinder around said key plug and carrying a rollback in front of said first rollback, and a pin tumbler coöperating with said casing, sleeve and key plug; substantially as described.

2. In a cylinder lock, the combination of a casing, a key plug rotatable therein, pin tumblers coöperating with the key plug and casing, a rollback fixed to the rear extremity of the key plug, a short sleeve rotatable in a shallow recess at the rear end of the cylinder around said key plug and carrying a rollback in front of said first rollback, and a pin tumbler coöperating with said casing, sleeve and key plug, said sleeve concentric with said key plug; substantially as described.

3. In a cylinder lock the combination of a casing, a key plug, a sleeve around the key plug in the rear part of the casing, a plurality of pin tumblers for locking the key plug to the casing, a single pin tumbler coöperating with the sleeve, key plug and casing, rollbacks carried by the sleeve and key plug respectively, a key for rotating the key plug individually, and a key for rotating the key plug and sleeve together; substantially as described.

4. In a cylinder lock, a casing, a key plug rotatable therein, a short sleeve around the key plug in the rear part of the casing, a rollback carried by the rear extremity of the key plug, a rollback carried by said sleeve, a pin tumbler coöperating with the key plug, sleeve and casing, a second pin tumbler coöperating with the key plug and casing, a key to operate both of said pin tumblers, and a key to operate the second pin tumbler without operating the first; substantially as described.

5. In a cylinder lock, a casing, a key plug rotatable therein, a short sleeve around the key plug in the rear part of the casing, a rollback carried by the rear extremity of the key plug, a rollback carried by said sleeve, a pin tumbler coöperating with the key plug, sleeve and casing, a second pin tumbler coöperating with the key plug and casing, a key to operate both of said pin tumblers, and a key to operate the second pin tumbler without operating the first, said first pin tumbler normally locking the sleeve to the casing without interfering with the rotation of the key plug in the sleeve; substantially as described.

6. In a cylinder lock, a casing, a key plug rotatable therein, a short sleeve around the key plug in the rear part of the casing, a rollback carried by the rear extremity of the key plug, a rollback carried by said sleeve, a pin tumbler coöperating with the key plug, sleeve and casing, a second pin tumbler coöperating with the key plug and casing, a key to operate both of said pin tumblers, and a key to operate the second pin tumbler without operating the first, said first pin tumbler normally locking the sleeve to the casing without interfering with the rotation of the key plug in the sleeve, said first key constructed to actuate said first pin tumbler to release the sleeve from the casing and lock it to the key plug; substantially as described.

7. In a cylinder lock, a casing, a key plug rotatable therein, a sleeve surrounding the key plug at the rear part thereof, rollbacks carried by the key plug and sleeve respectively, the rollback on said key plug being at the rear of that on said sleeve, a pin tumbler coöperating with the casing, sleeve and key plug, a second pin tumbler coöperating with the casing and key plug, a key to operate said second pin tumbler but insufficiently long to operate said first pin tumbler, and a long key to actuate both pin tumblers; substantially as described.

8. In a cylinder lock, the combination of a casing, a key plug rotatable in the casing, and extending out of the rear end of the same, said casing having a shallow recess in the rear part thereof around said key plug, a sleeve in said recess, a rollback fixed to the rear end of the key plug, a second rollback

fixed to the sleeve in front of said rollback, and spaced therefrom, a single pin tumbler coöperating with the casing, key plug and sleeve, and a plurality of pin tumblers coöperating with the casing and key plug; substantially as described.

9. In a cylinder lock, the combination of a casing, a key plug rotatable in the casing and extending out of the rear end of the same, said casing having a shallow recess in the rear part thereof around said key plug, a sleeve in said recess, a rollback fixed to the rear end of the key plug, a second rollback fixed to the sleeve in front of said rollback and spaced therefrom, a single pin tumbler coöperating with the casing, key plug and sleeve, a plurality of pin tumblers coöperating with the casing and key plug, a key for actuating all of said pin tumblers, and a second key for actuating said plurality of pin tumblers but inoperative on said first pin tumbler; substantially as described.

10. In a cylinder lock, a casing, a key plug rotatable therein, a sleeve surrounding the key plug, a pin tumbler coöperating with the casing, key plug and sleeve, a pin tumbler coöperating with the casing and key plug, said sleeve projecting out of the rear end of the casing, a rollback fitting over said sleeve, a rollback fixed to the rear end of the key plug, and a washer interposed between said rollbacks; substantially as described.

In witness whereof, I have hereunto set my hand on the 25th day of April, 1916.

CHARLES F. RAYMOND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."