

1,233,733.

H. G. VOIGHT,
LOCK.

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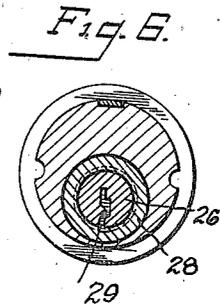
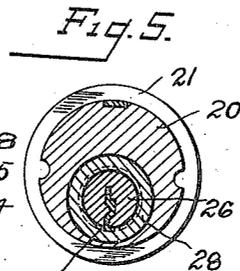
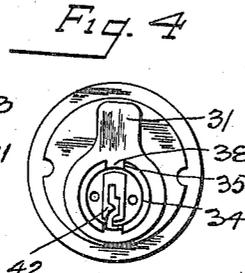
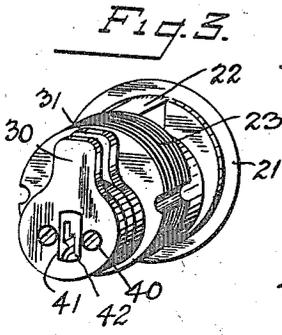
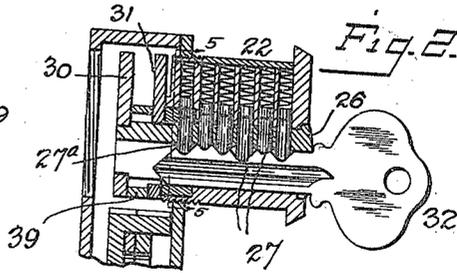
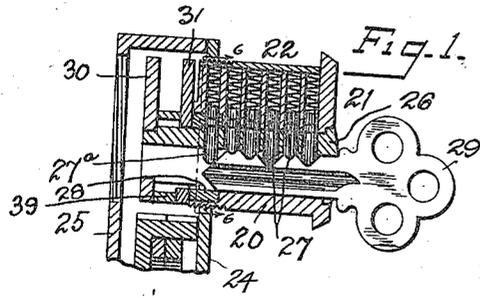


Fig. 7.

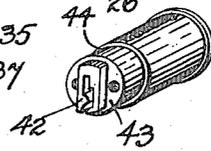
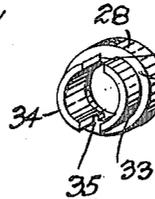
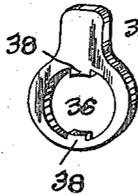
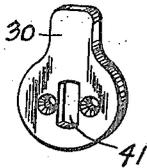
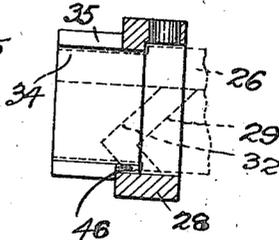
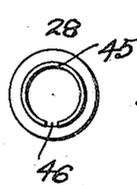
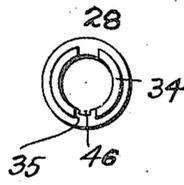
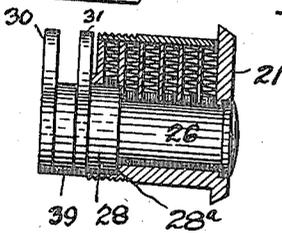


Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.



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LOCK.

1,233,733.

Specification of Letters Patent.

Patented July 17, 1917.

Original application filed May 4, 1916, Serial No. 95,376. Divided and this application filed March 19, 1917. Serial No. 155,777.

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing in New Britain, county of Hartford, 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 master-keyed cylinder locks of the type disclosed in my application, Serial No. 95376, filed May 4, 1916, of which the present application is a division.

One of the primary objects of the present invention is to provide a very simple, effective type of cylinder for hotel locks and the like in which one cam or rollback is turned individually by one key, *e. g.* the change key, whereas two, cams or rollbacks are rotated simultaneously when another key, *e. g.* the maid's key, is inserted into the lock and turned.

Another object of the invention is to furnish a cylinder lock of the type in which the key plug is surrounded by a separate sleeve and both the key plug and sleeve are controlled by suitable pin tumblers, wherein the arrangement is such that these pin tumblers are subjected to minimum strain and wear. This strain and wear is not appreciably greater when any one key is used than it is when the other keys of the series are employed.

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 it applied to the mortise lock with the change key inserted,

Fig. 2 is a view similar to Fig. 1, showing a master key, *e. g.* the emergency key inserted into the lock,

Fig. 3 is a perspective view of the cylinder detached,

Fig. 4 is a rear view of the cylinder with the primary rollback detached,

Figs. 5 and 6 are sections on lines 5-5, Fig. 2, and 6-6, Fig. 1, respectively,

Fig. 7 includes detail perspective views of certain of the lock parts,

Fig. 8 is a longitudinal section of the cas-

ing with the key plug and sleeve in elevation,

Figs. 9 and 10 are details of the sleeve, and

Fig. 11 is an enlarged longitudinal section through the sleeve.

Referring to the drawings, the cylinder casing 20 is of the usual construction, having the face plate or escutcheon 21, a pin tumbler housing 22, and the usual threaded rear portion 23, engaging a threaded hole in the wall 24 of the lock case 25. The key plug 26 having the usual keyway 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. This key plug 26 is adapted to be locked to the casing 20 by the usual sectional pin tumblers 27. Surrounding the rear portion of the key plug is a concentric sleeve 28, which fits within a comparatively shallow recess 28^a in the rear part of the cylinder concentric with the key plug recess. This sleeve 28 is adapted to cooperate with the rearmost pin tumbler 27^a which under normal conditions is so positioned by its actuating spring as to lock the sleeve 28 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 28 cooperating with the rearmost pin tumbler only, and the arrangement being such that under normal conditions with no key inserted the five front pins will lock the key plug to the casing, whereas the rear pin 27^a will only lock the sleeve to the casing. When the change key 29 is inserted into the cylinder as shown in Fig. 1 this actuates the five pins 27 so as to release the key plug for rotation, but the change key has no effect upon the pin 27^a because it is not long enough to reach and displace said pin. Consequently the change key will rotate the key plug and with it a rollback 30 secured to the rear end of the key plug, whereas the sleeve 28 will remain stationary and a rollback 31 carried by the sleeve will also remain stationary. On the other hand when the emergency key 32 is inserted as shown in Fig. 2 it will not only release the five pin tumblers 27, but it will also actuate the pin tumbler 27^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 32 is

somewhat longer than the change key 29 and is bitted to shift the pin tumbler 27^a into the position shown in Fig. 2.

It will be understood, therefore, that the emergency key will rotate the rollbacks 30, 31 together in parallel planes. The rollback 30, which may be referred to as the primary rollback, is located in the plane of the primary tumbler or other member of the mortise lock mechanism, and the rollback 31, which may be referred to as the emergency, auxiliary or secondary rollback, is located in the plane of the secondary tumbler or other member of the mortise lock.

Referring now to the detail construction of the cylinder it will be observed that the sleeve 28 is in the form of a ring having a rabbet 33 cut in the rear part thereof so as to present a thin rearwardly extending flange 34 which is cut away at diametrically opposite points, as shown at 35. The emergency rollback 31 is provided with an opening 36, adapted to tightly fit the flange portion 34 of the sleeve so that the rollback rests against a shoulder 37. The rollback is interlocked with the sleeve by means of small lugs 38 on the rollback extending into the opening 36, and engaging the recesses 35 of the sleeve as shown more particularly in Fig. 4. After the emergency rollback has been fitted over the sleeve a spacing washer 39 is fitted over the flange portion 34, and the primary rollback 30 is then secured to the rear end of the key plug by screws 40. The rollback 30 has an opening 41 adapted to fit closely over a short integral extension 42 on the rear end of the key plug, and when the rollback 30 has been placed over this extension it will abut the rear face of the key plug at 43, and it will also abut the rear face of the washer 39 and the rear face of the flange which is flush with the surface 43 of the key plug.

It will be observed that the sleeve 28 is adapted to rotate on a reduced portion 44 at the rear end of the key plug, and that the sleeve is provided with a rabbet 45 at the front inner part as shown in Fig. 10. At the lower part of the sleeve a groove 46 is cut from the rabbet 45 to the lower recess 35 so as to extend lengthwise of the sleeve at its lower part and this groove 46 is adapted to be positively engaged by the inner extremity of the emergency key bit when the latter is inserted into the cylinder lock as shown more particularly in Fig. 11. In this manner the sleeve is directly locked to the emergency key and it is positively moved thereby, which is a feature of considerable advantage inasmuch as the strain on the pin tumbler 27^a is very much de-

creased. It is not necessary for the sleeve to be carried from the key plug by the pin 27^a because the key carries the sleeve and in this manner the pin tumbler 27^a is relieved of strain and wear, and the life of the lock is considerably increased.

It will be noted that the spring for the rearmost pin tumbler 27^a returns the same immediately to the normal position when the long key is withdrawn from the lock, in which normal position said pin tumbler locks the sleeve to the casing, but releases the key plug from the sleeve. Hence, the short key is operable on the key plug rollback in the usual manner when it is inserted after the withdrawal of the long key.

What I claim is,

1. In a cylinder lock, the combination of a casing, a key plug, a pin tumbler cooperating with the key plug and casing, a rollback on the key plug, a short sleeve rotatable in a shallow recess in the casing around said key plug, a rollback on said sleeve, a pin tumbler cooperating with the casing, sleeve and key plug, said sleeve having a key engaging recess in line with the key way, a long key for actuating both of said pin tumblers and engaging said recess to thereby rotate both rollbacks together, and a short key for rotating the key plug rollback independently, said short key clearing said groove and being operable on said key plug rollback on the withdrawal of the long key from the key way.

2. In a cylinder lock, the combination of a casing having a bore and a shallow recess or enlargement at the rear end of said bore, a key plug in said bore, a sleeve embracing the key plug within said shallow recess, a group of pin tumblers for locking the key plug to the casing, a single pin tumbler cooperating with the sleeve, key plug and casing and normally in a position to lock the sleeve to the casing but to release the key plug from the sleeve, rollbacks carried by the key plug and sleeve respectively, a key for actuating said group of pin tumblers and rotating the key plug rollback independently, a second and longer key for actuating all of said pin tumblers to rotate both rollbacks, said sleeve having a groove therein which is engaged by said second key but clears the first key, and means for returning said single pin tumbler to its aforesaid normal position when said longer key is withdrawn from the lock so that the first key is again operative, as specified.

In witness whereof, I have hereunto set my hand on the 16th day of March, 1917.

HENRY G. VOIGHT.