

(Model.)

C. M. STINER.
LOCK.

No. 484,759.

Patented Oct. 18, 1892.

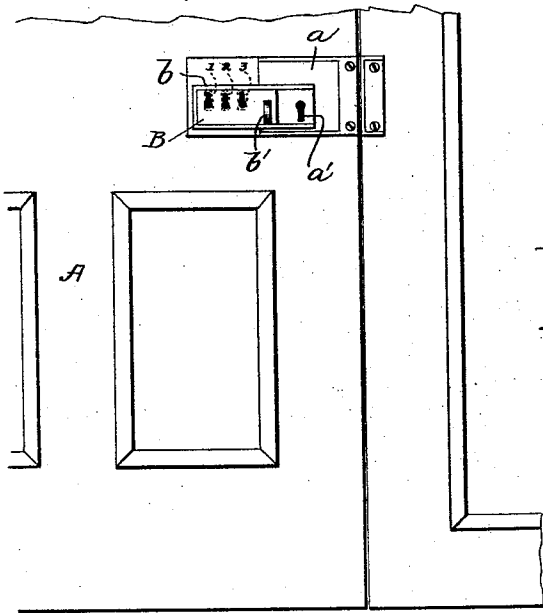


Fig. 1.

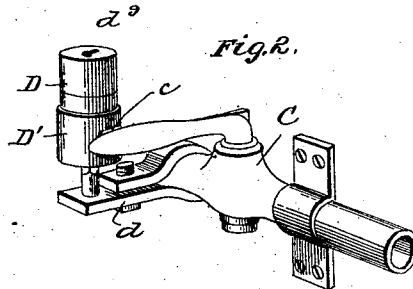


Fig. 2.

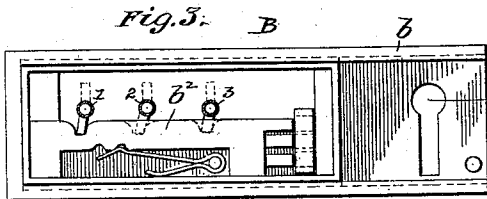


Fig. 3.

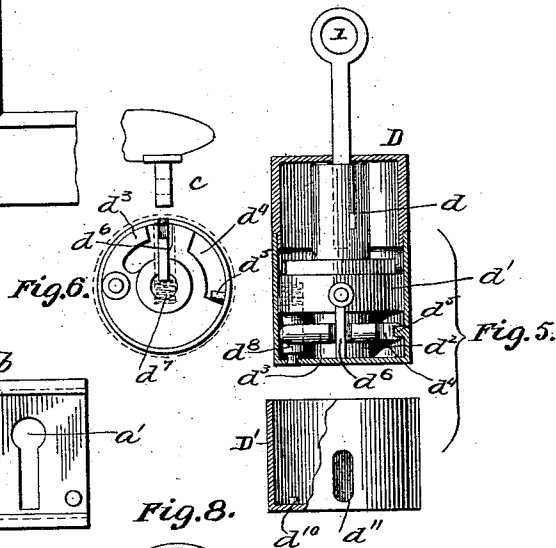


Fig. 4.

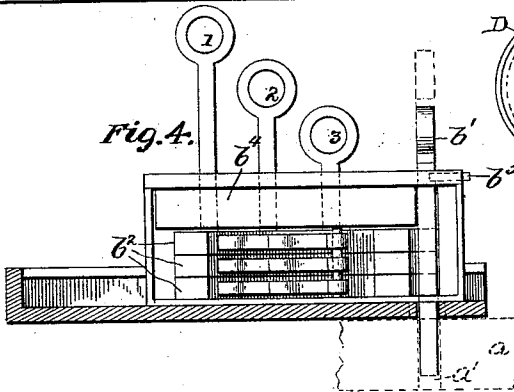


Fig. 5.

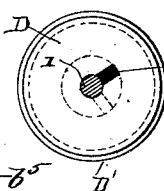


Fig. 6.

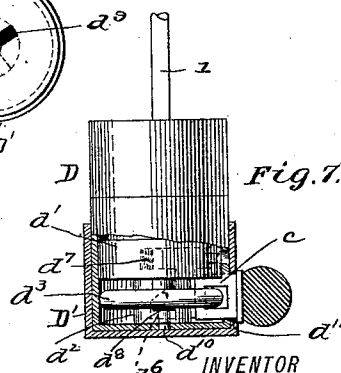
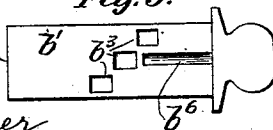


Fig. 7.

WITNESSES:

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Fig. 9.



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LOCK.

SPECIFICATION forming part of Letters Patent No. 484,759, dated October 18, 1892.

Application filed April 30, 1891. Serial No. 391,085. (Model.)

To all whom it may concern:

Be it known that I, CLARENCE M. STINER, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to mechanism for enforcing the performance of a certain duty; and it consists of a combination of locks and keys arranged and constructed in a special manner, whereby the movement or operation of a certain lock is dependent upon the prior operation of one or more other locks.

Referring to the accompanying drawings, Figure 1 represents a portion of a door and its lock fitted with a portion of the devices constituting my invention. Fig. 2 represents a faucet and its lock controlling a supply of water, gas, or other material. Fig. 3 represents a plan of the attachment to the lock on the door, the front of the casing being removed. Fig. 4 represents a side elevation of the same, with the side of the casing removed, parts being shown in section. Fig. 5 represents the lock and lock-holder used in connection with the faucet shown in Fig. 2. Fig. 6 is a bottom plan of the lock shown in Fig. 5. Fig. 7 is a side elevation, with parts broken away, of the lock shown in Fig. 5, the same being turned at an angle of ninety degrees from the position shown in Fig. 5. Fig. 8 is a plan of the lock shown in Fig. 7. Fig. 9 is a view of a stop used in the lock illustrated in Fig. 3.

Referring to the drawings by letters and figures, A represents the front door or main entrance of a building, *a* the lock on said door, the keyhole of which is represented by *a'*.

B represents a lock, which is mounted upon a guideway *b*, permanently attached to the back of the lock *a*. The lock B is adapted to slide from end to end of the guideway *b*.

C represents a faucet controlling, say, the supply of water to the building of which A is the main entrance. The handle of this faucet is provided with a loop *c* for a purpose which will be hereinafter described.

D represents another lock adapted to fit into and removable from a lock-holder D'. The latter is permanently supported upon a

bracket *d*, secured in any suitable manner to or adjacent to the faucet C.

The lock B is provided with a stop *b'*, which when the same is free and is properly adjusted may be thrust into the keyhole *a'* of the lock *a*, and thus prevent the insertion of the key which operates the said lock *a*.

As shown in the drawings, the lock B is constructed to be operated by three keys 1, 2, and 3, fitting the respective keyholes shown in lock B. Each key throws a bolt *b²* into its opening *b³* in the stop *b'*, and thus prevents its movement. The position of the openings *b³* is such that the bolts can enter them only when the stop is pushed through an opening in the bottom of the lock B and into the keyhole *a'* of the lock *a*, and it is obvious that the stop prevents a movement of any of the bolts when it is withdrawn from the keyhole *a'*.

Each key 1 2 3 is provided with a single dog which enters a notch in its bolt *b²* for the purpose of moving it longitudinally. When a key has thrown its bolt, it may be removed from the lock by continuing its rotary motion until its dog registers with the keyhole and then withdrawing it.

b⁴ represents a bar-detent attached to the cover of the lock, which projects inward in the plane of the bolts *b²*.

In Fig. 3 the bolts are shown in the withdrawn position, the stop *b'* pulled out, so that it bars the forward movement of the bolts. In order now to free the bolts, the lock B must be moved along the guideway until the stop *b'* registers with the keyhole *a'* and the stop pushed into the said keyhole as far as it will go, when the holes *b³* will be presented, respectively, to the bolts *b²*. The bolts may now be thrown into the holes *b³*, thus locking the stop *b'* and preventing the insertion of a key in the keyhole *a'*. The keys 1 2 3 may then be removed entirely from the lock B by continuing their rotary motion until the dogs upon them register with the keyholes, when they may be withdrawn. Before the bolts *b²* are thrown the keys 1 2 3 cannot be removed, because the bar-detent *b⁴* stands in front of the dogs on the keys. The operation of throwing the bolt carries the dog out of the plane of the bar. Pin *b⁵* projects into slot *b⁶*

in the stop to prevent the same from being entirely withdrawn from the case.

The lock D consists of a cylindrical shell having within it a rotatable body $d\ d'\ d^2$, provided near its lower end with an arc-shaped bolt d^3 , and also being cut away at d^4 to form shoulders against which a pin d^5 , connected with the shell, may abut to limit the rotary movement of the part $d\ d'\ d^2$. Just in front of the bolt d^3 is a sliding plate d^6 . (Shown in dotted lines in Fig. 7.) The upper part of this plate has a cylindrical plug or bolt upon it which is adapted to project at one end into a recess in the shell of the lock and at the other end rests against a spiral spring d^7 . This plate and spring occupies a radial slot or chamber of suitable shape, formed in the rotating body $d\ d'\ d^2$. The spring tends to force the plate outward.

d^8 represents another bolt arranged parallel to the axis of the rotating body and located in a suitable chamber formed therein. It also is adapted to be forced into a recess or perforation in the end of the shell, as shown in Fig. 5, by a spiral spring. The function of these two bolts is to prevent the rotating body from turning with respect to the shell containing it. The upper portion d of the rotating body is provided with a chamber adapted to receive one of the keys 1 2 3, which is inserted in the keyhole d^9 .

D' represents a lock-holder adapted to receive and hold the lock D. It is provided in its bottom with a pin d^{10} , and in its side with an opening d^{11} , which when the lock is inserted in the holder register, respectively, with the bolt d^8 and the plate d^6 . The holder is supported on the bracket d in such a position that the loop c , connected with the faucet-handle, will pass into the opening d^{11} when the said handle is swung around.

The operation of the devices described is as follows: The object of these devices is to prevent the duly authorized person from locking the building at night without having first turned off the water, gas, or other material used in the building, and thus to prevent possible waste due to the destruction of the conduits. When the janitor approaches the building in the morning to open it, the lock B with the keys in it is in the position shown in Fig. 1. The janitor may therefore insert the main key into the keyhole a' and open the door. It then becomes necessary to turn on the meter, gas, &c., in the building for consumption during the day, and in order to do this he must withdraw the keys 1 2 3 from the lock B and use them to unlock the several faucets C. To remove the keys 1 2 3 he must slide the lock B over and push the stop b' into the keyhole a' . He then throws the bolts b^2 , thus locking the stop b' in the keyhole a' and continuing the rotary movement of the keys 1, 2, and 3 until the dogs on them register with the keyholes, withdraws them from the lock, and goes successively to the locked faucets in the building. He inserts the key in the key-

hole d^9 , turns the rotary body $d\ d'\ d^2$, which throws the bolt d^3 out of the loop c to permit him to swing the faucet-handle around to open the passage. When the loop c is withdrawn from the shell, the plate d^6 is permitted to move outward, causing its bolt to enter the recess in the side of the shell, and thus prevent the rotary movement of the body $d\ d'\ d^2$ in the shell. When the key was turned with the bolt d^3 , its dog was carried out of line with the keyhole d^9 . Consequently the key cannot now be removed from the lock D. The whole lock D, with the key, may be removed from the holder D' and put into a safe place until required again. This same act is performed at each of the other faucets, and although I have shown three keys, it is obvious that one or any other number may be used in the same manner. When closing-up time arrives, the front door cannot be locked, because, owing to the stop b' , its key cannot be inserted in the keyhole a' . To remove the stop b' , the keys 1 2 3 must be used; but they cannot be used until they are withdrawn from the locks D. In order to be able to turn a key in the lock D, so that it may be removed from the lock, the rotary body $d\ d'\ d^2$ must first be freed. To do this the lock D is inserted in the shell D' and forced to the bottom. The pin d^{10} will enter the perforation in the bottom of the lock D and force the bolt d^8 in until it does not bar the rotation of the body $d\ d'\ d^2$. Then the faucet-handle is swung around, closing the passage as the loop c enters the opening d^{11} , and presses the plate d^6 inward. This entirely frees the rotary body, and the key may now be turned to the position where it may be removed from the lock. In thus turning the key and the rotary body the bolt d^3 is passed through the loop c and locks the faucet-handle in its cut-off position. The key is then removed and carried to the lock B, where it is inserted in its proper place and used to throw one of the bolts b^2 out of the stop b' . Thus it will be seen that the bolt d^3 and the plate d^6 , carried by the lock, each forms a means for preventing operation of the lock when removed from the holder, and it will also be seen that means co-operating with the bolt and plate for permitting the lock to be operated by its key when said lock is placed in the holder exist in the pin d^{10} , which is carried by the holder, and the loop c of the faucet-handle, which also is practically carried by the holder, since it is supported in proper relation thereto. The other two keys or as many of them as there may be are secured and used in the same manner, thus withdrawing all the bolts b^2 from the stop b' , which may be then removed from the keyhole a' and the lock B moved back to permit of the use of the main key of the building on the lock a .

The function of the bolt d^8 is not readily obvious without explanation. Its purpose is to prevent the movement of the rotary body without first inserting the lock in the holder.

Without this bolt it would be possible to grasp the lock D in the hand and press the bolt d^6 inward either by inserting the loop c through its side or with another instrument. It is
5 obvious, however, that the bolt d^8 and the lock-holder D' may be entirely dispensed with and the lock D be permanently attached to the bracket, in which case the key would of course remain with the lock at the faucet during the
10 time that the building is open.

Having thus described my invention, I claim—

15 1. The combination of a lock and key and a second lock permanently attached to or adjacent to the first lock and bodily movable with relation thereto and a stop adapted to be locked or released by the second lock and bar the keyway of the first lock, substantially as described.

20 2. The combination of a lock and key and a second lock attached to or adjacent to the first lock, the second lock having a stop for barring the keyway of the first lock, a key for the second lock, and a detent for retaining the key in the lock when the bolt is in
25 one of its positions, substantially as described.

3. The combination, with a lock, of a guide-

way permanently attached to or adjacent thereto and a second lock connected with and adapted to slide in said guideway, the second
30 lock being provided with a bolt barring the keyway of the first lock, as set forth.

4. The combination of a lock and key and a second lock and key bodily movable with respect to the first lock, the said second lock
35 having a keyway and means for retaining a key therein and having, also, a stop to permit the operation of the other lock.

5. The combination, with a lock-holder and a lock fitted thereto and removable there-
40 from, of means carried by the lock for preventing its operation when removed from the holder and co-operating means carried by the holder and secured in fixed position relative thereto for permitting the lock to be op-
45 erated by its key when said lock is placed in the holder.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CLARENCE M. STINER.

Witnesses:

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FRANK S. OBER.