(No Model.)

S. STINER.

LOCK.

No. 565,702. Patented Aug. 11, 1896.

Fig. 1.

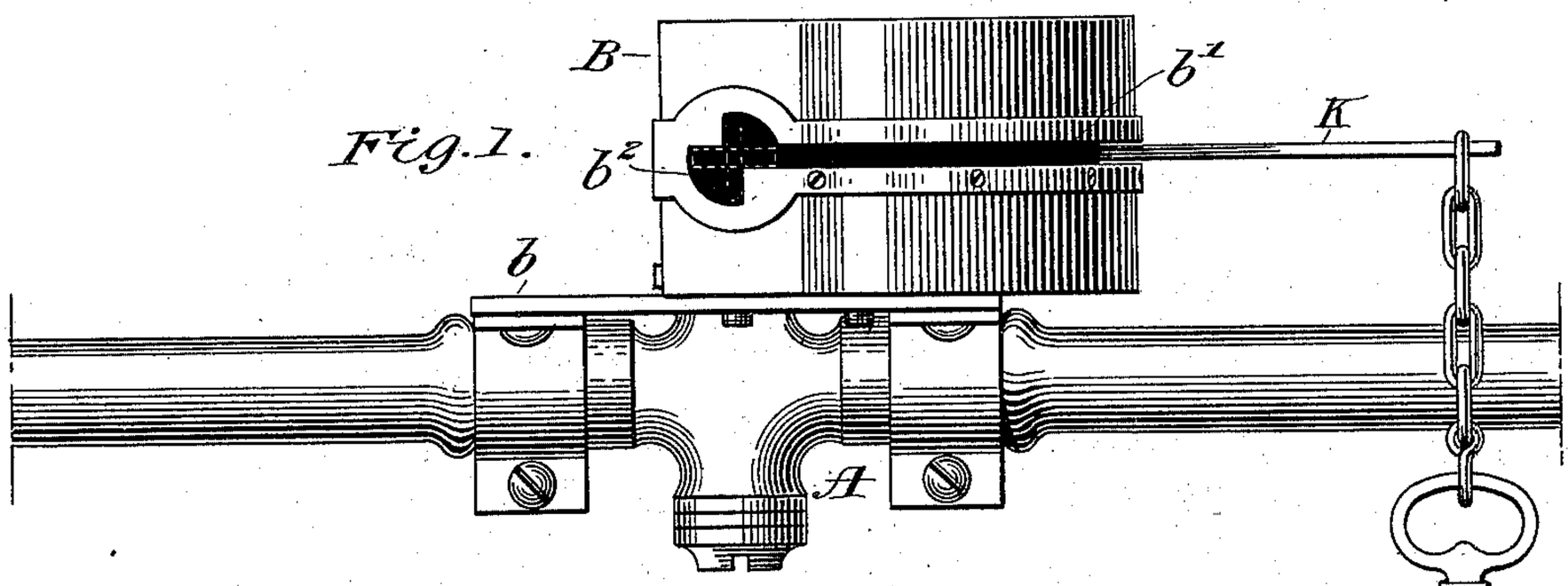


Fig. 2.

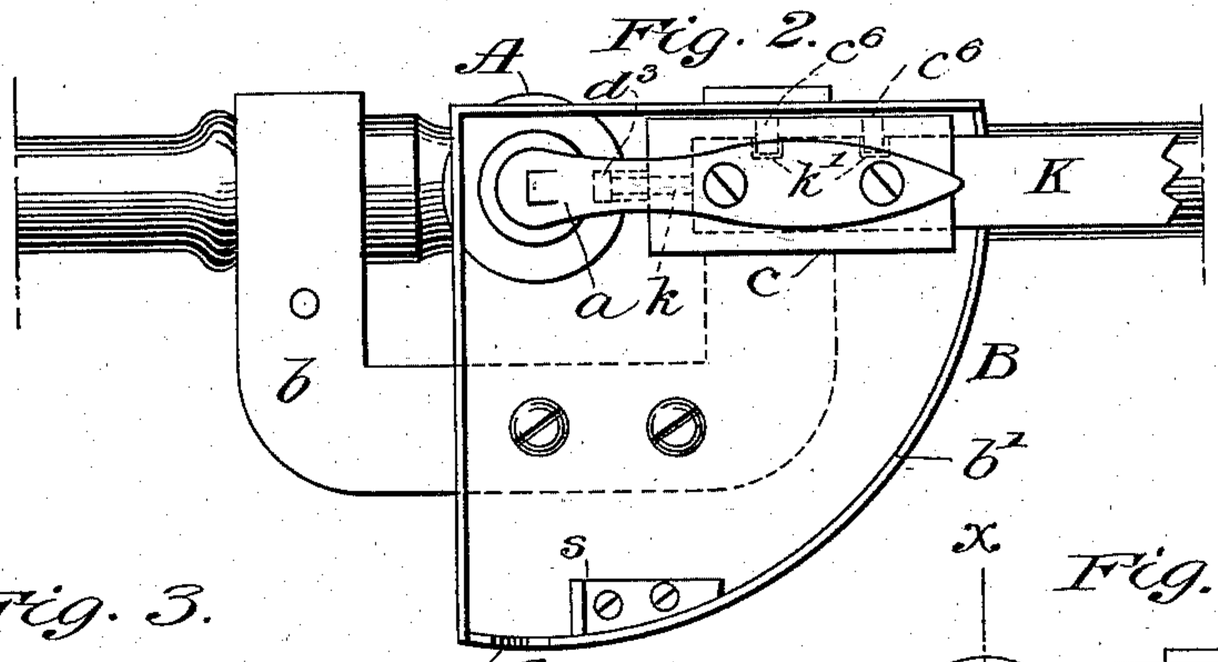


Fig. 3.

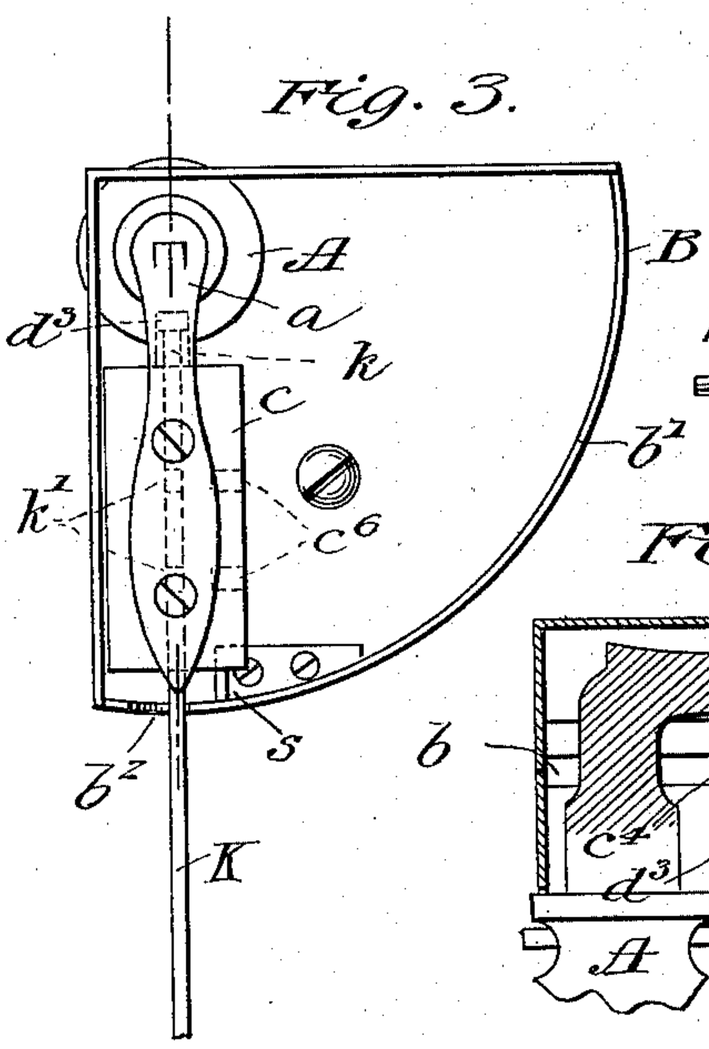


Fig. 7.

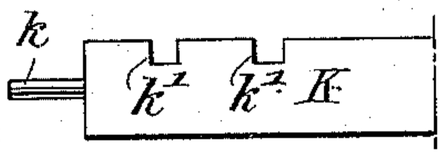


Fig. 5.

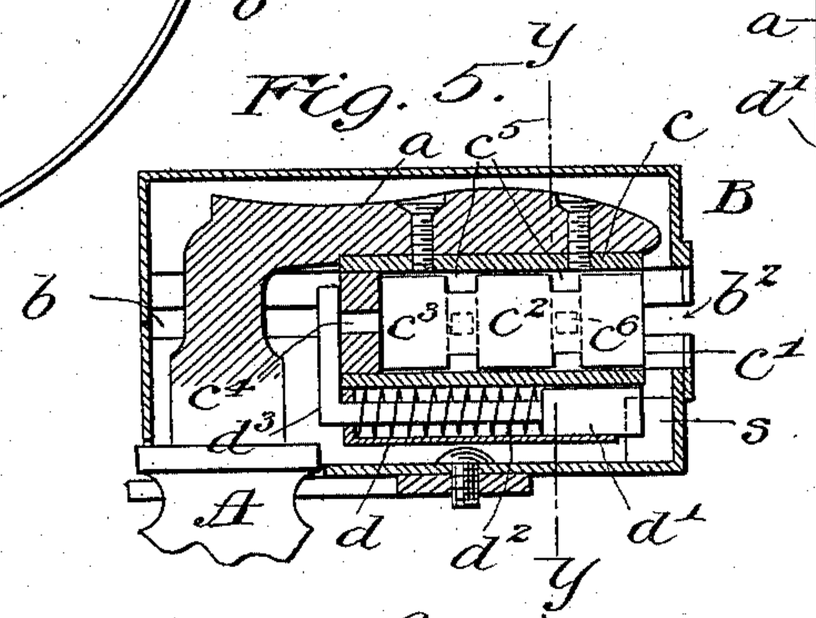


Fig. 6.

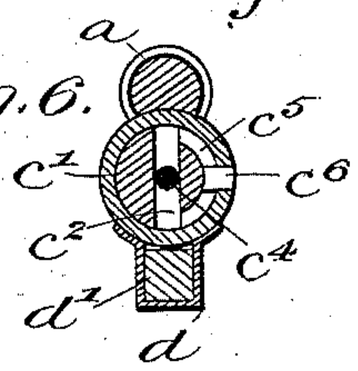
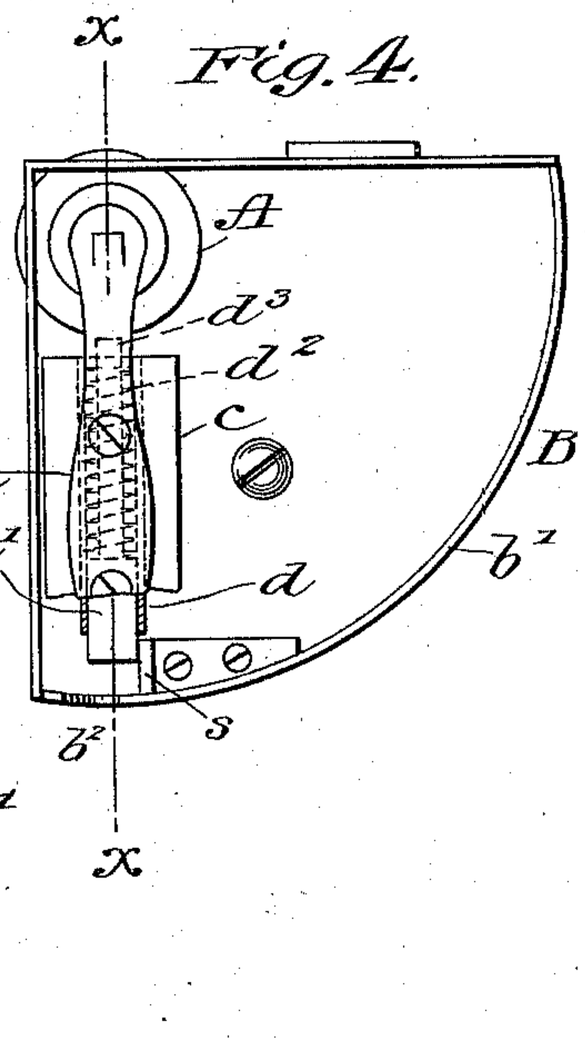


Fig. 4.



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LOCK.

SPECIFICATION forming part of Letters Patent No. 565,702, dated August 11, 1896.

Application filed March 25, 1895. Serial No. 543,060. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL STINER, a citizen of the United States, residing at 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 full, clear, and exact description.

My invention relates to locks, and has special reference to devices for enforcing the performance of some duty which it is easy to forget or avoid, by rendering it impossible to perform some other duty which is usually done as a matter of course.

My invention consists in permanently attaching to a valve-handle a lock or locks, and then inclosing the whole thing in a fixed casing, through an opening in which the lock or locks may be reached by a key. When the key is turned in the lock, the former may be used as a lever to swing the handle with its attached lock or locks into an opposite position, the key meanwhile moving through a slot in the casing. At the end of the movement the key is found to be trapped in the lock and cannot be released therefrom without first returning the handle and lock to their original position, at which point the key may be removed, but not without simultaneously locking the valve-handle in its then position. The removed key may then be used on any other lock which it fits, or it may be permanently attached to some other key, which latter may be used on another lock. The duty of moving the valve-handle must, therefore, be performed before the second lock can be operated.

The invention will be described in detail with reference to the accompanying drawings, in which—

Figure 1 is a front view of a valve fitted with my improvements, the valve-passage being open. Fig. 2 is a plan of the same with the top plate of the case removed. Fig. 3 is a similar plan, the position of the valve-handle being removed and the key turned. Fig. 4 is the same plan with the key removed and some parts broken away for clearness. Fig. 5 is a section on line $x\ x$ of Fig. 4. Fig. 6 is a section on line $y\ y$ of Fig. 5, and Fig. 7 is a detail of the end of the key.

The valve is represented by A. As shown here it is a water, gas, or other fluid valve, but it will be understood that it is merely an example of any controlling device operated by a handle. Attached to or adjacent to the valve is a bracket b, to which is permanently fixed a box or case B, surrounding and inclosing the handle a of the valve. In plan the box has the shape of a quarter of a circle, the curved side having a slot b' extending throughout its length and terminating at one end in a double-quadrantal opening b^2. One of the straight sides of the box is parallel to the line in which the handle stands when the valve is open, the other straight side being at right angles thereto, and the opening b^2 being adjacent to the latter side.

To the valve-handle is fixed a cylindrical lock-case c, containing a rotary cylindrical plug c', slotted from its outer end nearly to its inner end, the slot (c^2) terminating at the point c^3. From the point where the slot ends an axial hole c^4 extends through the plug. The plug on one side of the slot is provided with two peripheral grooves $c^5\ c^5$, into which project two lugs $c^6\ c^6$, fixed to the lock-case c and located in the plane of slot b' in the case B. The key K (shown in Fig. 7) is a flat bar provided with a thrust-pin k and two notches $k'\ k'$ and is adapted to be inserted in the slot c^2. When the end of the key is against the plug at the end of the slot, pin k projects through the axial opening c^4 and its notches are in line with grooves $c^5\ c^5$, respectively, in which position the plug may be rotated by twisting the key.

Beneath the lock-cylinder is a bolt-chamber d, containing a bolt d', which projects from its forward open end and is acted upon by a spring d^2, tending to thrust it outward. A tailpiece d^3 is attached to the bolt and is bent upward to stand immediately behind axial opening c^4. When the key is inserted, its thrust-pin k strikes and forces back the tailpiece, thus withdrawing the bolt. The bolt is adapted to engage with a stop s, fixed inside of case B, to lock the valve-handle in its cut-off position.

The key may, itself, fit another lock, but it is preferred to permanently attach it to another key, as shown in Fig. 1 at K', which fits any other lock, say, for instance, a main-door lock.

For the purpose of describing the operation

clearly we will assume that key K′ is the front-door key of a store or office building in which the valve A, controlling the supply of water to the building, is located, and that the janitor of the building is charged with the duty of shutting off the water at night, turning it on in the morning, and closing and opening the building nights and mornings.

On opening the building in the morning the janitor uses key K′. Then to supply water for use during the day he proceeds to the valve, which he finds he cannot turn in the ordinary way because it is covered by the case B. He inserts key K into the plug c' by passing it through the double-quadrantal opening b^2, the width of the key being vertical. This withdraws bolt d', but the handle cannot be swung because the key is crosswise of the slot b'. The key is then twisted a quarter-turn, which brings it into the plane of slot b' and consequently into a position where its notches k' k' embrace lugs c^6 c^6. By using the key as a lever or handle the valve is swung to the open position, the key meanwhile moving through slot b'. In this position it is found that the key cannot be removed from the lock because it is held by the lugs c^6 c^6, and the key cannot be twisted without cutting off the supply of water, so the key with its attached key is left in the lock during the day or until it is necessary to lock the building.

Before the building can be locked up the janitor is obliged to go to the valve for the key, and he cannot then get it without turning the water off. Having turned it off, he twists the key in the double-quadrantal opening, thus releasing it from lugs c^6 c^6, and withdraws it. The moment the key is removed, bolt d' springs out and locks the valve-handle in its cut-off position, thus preventing a vicious person from turning the water on by inserting an ordinary bar into the opening of the lock and swinging it around.

The form of lock described herein is not an essential feature of my invention. It is only essential that it shall lock the valve-handle and trap the key. Neither is the particular style of valve described herein essential, for it is obvious that if a globe-valve were used the lock might be attached to the hand-wheel and the slot in the casing would then be slightly inclined or spiral to allow for the raising and lowering of the wheel when it is turned.

Having thus described my invention, I claim—

1. The combination with a movable valve-handle, of a lock therefor and a fixed case inclosing the handle and lock, the case provided with a keyhole through which a key may be passed to operate the lock, substantially as described.

2. The combination with a valve-handle, of a lock therefor and a fixed case inclosing the handle and lock, the lock-bolt adapted to engage with the case to hold the handle in a fixed position therein, and means for releasing the handle.

3. The combination with a valve-handle, of a lock therefor and a fixed case inclosing the handle and lock, the case provided with a keyhole through which a key may be passed to operate the lock and with an elongated opening or slot through which the key may move when the handle is swung.

4. The combination of a valve-handle, a lock attached thereto and adapted to trap a key, a fixed case inclosing the handle and lock, and a key, the case being provided with a keyhole in which the key may turn and with a slot through which the key may move, but in which it cannot turn, substantially as described.

In testimony whereof I subscribe my signature in presence of two witnesses.

SAMUEL STINER.

Witnesses:
FRANK S. OBER,
JOHN KRAEGER.