

W. H. TAYLOR.
Drawer Lock.

No. 197,910.

Patented Dec. 4, 1877

Fig 1.

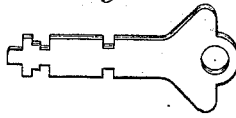


Fig 2.

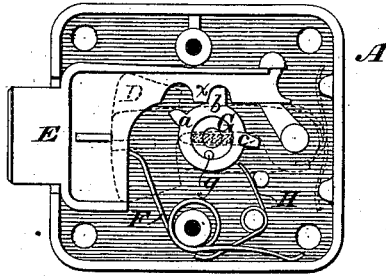


Fig 4.

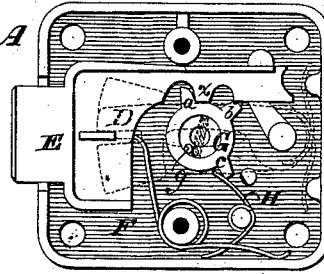


Fig 3.

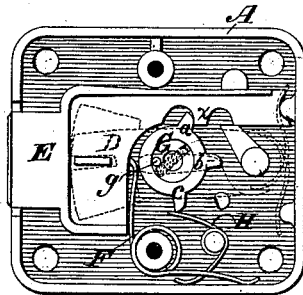


Fig 5.

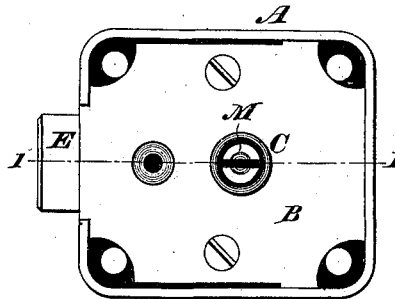


Fig 6.

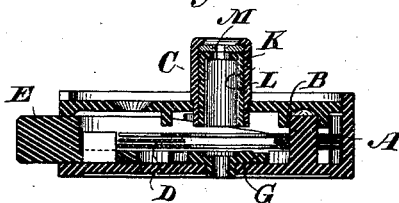


Fig 8.

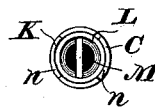


Fig 10.

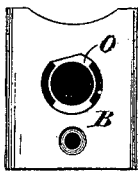


Fig 9.

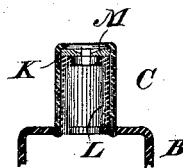


Fig 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

WARREN H. TAYLOR, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE
YALE LOCK MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN DRAWER-LOCKS.

Specification forming part of Letters Patent No. **197,910**, dated December 4, 1877; application filed
September 13, 1877.

To all whom it may concern:

Be it known that I, WARREN H. TAYLOR, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain Improvements in Drawer-Locks, of which the following is a specification that will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings.

My invention is an improvement on that patented to me February 1, 1876, No. 172,899, and comprehends a spring-lock with an improved construction of talon for throwing and stopping the lock-bolt, and an improved construction of the nosing or key-barrel, as herein set forth.

In the accompanying drawings, Figure 1 is a perspective view of a key suitably notched for the lock shown. Fig. 2 is a view of the inner side of the lock, with the bolt thrown forward in the locked position and the cap removed to show more fully the working parts; Fig. 3, a similar view, showing the bolt retracted or in the unlocked position; Fig. 4, a like view, showing the bolt in the snubbed or half-locked position; Fig. 5, a view of the inner side of the lock with the cap in place; Fig. 6, a sectional view on the line 1 1 of Fig. 5; Fig. 7, a plan view of the cap with the key-barrel or nosing removed, and showing clearly the mortises; Fig. 8, a bottom view of the key-barrel, showing the tenons; Fig. 9, a transverse central section through the cap and key-barrel shown in Figs. 7 and 8; Fig. 10, a plan view of a cap, showing another method of forming the mortises to that shown in Fig. 7.

A indicates the lock-case, B the cap carrying the nosing or key-barrel C, D the spring-tumblers, E the bolt, and F the bolt-spring, which parts need not be more particularly described.

Instead of forming the talon of an irregular-shaped bent lever, pivoted at one side of the key-pivot, as shown in my said patent, I form it of a ring or annular disk, G, provided with a pin or projection, *g*, to be struck by the key-bits, and also with three cams, *a b c*, two of which, *a* and *b*, engage loosely in corresponding notches in the lock-bolt, and the third, *c*,

bears against the spring, H, which thus acts upon the cam-ring in coincidence with the action of the bolt-spring, as is apparent from the drawings. The peculiarity of this cam-ring is in the two cams *a* and *b* and the corresponding notches in the bolt, in which they fit loosely, so that in the operation of the lock they are alternately withdrawn from these notches, as and for a purpose which I will now particularly describe.

Referring to Fig. 2 of the drawings, which represents the lock-bolt in the advanced or locked position, where the springs always tend to keep it, it will be observed that the cam *b* is in engagement with its notch in the bolt. When the key is inserted and turned for unlocking, the cam *c* strikes the spring H, the cam *b* throws the bolt part way, when it slides out of its notch, and the cam *a* enters its notch, engages with the bolt, and continues its movement to the unlocked position, as shown in Fig. 3. The operation is like that of a pinion and rack, except that the cams and notches are not so closely fitted and adjusted as to give the bolt a continuous motion. The cam *a* does not strike the lug or partition *x* between the bolt-notches until the cam *b* has slipped out of its notch, so that the movement of the bolt is slightly intermittent. Under the pressure of its spring it, in fact, for an instant, reverses its movement and meets the advancing cam *a*. The result is, that the cam *b* passes by its notch, so that when the force applied in turning the key is released, and the cam-spring and bolt-spring tend to restore the parts to the locked position, the cam *b* will not return to its notch, because that, by the intermittent movement in unlocking, has been placed out of coincidence, but will strike against the side of the bolt, and stop it in a position about half locked or thrown forward, as shown in Fig. 4.

The object of this is to facilitate the locking by the action of the bolt-spring when the drawer or door shall be shut, and the operation in that regard is as follows: The bolt, standing thus half advanced, and having its end or the strike beveled, is in a condition to be easily snubbed and retracted as the drawer

is closed. Having but a short distance to move for complete retraction, little difficulty is experienced, little force is required, and greater certainty of action is secured. As the bolt is snubbed back to the full unlocked position, the notch of the cam *b* is carried into coincidence with it; the cam-ring spring then turns the cam into its notch, and there remains no longer any obstacle to the complete forward throw of the bolt. The action of the springs, accordingly, fully locks the lock, and all the parts assume the position shown in Fig. 2.

I form the non-rotating nosing or key-barrel of two tubes, one rigidly incased within the other. The external tube *K*, made of thin-drawn brass tubing, is burnished over at the outer end, and within it is the tube *L*, similarly headed, so as to leave an annular inwardly-projecting ledge, which is notched on opposite sides. Between these heads or ledges is placed the rotating slotted disk *M*. The key can be inserted and withdrawn only when the slot in the disk and the notches in the inner ledge are coincident, and then the lock-bolt is always in the locked or half-locked position, ready to be locked upon the closing of the drawer. The key-barrel may be secured to the cap-plate in a suitable aperture by brazing; but instead of this the cap may be provided with two mortises, as shown in Fig. 7. When this is done I make the outer tube longer than the inner, and cut away a portion of its lower end to form tenons *n n* to fit the mortises.

I sometimes form my mortises by first cutting a partly-circular hole in the cap, and then forming and fitting into it a piece, *O*, with notches on each side, as shown in Fig. 10, the key-hole in the center of the applied piece being of even diameter with the bore of the inner tube.

I cast my lock-case with suitable posts and projections for securing the bolt, tumblers, and springs in place, as is usual in the manufacture of locks.

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

1. A ring or annular disk for a lock, provided on its periphery with two bolt-cams for alternate engagement with the lock-bolt, and with a third cam to be operated on by a spring, and having within its margin a pin or projection to be struck by the key-bit to turn the ring concentrically with the key, and thus throw the lock-bolt, substantially as described.

2. The combination of a three-cammed ring or disk with a bolt, bolt-spring, and cam-spring, whereby, when the unlocking has been performed by the key and its turning force has been withdrawn, the bolt will assume and be held in the half-locked position for snubbing and automatically locking when the drawer is closed, substantially as described.

3. A non-rotating nosing or key-barrel of a lock adapted for a sheet-metal key, composed of an internal ledged and notched tube rigidly incased in an external tube, and provided with a rotating slotted disk between the ledges, substantially as described.

4. In combination with the cap, the notched piece *O*, having a key-hole through it, whereby mortises are formed for securing the key-barrel, substantially as described.

In testimony whereof I have hereunto subscribed my name.

WARREN H. TAYLOR.

Witnesses:

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CHAS. E. VAIL.