

W. COX.
LOCK.

APPLICATION FILED FEB. 17, 1908. RENEWED APR. 11, 1910.

957,938.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

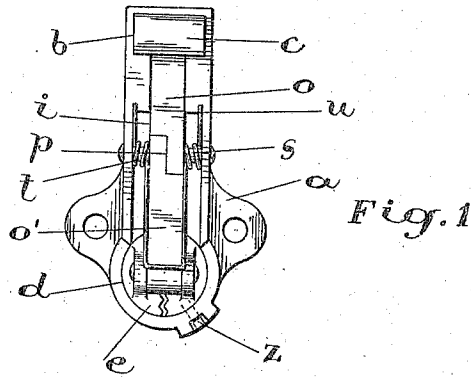


Fig. 1

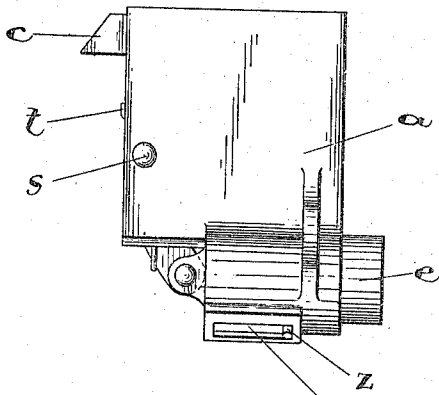


Fig. 3.

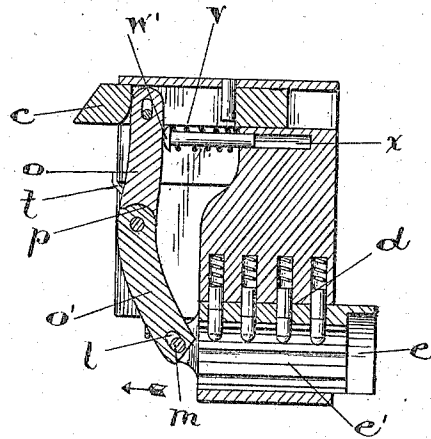


Fig. 4.

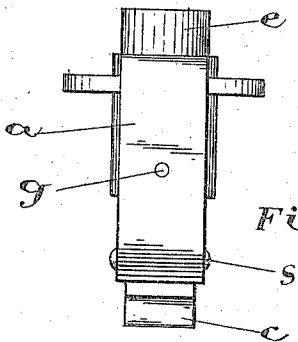


Fig. 2.

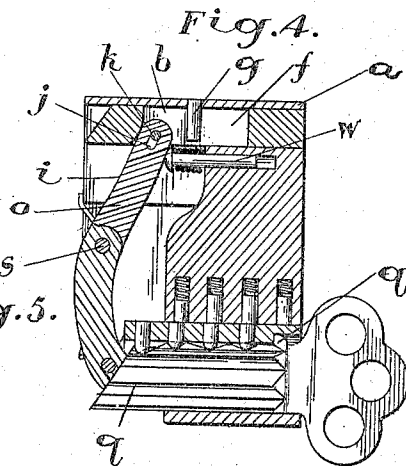


Fig. 5.

Witnesses.

N. L. Trumble
H. R. Robertson

Inventor.

William Cox
by this my
attorney

W. COX.
LOCK.

APPLICATION FILED FEB. 17, 1908. RENEWED APR. 11, 1910.

957,938.

Patented May 17, 1910.
2 SHEETS—SHEET 2.

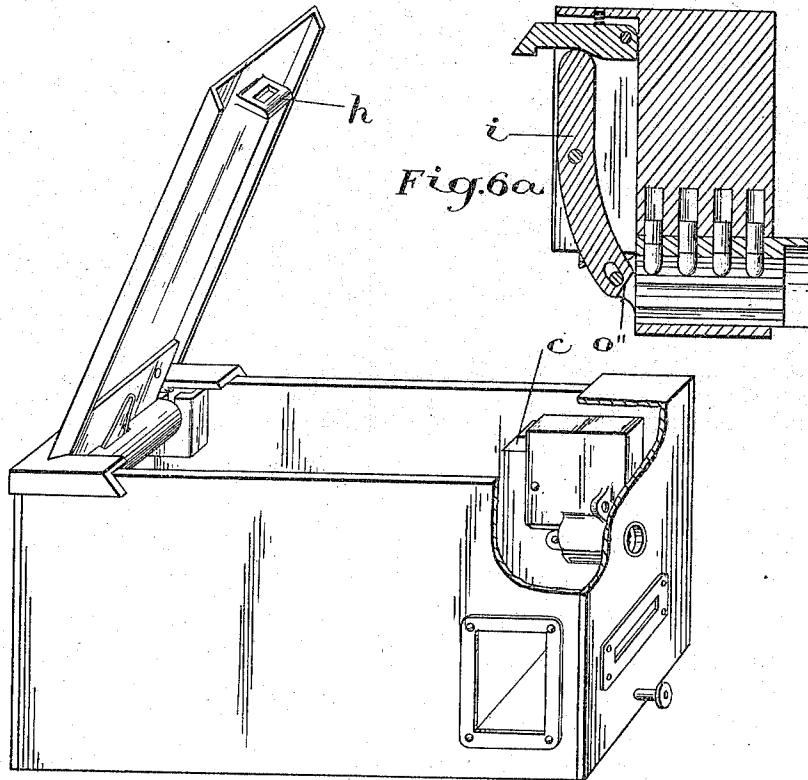


Fig. 7.

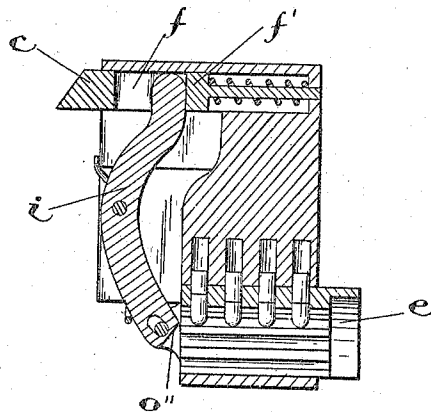


Fig. 6.

Witnesses.

H. C. Brinkley.

W. R. Robinson.

Inventor.

William Cox
by Charles Riches
his Attorney

UNITED STATES PATENT OFFICE.

WILLIAM COX, OF TORONTO, ONTARIO, CANADA.

LOCK.

957,938.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed February 17, 1908, Serial No. 416,307. Renewed April 11, 1910. Serial No. 554,793.

To all whom it may concern:

Be it known that I, WILLIAM COX, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Locks; and I hereby declare that the following is a full, clear, and exact description of the same.

In my concurrent application Serial No. 416,306, filed Feb. 17th, 1908, for improvements in receptacles for coins, tickets, fares, admission fees etc., I have shown and described a box provided with a hinged lid secured by a permutation lock having a slidable latch engaging with the lock keeper attached to the box lid.

My present invention relates to a lock which can be used for securing the box lid, and while this lock is designed to be used in connection with the box lid shown and described in the above application it is not desired to confine its use solely to that purpose as it may be used for other purposes of a like character.

In carrying out the invention the lock may be constructed with a slidable key cylinder held by permutation pins arranged to prevent the sliding movement of the key cylinder until they have been released from their holding position by the employment of the proper key, a lever moved in one direction by the sliding movement of the key cylinder, and a spring pressed latch released from the keeper by the actuation of the lever and restored to engagement with the keeper by the latch spring, as hereinafter set forth and particularly pointed out in the claims.

For an understanding of the invention reference is to be had to the following description and to the accompanying drawings in which:—

Figure 1, is an end elevation of the lock showing the latch, the lever, and the coacting parts looking at them from the latch end of the lock. Fig. 2, is a plan of the lock. Fig. 3, is a side elevation of the lock. Fig. 4, is a sectional view showing the parts in the same position as Fig. 3. Fig. 5, is a sectional view showing the parts actuated to release the latch from the keeper. Fig. 6, is a sectional view of a modification of the construction shown in the preceding views. Fig. 6^a, is a sectional view of a second modification, and Fig. 7,

is a perspective view of a box with which the lock is intended to be used.

Like characters of reference refer to like parts throughout the specification and drawings.

The lock shown in Figs. 1 to 5, may be described as consisting of a lock case or supporting member *a* having at one end a slideway *b* for the latch bolt *c*, and at the other end a chamber *d*, for the key cylinder *e*. The latch bolt *c* is formed with an elongated slot *f*, in which is located a stop *g* forming part of the slideway *b*, the purpose of the stop being to limit the movement of the latch bolt *c* in the direction of the keeper *h*. Fulcrumed to the supporting member *a* between the slideway *b* and chamber *d* is a lever *i*, one end of which enters the elongated slot *f*, and is formed with a pin slot *j* for the pin *k* which connects the lever to the latch bolt. The other end of the lever *i* is formed with a pin slot *l* for the pin *m* which connects the lever to the adjacent end of the key cylinder *e*.

The lever *i* consists of two lever arms *o o'* connected by a rule joint *p*, so that as the key cylinder *e* moves in the direction indicated by arrow in Fig. 4, they will act in unison to move the latch bolt in the direction of arrow and release it from engagement with the keeper *h*. To release the latch bolt the key *q* enters the key cylinder until the latter is engaged by the key shoulder or shoulders *q'*, and the pin cuts, of the key, register with the permutation pins to position them to release the key cylinder. The key then pushes the key cylinder in the direction indicated by arrow in Fig. 4, and causes the lever arms *o o'* to turn, on the fulcrum *s*, from the position shown in Fig. 4, to that shown in Fig. 5. This movement of the lever *i* moves the latch bolt *c* in the direction indicated by arrow in Fig. 4, and disengages it from the keeper *h*. When the lock cylinder is relieved from the pressure of the key *q*, it returns from the position shown in Fig. 5, to that shown in Fig. 4, by the action of the cylinder spring or springs *t* coiled on the fulcrum *s*, and bearing at one end against the stop *u*, and at the other end against the lever arm *o'*, the stop *u* forming part of, or being connected to the supporting member *a*. The lever arm *o* and latch bolt *c* are restored to their normal

position by the action of the latch bolt spring *v*, which for convenience, is coiled on a pin *w* partly contained in a pin slide *x* formed in the supporting member *a* adjacent to the latch bolt slideway *b*, and having one end bearing against the lever arm *o*, the latch bolt spring *v* engaging the head *w'* of the pin, and that part of the supporting member *a* surrounding the pin slide *x*. The end of the lever arm *o'* connected to the key cylinder *e* has a beveled surface *o''* to engage with the beveled end of the key *q*, and properly position the key in the key way *e'* and by doing so prevent any variation of the position of the key in the key way when releasing the permutation pins. The wall of the chamber *d'* is formed with a slot *y* and the key cylinder *e* is provided with a guide *z* which slides in the slot *y* and maintains the correct position of the key cylinder in the chamber so that the key cylinder will constantly move in a fixed path and return to its correct normal position under the influence of the spring or springs *t* when relieved of the actuating pressure of the key. The key if properly cut is retained in the lock, by the engagement of the permutation pins in the pin cuts, until the key cylinder has returned to its normal position. The keeper engaging end of the latch bolt *c* is beveled and when the keeper *h* is moved into its locked position, it engages the beveled end of the latch bolt and causes it to slide from the position shown in Fig. 4, to that shown in Fig. 5, the movement of the latch bolt independent of the movement of the key cylinder being permitted by the lever arm *o* turning on its fulcrum *s* independently of any movement on the part of the lever arm *o'*. By making the lever *i* of two separate parts *o* *o'* and connecting the parts *o* *o'* by a rule joint *p* the lever arm *o* can move independently of the lever arm *o'* when the latch bolt is actuated by the keeper *h* to permit the latter to move into its locked position. This construction is necessary when the lever *i* is attached to the latch bolt and key cylinder, owing to the fact that the key cylinder cannot move except when actuated by the key, and by reason of the fact that it is frequently necessary for the reasons stated in the above application, to automatically lock the box lid without the employment of the key. This construction can be varied however without departing from the object of the invention, and one modification is shown in Fig. 6, in which a unitary lever *i* is employed, the lever being connected at one end to the key cylinder *e*, and disconnected at the other end from the latch bolt *c*, the end of the lever engaging with the latch bolt being contained in the slot *f*, and engaging with a stop *f'* forming part of the latch bolt, and so positioned as to leave an unoccupied space be-

tween the stop and head of the bolt head which will permit the latch bolt to move sufficiently under the influence of the keeper *h*, to allow the keeper to move into its locking position.

In Fig. 6^a, the lever *i* is shown to engage the latch bolt and lift the keeper engaging end from the keeper *h* during the sliding movement of the key cylinder.

It is not desired to confine the invention to the exact construction and purpose above described as it can be used for numerous purposes, and can be varied within the scope of the appended claims without departing from the object or nature of the invention.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A lock comprising a slidable cylinder, a slidable latch bolt movable parallel with the cylinder and a lever actuated by the cylinder to move the latch bolt.

2. A lock comprising a slidable cylinder, a slidable latch movable parallel with the cylinder, an actuating lever for the latch operated by the cylinder as the latter moves in one direction, and means for moving the lever and cylinder in the other direction.

3. A lock comprising a slidable cylinder, a slidable latch movable parallel with the cylinder, an actuating lever for the latch operated by the cylinder as the latter moves in one direction and a latch spring for the latch.

4. A lock comprising a slidable cylinder, a slidable latch movable parallel with the cylinder, an actuating lever for the latch operable by the cylinder as the latter moves in one direction, a latch spring for the latch, and springs to restore the cylinder to its initial position.

5. A lock comprising a slidable cylinder, a latch, and an actuating lever for the latch consisting of two lever arms movable in unison when the lever is actuated by the cylinder, one of the arms moving independently of the other when the latch moves independently of the cylinder.

6. A lock comprising a slidable cylinder, a latch, an actuating lever for the latch consisting of two lever arms movable in unison when the lever is actuated by the cylinder, one of the arms moving independently of the other when the latch moves independently of the cylinder, a latch spring, and a spring for the cylinder.

7. A lock comprising a lock case having a slideway, and a cylinder chamber, a latch bolt movable in the slideway parallel with the cylinder, a stop limiting the outward movement of the latch bolt in the slideway, a latch spring for the latch a slidable cylinder contained in the cylinder chamber, and an actuating lever for the latch operable by the sliding movement of the cylinder.

8. A lock comprising a lock case having a

5 slideway and a cylinder chamber, a latch bolt movable in the slideway, a stop limiting the outward movement of the latch bolt in the slideway, a latch spring for the latch, a slidable cylinder contained in the cylinder chamber, an actuating lever for the latch operable by the sliding movement of the cylinder, an actuating lever consisting of two lever arms movable in unison when actuated

by the cylinder, one of the arms movable independent of the other when actuated by the latch as it moves independently of the cylinder. 10

Toronto, January 31st, 1908.

WILLIAM COX.

Signed in the presence of—

C. H. RICHES,

OLIVE BATEMAN.