





# UNITED STATES PATENT OFFICE.

HENRY TURNER, OF SHEFFIELD, ENGLAND, ASSIGNOR TO THE WORMALD PATENT LOCKS COMPANY, LIMITED, OF SAME PLACE.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 647,207, dated April 10, 1900.

Application filed January 24, 1900. Serial No. 2,669. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY TURNER, lock-maker, a subject of the Queen of Great Britain and Ireland, residing at 28 Artizan View, Heeley, Sheffield, in the county of York, England, have invented certain new and useful Improvements in Locks Operated by Keys, (for which I have made application in Great Britain, No. 12,966, dated June 22, 1899,) of which the following is a specification.

My said invention relates to an improved lock which is particularly applicable to lock the doors or money-drawers of prepayment gas-meters, but which may also be used for other purposes.

The accompanying sheet of drawings clearly illustrates my invention.

Figure 1 shows in end view and partly in section a money-drawer of a prepayment-meter with my invention applied. Fig. 2 is a front elevation thereof. Fig. 3 shows the hinged flap raised and the money-drawer partially withdrawn. Figs. 4 to 13 show detailed constructions of the lock and a modified form thereof. Figs. 14 and 15 illustrate the form of key used to operate the lock.

In constructing a lock in accordance with my invention I secure by brazing or otherwise a tube or sleeve *a* to the withdrawable money-drawer *b*. This sleeve *a* is shown separately in Fig. 4. The casing or drawer-holder *c* is provided with a hinged flap *c'*, carrying a bush *d*, preferably circular, within which beds the circular plate *e* of the lock. This plate *e* is pierced for the reception of the key and lies flush with the bush *d*, secured to the flap *c'*, so that it cannot be knocked off. Connected to the key-plate *e* and protruding within the fixed sleeve *a* is a hollow spindle *e'*, carrying a disk *f* of circular or it might be irregular formation. To the disk *f* is pivoted a wing *f'*, on the pivot-pin *f<sup>2</sup>* of which is mounted a cam or detent *f<sup>3</sup>*. The pivoted wing *f'* is so weighted or operated by a spring *g* as that normally it will assume a position eccentric to the disk *f*, on which it is carried, as shown in Fig. 8.

By means of a key passed through the key-hole *h* and along the hollow spindle *e'*, the wards or projections of which are turned

through an aperture *e<sup>2</sup>* in the spindle to engage with the cam or detent *f<sup>3</sup>*, secured to the pivot *f<sup>2</sup>* of the wing *f'*, the wing *f'* may be turned concentric with the fixed disk, as shown in Fig. 7.

The key I prefer to use is shown in Figs. 14 and 15. A barrel *i* is arranged to slide within a hollow sleeve *j* against the action of a spring *k*. Within the barrel *i* is mounted a spindle *l*, secured to the sleeve *j* by means of a pin *j'*. To the spindle *l* is pivoted a bit *l'*, which normally is housed within the barrel *i*, as shown in Fig. 14. On the key being inserted within the lock it comes into contact with the disk *f*, and pressure being applied the barrel *i* is retracted within the sleeve *j* against the spring *k*, the pin *j'* sliding in a slot *i'* cut in the barrel. The spindle *l*, attached to the sleeve *j*, is thus traversed within the barrel *i*, and the bit *l'* is turned on its pivot and thrust out of the barrel *i* through a slot, as shown in Fig. 15.

The operation of the lock is as follows: The lock is preferably loose, as shown in Fig. 5, and is provided with a groove *m*, engaging with a corresponding projection *m'* on the bush *d*, secured to the flap *c'*, to prevent the lock from turning. If desired, however, the lock could be permanently secured to the door or drawer. The flap *c'* of the drawer-holder *c* is turned down, and the pivoted wing *f'* is disposed by means of the key concentric with the fixed disk *f*, as shown in Fig. 7, so that the lock will pass along the fixed tube or sleeve *a* and permit the door to close. When the lock has been placed in position, the pivoted wing *f'* has reached the end of the fixed sleeve *a*, and on the key being withdrawn the wing *f'* assumes an eccentric position to the fixed disk, which fills up the end of the sleeve, as shown in Figs. 1 and 8. The sleeve therefore acts as an abutment to the pivoted wing *f'*, and thus locks the pivoted flap *c'* of the drawer-holder *c* to the money-drawer *b* of the meter. By inserting the key and operating the same, as described, on turning the same the bit *l'*, protruding through the aperture *e<sup>2</sup>* in the hollow spindle *e'*, acts upon the cam or detent *f<sup>3</sup>*, as shown in Figs. 5 and 9, and turns the pivoted disk into a po-



sition concentric with the fixed disk, thus permitting the whole lock to be withdrawn from the fixed tube or sleeve *a*. The flap *c'* can then be turned up, as shown in Fig. 3, and the drawer be withdrawn. Any key of suitable construction may be used, although I prefer to use the spring-key described and which is made in accordance with the specification of United States Letters Patent No. 614,157, obtained by Abraham Henry Wormald.

To detect tampering with the lock, the head of the lock is formed with a slot or recess *n* to allow of a rupturable sheet of paper or tin or lead foil seal *o* (shown in dotted lines in Fig. 6) to be inserted, the paper covering the keyhole *h* and being inserted after the lock has been placed in position within the sleeve *a* and before it is shot home therein. As the paper or other material covers the keyhole *h*, any attempt to insert a key must necessarily result in the perforation of the paper and lead to detection.

To prevent the picking of the lock by means of an inserted wire or the like, I may provide the disk *f* with a semicircular guard *o'*, as shown in Figs. 12 and 13, which would serve as an obstruction to prevent the bent end of a piece of wire engaging with the pivoted detent *f*<sup>3</sup>. In this case the bit *l'* of the key is cut away or recessed, as shown in Fig. 12, to embrace the guard *o'*, the upper portion of the tongue engaging, as described, with the detent *f*<sup>3</sup>.

Instead of a pivoted locking-wing *f'* I might mount the locking device *f''* to slide between two disks *p p*, as shown in Figs. 10 and 11, being thrust outward by means of the spring *q*. The tongue or projection *l'* of the key is arranged to come into contact with a stud *r*, secured to the sliding locking device *f''* and

retract the same between the disks *p p* against the action of the spring.

I declare that what I claim is—

1. In combination, the drawer and drawer-casing, a sleeve secured to said drawer, a flap hinged to the drawer-casing, a bush carried by said flap, and a plate adapted to be seated in said bush and locking means carried by said plate for engaging the sleeve, substantially as described.

2. In combination, the drawer and drawer-casing, a sleeve secured to said drawer, a flap hinged to the casing and adapted to swing across the face of the drawer, a bush carried by said flap, a plate adapted to be seated in said bush, a tube carried by said plate extending inward within the sleeve, a disk carried by said tube and adapted to engage the sleeve, and a key adapted to be inserted in said tube to operate said disk, substantially as described.

3. In combination, the drawer and drawer-casing, a sleeve carried by the drawer, a flap hinged to the casing and adapted to swing across the face of the drawer, a plate adapted to seat in an opening in said flap and having an inwardly-projecting portion provided with locking means for engaging the sleeve, a key adapted to be inserted in an opening in said plate and inwardly-projecting portion to operate said locking means and a transverse passage in said plate adapted to permit the insertion of a rupturable seal to close the keyhole before the parts are placed in locking position, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HENRY TURNER.

Witnesses:

CLAUDE GEORGE FLETCHER,  
GEORGE FREDERICK MATTHEWS.