

(No Model.)

F. SOLEY.  
LOCK.

No. 555,408.

Patented Feb. 25, 1896.

FIG. 1.

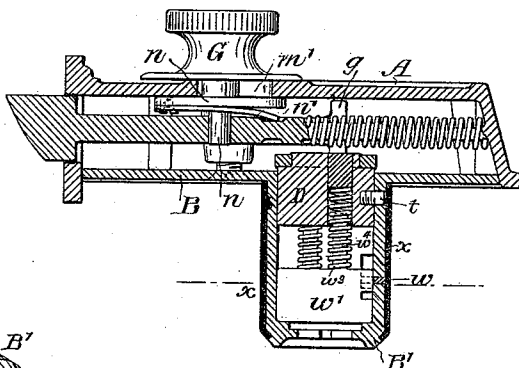


FIG. 6.

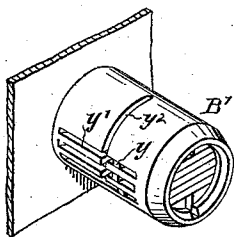


FIG. 5.

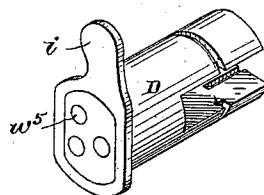


FIG. 2.

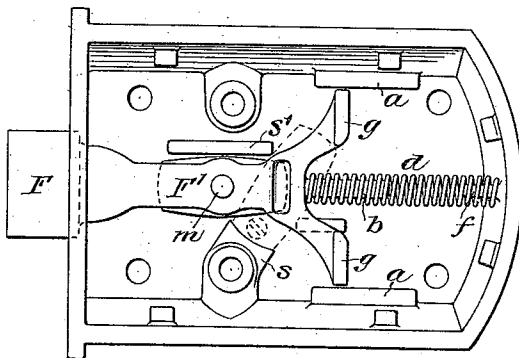


FIG. 3.

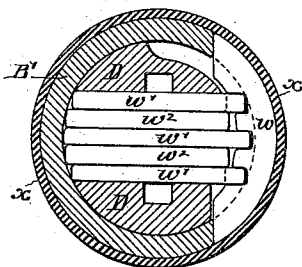
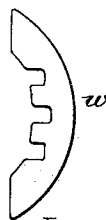


FIG. 4.



Witnesses:  
F. D. Goodwin  
Will. A. Barr

Inventor:  
Frank Soley  
by his Attorneys  
Howson & Brown

# UNITED STATES PATENT OFFICE.

FRANK SOLEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE  
D. K. MILLER LOCK COMPANY, OF SAME PLACE.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 555,408, dated February 25, 1896.

Application filed April 11, 1895. Serial No. 545,386. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK SOLEY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Latch-Locks, of which the following is a specification.

One object of my invention is to so construct a latch-lock that the latch is readily reversible, so as to be used for doors opening  
10 either inward or outward, a further object being to provide simple means for retaining the bolt in the retracted position, and a still further object being to simplify the construction of that part of the lock in which the tumbler-carrier is mounted. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional plan view of a latch-  
20 lock constructed in accordance with my invention. Fig. 2 is a face view of the lock with the cover-plate and its tumbler mechanism removed. Fig. 3 is a transverse section on the line 3 3, Fig. 1, on an enlarged  
25 scale. Fig. 4 is a detached view of the fence-plate. Fig. 5 is a perspective view of the inner end of the tumbler-carrier with the latch-operating arm secured thereto, and Fig. 6 is a perspective view illustrating a modified form of tumbler mechanism.

A represents the casing of the lock having one side closed by a detachable cover-plate B, which has a tubular projection B' containing the tumbler-carrier D of the lock.

35 The front of the casing A has the usual openings in which is guided the latch-bolt F, abrupt on one face and beveled on the other face, the stem F' of the bolt extending inward and being forked at its inner end, said  
40 forked inner end being guided between suitable lugs or projections *a* at the top and bottom of the casing.

From the rear portion of the stem F' projects a pin *b*, which receives one end of a  
45 coiled spring *d*, the other end of said spring being adapted to a pin *f* projecting inwardly from the rear end of the casing, the tendency of this spring being to protect the latch-bolt, as shown in Fig. 2. Each limb of the forked  
50 inner end of the latch-bolt stem F' has oppositely-projecting lugs *g*, one of these lugs on

that side of the stem which is adjacent to the inner end of the tumbler-carrier D being acted upon by an arm *i* on the latter, so that as the tumbler-carrier is turned the latch-  
55 bolt will be withdrawn.

If the bolt is to be withdrawn by a movement of the tumbler-carrier to the right, the arm *i* will engage with the lug *g* of the upper fork of the latch-bolt stem, while if, on the  
60 other hand, the bolt is to be withdrawn by a movement of the tumbler-carrier to the left the arm *i* will engage with the lug *g* of the lower fork of the stem.

As both forks of the stem have projecting  
65 lugs on each side, the latch-bolt and its stem can be so placed in the lock that said bolt may face in either direction, so that the lock can be used either upon a door opening outward or upon a door opening inward.

70 The stem F' of the bolt is perforated for the reception of a pin *m*, projecting inwardly from a knob G, an enlarged portion of said pin being adapted to a slot *m'* formed in the casing A, so that the latch can be withdrawn by moving the knob G backward across the face of  
75 the casing.

Secured to the pin *m* is a plate *n*, having on its inner face a flat spring *n'*, which bears against the adjacent faces of the latch-bolt  
80 stem F', the latter being preferably notched or recessed for the entrance of the free end of the spring, as shown in Fig. 1.

When the latch-bolt is drawn back, the knob G is turned so as to move the plate *n* to the  
85 position shown by dotted lines in Fig. 2, the lower end of the plate then engaging with a lug *s* in the lock-casing, while the front edge of the plate above the pivot engages with a  
90 lug *s'* above the stem of the bolt, so that accidental projection of the latch-bolt is effectually prevented. The plate *n* can, however, be readily turned back into position in line with the stem of the bolt by properly manipulating the knob when it is desired to again re-  
95 lease the latch. Accidental turning of the plate *n* so as to release it from control of the lugs *s s'* when the latch is retracted is, however, prevented by reason of the fact that when said plate *n* is turned to the position  
100 shown by dotted lines in Fig. 2 the free end of the spring overlaps the upper edge of the

stem  $F'$ , and thus requires the exercise of some force in order to again restore the plate to its normal position.

The tumbler-carrier  $D$  is retained in position longitudinally in the tubular projection  $B'$  by means of a pin  $t$ , adapted to a slot in said projection, the extent of said slot limiting the turning movement of the carrier. The projection  $B'$  is also recessed for the reception of a "fence-plate"  $w$ , a portion of which projects into the tumbler-carrier and is slotted for the reception of the edges of the tumblers  $w'$ , which must all be adjusted by the key until their notches are in line with the fence-plate before the tumbler-carrier can be turned to withdraw the bolt.

The tumblers are separated from each other by washers  $w^2$  and are normally projected by means of spiral springs  $w^3$  surrounding stems  $w^4$ , which are formed on the tumblers and extend into recesses in the inner end of the tumbler-carrier, the inner ends of these recesses being closed by means of plugs  $w^5$ .

The fence-plate is held in position and the pin  $t$  is covered by a thin sheet-metal tube  $x$  surrounding the projection  $B'$  and held in place thereon by bending the front edge of the tube into a recess formed in said projection  $B'$  near the end of the same, as shown in Fig. 1.

The latch-operating arm  $i$  is secured to the inner end of the tumbler-carrier by reducing the latter, fitting the hub of the arm to this reduced portion, and riveting down the edges of the latter which project beyond the hub of the arm. (See Figs. 1 and 5.)

In Fig. 6 I have shown a modified form of tumbler mechanism in which, instead of using a fence-plate and notched tumbler, the tumblers have projecting bits  $y$ , adapted to longitudinal slots  $y'$ , formed in the tubular casing  $B'$ , the latter also having a segmental slot  $y^2$  crossing the series of slots  $y'$ , so that when the bits of the tumblers have all been adjusted longitudinally until they are in line with the slot  $y^2$  the tumbler-carrier can be turned, but not otherwise.

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

1. The combination of the lock-casing and its tumbler-carrier, with a sliding latch-bolt forked at the inner end so as to form upper and lower legs, each with oppositely-projecting lugs, whereby the bolt can be reversed,

and a spring serving to project the bolt, said spring being interposed between the crotch of said fork and the lock-casing, substantially as specified.

2. The combination in a latch-lock, of the casing, the sliding latch-bolt, the sliding knob engaging with said bolt and free to turn, the locking-plate carried by said knob, and lugs within the casing, one of said lugs being below the bolt and engaging with the lower portion of the locking-plate, and the other lug being above the bolt and engaging with the upper portion of the locking-plate when said plate is turned out of line with the latch-bolt stem, substantially as specified.

3. The combination in a latch-lock, of the casing, the sliding latch-bolt, the sliding knob engaging with said bolt and free to turn, a locking-plate carried by said knob and adapted to engage with one or more lugs on the inside of the casing when turned out of line with the latch-bolt stem, and a spring carried by said locking-plate and serving by engagement with the latch-bolt stem to prevent accidental displacement of the locking-plate when the same is adjusted so as to retain the bolt in the retracted position, substantially as specified.

4. The combination of the tumbler-carrier and its tumblers, the tubular casing containing said carrier, a segmental fence-plate contained in a slot in said casing and projecting into the carrier so as to engage with the tumbler, and an external tube for holding said fence-plate in the slot of the casing, substantially as specified.

5. The combination of the tumbler-carrier, the tumblers, the slotted casing and the external tube slipped onto the casing and retained in position thereon by having its front end bent into a recess in said casing, substantially as specified.

6. The combination of the tumbler-carrier and its tumblers, the tubular casing containing said carrier, and a fence-plate let into a slot in said casing, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK SOLEY.

Witnesses:

WILL. A. BARR,  
FRED C. BENNER.