(No Model.)

W. S. NASH.

LOCK.

No. 578,763. Patented Mar. 16, 1897.

Fig. 1.

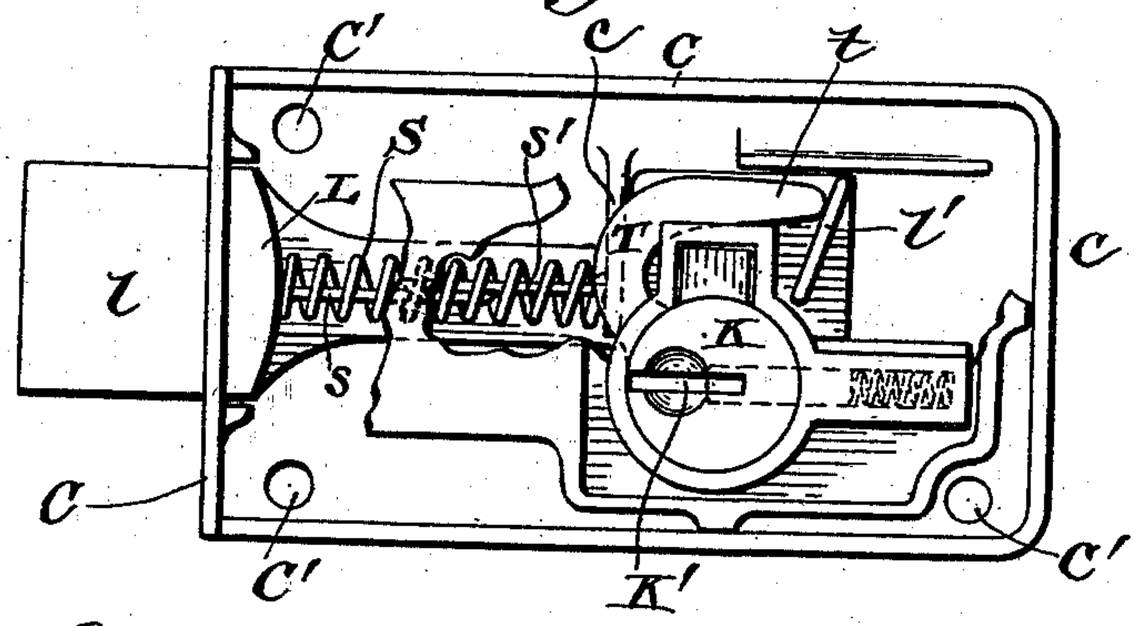


Fig. 2.

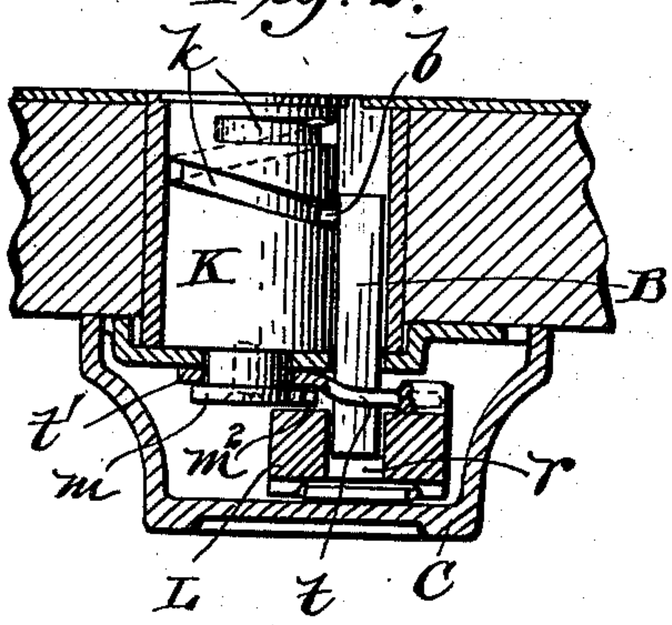


Fig. 3.

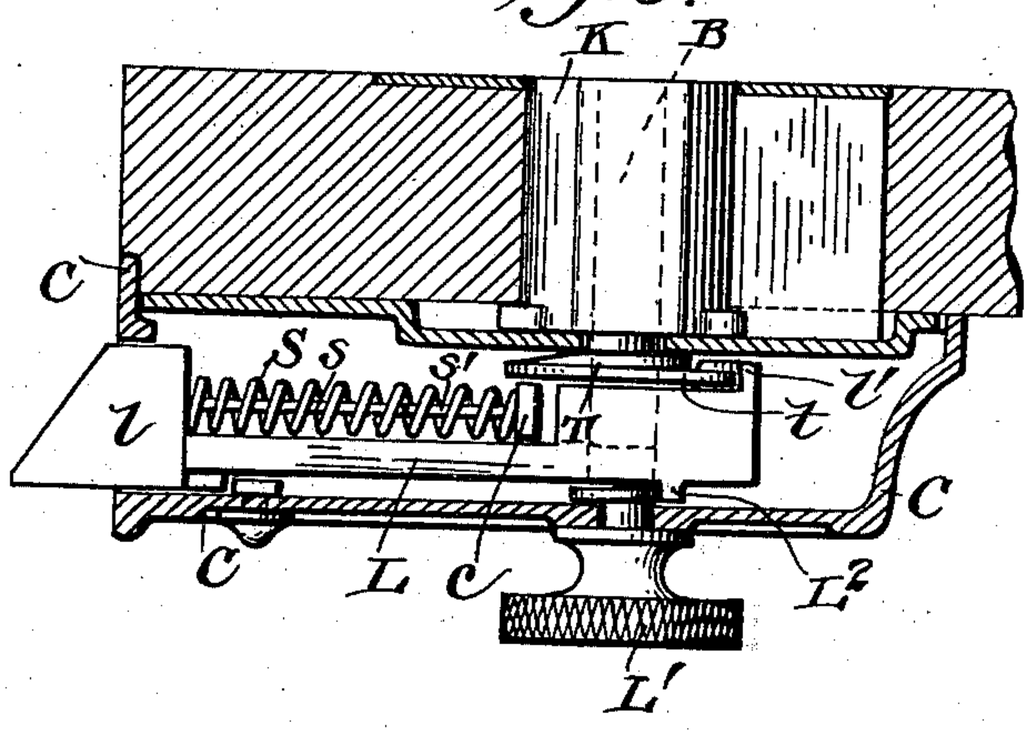


Fig. 4.

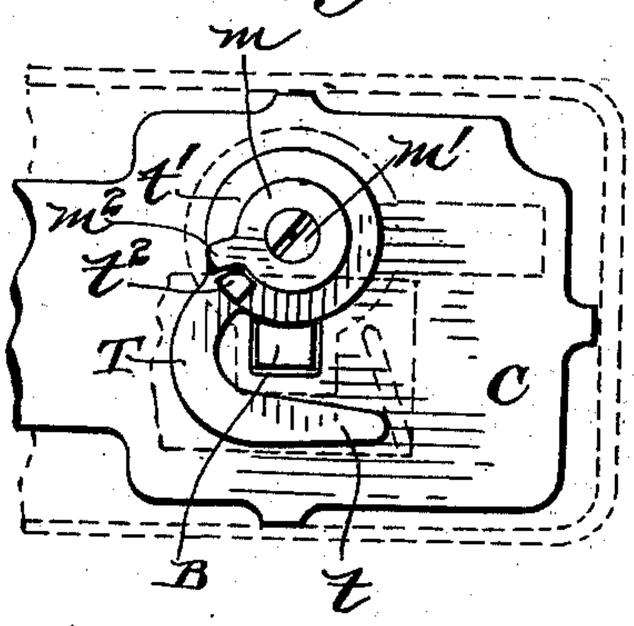
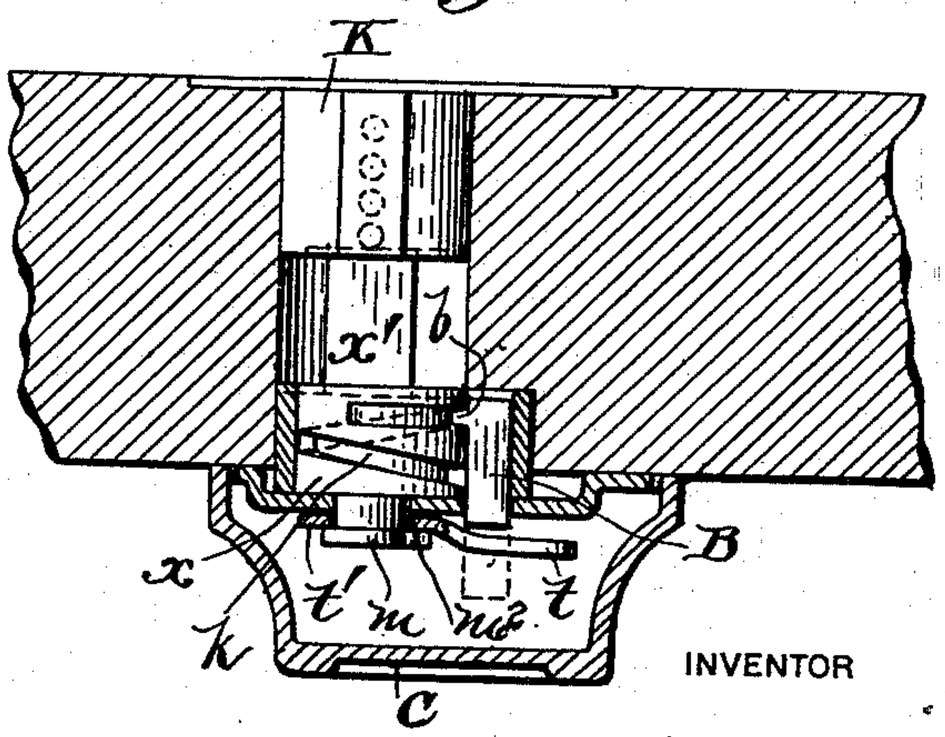


Fig. 5.



WITNESSES

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WALTER S. NASH, OF KNOXVILLE, TENNESSEE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 578,763, dated March 16, 1897.

Application filed July 14, 1896. Serial No. 599,092. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. NASH, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary purpose of this invention is to provide a lock that can be dead-locked by means of the key ordinarily used to retract the latch.

Of the drawings accompanying this specification, Figure 1 represents a rear elevation of my improved lock, showing the parts in operative position, the rear plate of the lock-casing being broken away to that end. Fig. 2 is a transverse horizontal section of the lock, showing a side view of the key-cylinder and the dead-locking device proper. Fig. 3 is a transverse longitudinal section of the lock. Fig. 4 is a detail showing a plan, in elevation, of the latch-tumbler and dead-lock bolt. Fig. 5 is a transverse cross-section of the lock, showing a modification.

Similar letters of reference indicate corresponding parts of the device.

In the drawings, C is the lock-casing, provided with the projection *c* and the screw-holes C′.

L is the latch, provided with the head *l*, the projection *l′*, the well or recess *r*, and the spiral spring S, which incloses the pins *s* and *s′*.

L′ is a turn-knob in the face of the lock-casing engaging the projection L^2 on the latch, whereby the latch may be retracted in the usual manner.

T is the latch-tumbler, provided with the arm *t*, the circular portion *t′*, and the head or projection t^2 and is loosely mounted on the reduced end of the key-cylinder K.

K is the key-cylinder, provided with the key-seat K′, the peripheral groove *k*, and the escutcheon *m*, which is attached to the key-cylinder K by means of the screw *m′* and is provided with the laterally-projecting pin or projection m^2.

B is the dead-locking bolt, provided with the head or lateral projection *b*, which is adapted to operate in the peripheral groove *k*.

Where the lock is intended to operate in extra thick doors, an auxiliary cylinder is provided and coupled to the key-cylinder proper by means of the connecting rod or shaft *x′*.

A more detailed description of my lock and its operation are as follows: The key-cylinder K, which is preferably provided with spring-tumblers of the usual pattern, is adapted to be partially rotated to the right, and when so rotated the laterally-projecting pin or projection m^2 on the escutcheon *m* engages the stud or projection t^2 on the tumbler-arm *t*, whereby the tumbler-arm *t*, which engages the projection *l′* on the latch L, retracts the latch and permits the door to swing open, as is apparent.

It will be noted that when the key-cylinder is rotated to the right the head or laterally-projecting pin *b* on the dead-locking bolt B is not depressed, because the upper portion of the groove *k* is parallel to the base of the cylinder, but when the key-cylinder, which may be rotated completely to the left, is so rotated the dead-locking bolt B is depressed into the recess *r* in the latch L by reason of the action of the spiral portion of the groove *k* on the head or laterally-projecting pin *b* of the bolt B, so that when the key-cylinder K is given one complete rotation to the left the bolt B is literally screwed down into the recess *r* in the latch L, whereupon the key can be removed from the lock. When the dead-lock bolt B has been inserted into the recess *r* in the latch L, as above indicated, it is apparent that to open the door the key-cylinder K must be given one complete revolution to the right, so as to retract the dead-lock bolt B from the recess *r* in the latch L, and then to retract the latch there must be a further but partial rotation of the key-cylinder K to the right, whereby the tumbler-arm *t* engages the projection *l′* on latch L, retracting the latch, as is apparent. The latch-tumbler T is loosely socketed on the reduced end of the key-cylinder K and is held in position thereon by escutcheon *m*, which is attached to the key-cylinder K by means of the screw *m′*, as hereinbefore mentioned.

For very thick doors I provide a key-cylinder K of the ordinary type and an auxiliary cylinder *x*, which are coupled together by the

connecting rod or shaft x', the rotation of the key-cylinder rotating the auxiliary cylinder x, which, being provided with the groove k, operates the dead-locking bolt B in the manner already described. The pins s and s' are attached to the head l of the latch L and to the projection c in the lock-casing and are provided to strengthen and regulate the action of the spiral spring S.

I am aware that a spiral peripheral groove has been used in combination with a headed bolt in a door-lock as a locking mechanism, but I am not aware that these instrumentalities have been combined in the manner and for the specific purposes set forth in this specification of my device.

Having described my invention and its operation, what I claim is—

1. In a door-lock, the combination of a rotary key-cylinder, a peripheral groove upon said cylinder, extending laterally and parallel to the base of said cylinder and opening at one end into a spiral groove also in the periphery of said cylinder, a bolt provided with a head or a lateral projection adapted to move in said lateral and spiral grooves and susceptible of being elevated and depressed by the action of said spiral groove upon the head or lateral projection on said bolt, a latch-tumbler, provided with an arm, and so adapted as to be responsive to the rotation of the key-cylinder, a spring-latch provided with a projection, against which engages said tumbler-arm, and a recess or well so adapted as to receive the lower portion of said bolt, substantially as described.

2. In a door-lock the combination of a rotary key-cylinder, a peripheral groove in said cylinder, which extends laterally about said cylinder and parallel to its base for a portion of the way around the same and then spirally descends once around said cylinder, a bolt provided with a head or a laterally-projecting pin engaging in the peripheral groove in said cylinder, a spring-latch provided with a projection at one end and a well or recess, into which is projected the base of said bolt, a latch-tumbler loosely fitted about the reduced end of said key-cylinder and provided with an arm so adapted as to normally engage said projection on said latch, a horizontal projection or stud on said tumbler-arm, and an escutcheon attached to the base of the reduced end of said key-cylinder, provided with a laterally-projecting pin or stud, which normally engages with the horizontal projection or stud on said tumbler-arm, and proper instrumentalities for holding the mechanism in operative position, substantially as described.

3. In a door-lock, the combination of a rotary key-cylinder and an auxiliary cylinder coupled thereto by means of a connecting rod or shaft, and so adapted as to rotate with said key-cylinder, a peripheral groove in said auxiliary cylinder, which extends laterally about said auxiliary cylinder, and parallel to its base, for a portion of the way around the same, and then spirally descends once around said auxiliary cylinder, a bolt provided with a head or a laterally-projecting pin engaging in the peripheral groove in said auxiliary cylinder, a spring-latch provided with a projection at one end and a well or recess into which may be projected the base of said bolt, a latch-tumbler loosely fitted about the reduced end of said auxiliary cylinder and provided with an arm so adapted as to normally engage in said projection on said latch, a horizontal projection or stud on said tumbler-arm, and an escutcheon attached to the base of the reduced end of said auxiliary cylinder provided with a laterally-projecting pin or stud which normally engages with the horizontal projection or stud on said tumbler-arm and proper instrumentalities for holding the mechanism in operative position substantially as described.

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

WALTER S. NASH.

Witnesses:
ALEXANDER H. BELL,
CASSELL SEVERANCE.