2 Sheets—Sheet 1.

J. SARGENT.

LOCKS FOR CELL DOORS.

No. 188,962. Patented March 27, 1877.

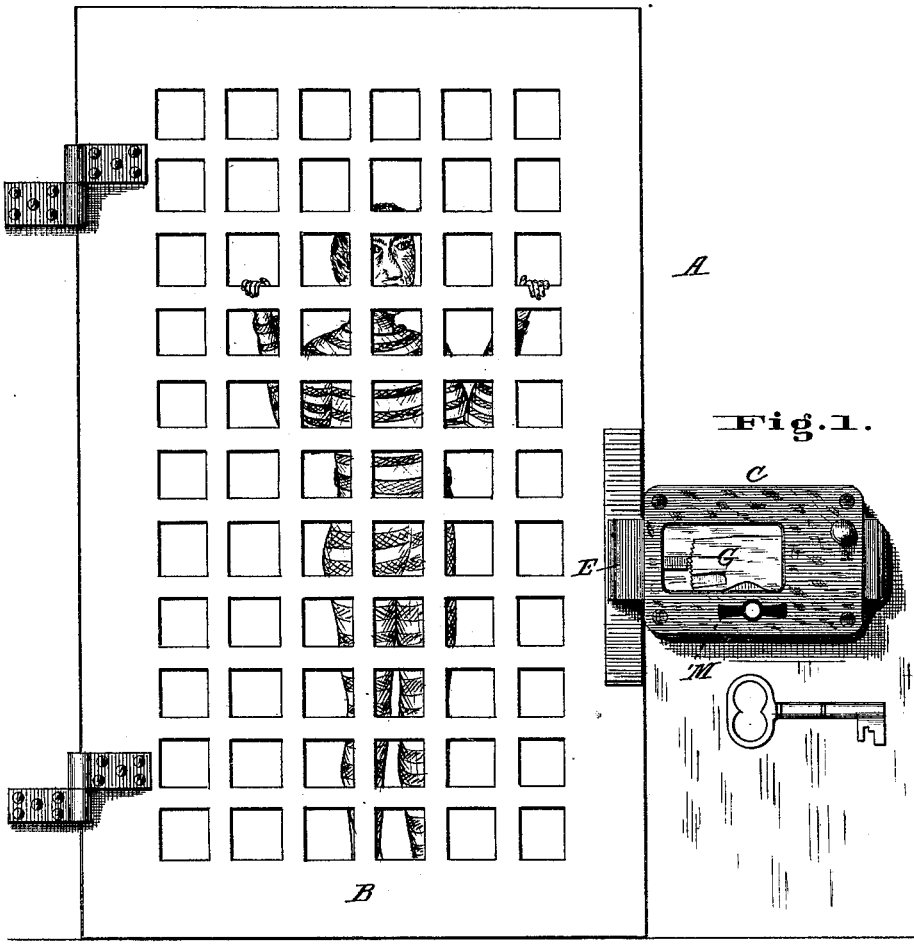

Fig. 1.

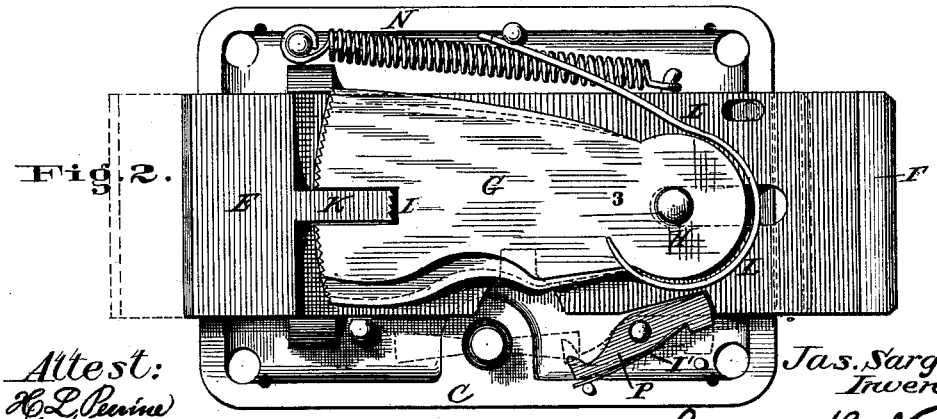

Fig. 2.

Attest:
H. L. Pevine
A. H. Norris

Jas. Sargent
Inventor.
By. James L. Norris,
Attorney.

2 Sheets—Sheet 2.

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Fig. 3.

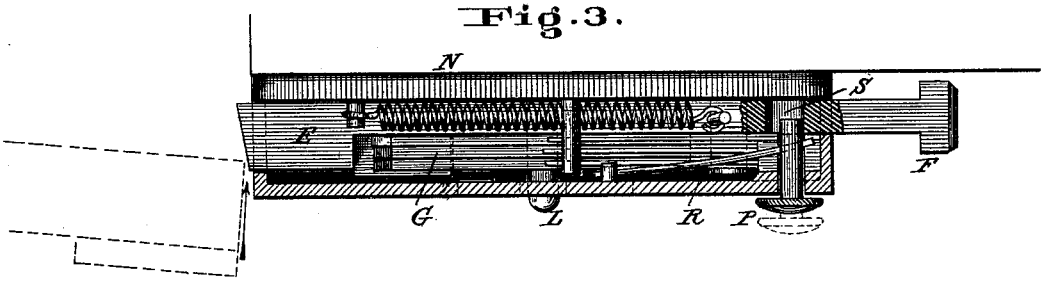


Fig. 5.

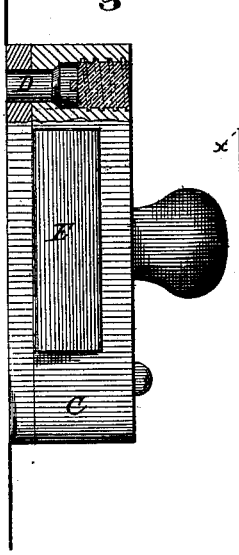


Fig 4

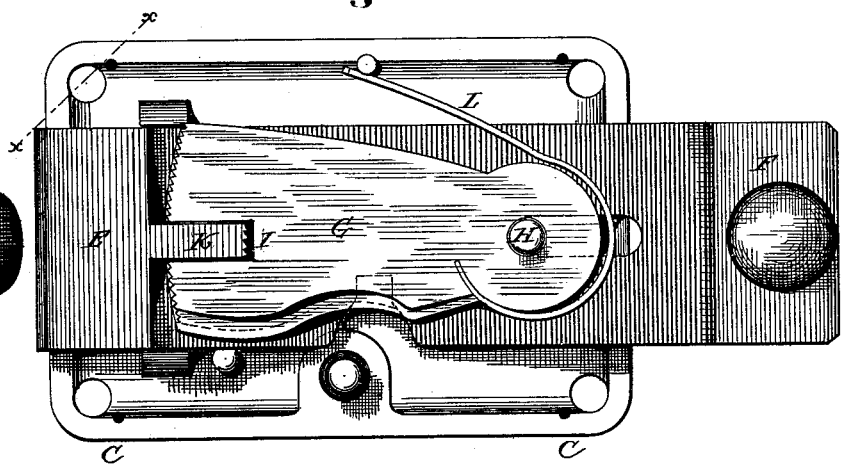
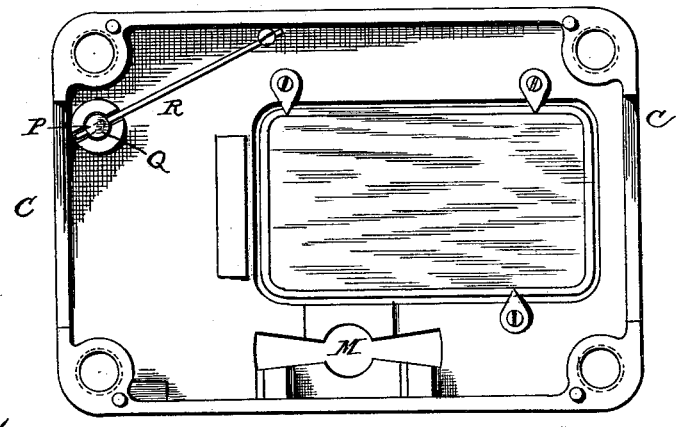


Fig. 6.



Attest:
H. L. Perrine
A. H. Norris.

James Sargent.
Inventor.
By. James L. Norris.
Attorney

UNITED STATES PATENT OFFICE.

JAMES SARGENT, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN LOCKS FOR CELL-DOORS.

Specification forming part of Letters Patent No. **188,962**, dated March 27, 1877; application filed February 5, 1877.

To all whom it may concern:

Be it known that I, JAMES SARGENT, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Locks for Cell-Doors, of which the following is a specification:

This invention relates to certaim improvements in locks for the doors of prison-cells; and its principal object is to provide a lock the bolt of which is adapted to be held in a retracted position when unlocked, and to be automatically projected into a locked position by the action of the door in closing, being particularly designed for that class of institutions in which the prisoners are required to close their cell-doors after entering, thus insuring the locking of the same.

My invention consists, first, in the combination, in a lock, of a lock-bolt and tumblers, said lock-bolt protruding through the lock-case, and being arranged within a suitable casing provided with a double key-hole, one end of which bolt, protruding through the case, serves as a handle for projecting it, while the other end fastens the door by riding over a portion of its outside surface when in locked position; second, in the combination, in a lock, of a lock-bolt and tumblers, said lock-bolt being arranged in a suitable casing or support, and a pawl, dog, or other device for holding the said bolt in an unlocked condition, the lock-bolt being constructed to be retracted by means of a key, and automatically projected into a locked position when released by the action of the door directly against the end of the bolt in closing; third, in the combination, in a lock, of a lock-bolt and tumblers, said lock-bolt being arranged in a suitable casing or support, and a pawl or dog, which is made to engage the lock-bolt by means of a key when the bolt is retracted, and automatically release it by the action of the door in closing, thereby allowing the bolt to be automatically projected into a locked position.

In the drawings, Figure 1 represents a front view of a prison-cell, showing my improved lock in position. Fig. 2 represents an interior view of the lock, showing the lock-bolt retracted. Fig. 3 represents a longitudinal horizontal section of my improved lock. Fig. 4 represents an interior view of a modification of my lock, showing a knob or handle at the rear of the bolt for the purpose of projecting it when the projecting-spring is omitted. Fig. 5 represents a view of the lock, showing a transverse section through one of the screw-apertures and screw by means of which the lock is secured to the front of the cell; and Fig. 6 represents a rear view of the lock-casing with the back plate and works removed, showing the pawl or dog which engages the lock-bolt to hold it in a retracted position.

The letter A represents the front of the cell, and B the cell-door, opening outwardly. C represents the lock casing or support, secured to the jamb of the door by means of screws D, which pass through apertures in the lock-casing, which are countersunk and screw-threaded above the heads of the screws, said threaded portion being designed to hold a filling for the protection of the screws against unauthorized removal.

The letter E represents the lock-bolt, which is arranged to reciprocate back and forth in the lock-casing, the front end, when projected, serving to lock the door by riding over its edge, the rear end projecting at the rear of the casing, and being provided with a shoulder or shoulders, F, to limit its movement in a forward direction, and, if desirable, with a knob or handle, as shown in Fig. 4, for the purpose to be hereinafter explained. The letter G represents a series of any number of tumblers, pivoted at their rear ends to a pin, H, secured to the lock-casing, said tumblers being suitably slotted at their outward ends, as shown at I, the said slots being so arranged relatively, in the usual manner, as to be brought in line by means of a properly-warded key to form a passage-way for the fence K, in order to allow the bolt to be retracted. The forward ends of the tumblers are serrated, and also the end of the fence, preferably in an opposite direction, for the purpose of engaging each other, and preventing the tumblers from being shifted by any instrument except the proper key. The tumblers may be arranged to fall by their own gravity, but are preferably provided with springs L for throwing them down. The lock-casing is provided

with a double key-hole, M, so that the key may be removed after a partial revolution, in order to facilitate the unlocking of the cells.

The lock-bolt is preferably so constructed as to be projected automatically into a locked position by the closing of the door, and to effect this the bolt is beveled outwardly at its forward end, which projects sufficiently to be slightly in the way of the edge of the door on its closing movement. To the bolt is secured one end of a spring, N, the other end of which is secured to the inner part of the casing, at or near its forward end, the said spring operating to draw the bolt into its locked position when free. The letter P represents a pawl or dog, which, as represented in Figs. 2, 3, and 6, consists of a pin working in an aperture in the front of the lock-casing, being provided with a button on the outside, and mounted on the end of a spring, R, on the inside of the lock-casing, which spring has a tendency to throw the pin outwardly when not engaging the bolt. The bolt is provided with an oblong slot, S, which falls below the pin when the bolt is retracted, and into which the pin can be pressed by hand from the outside, and made to engage when the bolt is released from the key, the rear end of the slot binding and holding the pin. Upon closing the door, when the bolt is thus held in its retracted position, the door, in passing the beveled end of the bolt, forces it slightly backward, disengaging the end of the pin, which is forced out of the slot by its spring, allowing the spring N to project and lock the bolt.

In the modification shown in Fig. 2 the dog or pawl P is represented by a lever pivoted directly under the bolt, at the rear of the interior of the casing, one end of said lever being adapted to be thrown into a recess on the lower side of the bolt by the action of the key after retracting the bolt, so as to hold the bolt in its retracted position, and when the bolt is struck by the door in closing, the said lever is released and its rear end thrown down by the action of the flat spring I′, allowing the bolt to be projected into its locked position, as before.

The operation of my invention is as follows: The key, being properly inserted, is turned to the rear, lifting the tumblers, so as to bring all the slots in line, and carrying the bolt back until the key automatically sets the dog or pawl, in case the pawl or dog illustrated in Fig. 2 is employed, or until the dog or pawl illustrated in Fig. 3 is set by hand, after which the bolt takes a slight forward motion, engaging and holding the pawl or dog, and is, in turn, held or engaged thereby. The door is opened at the moment the bolt is drawn fully back, and upon its return will strike against the beveled end of the bolt, which, in its retracted position, when held by the pawl or dog, projects slightly at the front of the casing, forcing it sufficiently backward to release the pawl, thus allowing the bolt to be projected by the action of the spring, so as to lock or fasten the door.

If convenient, the spring and pawl or dog may be omitted, as represented in Fig. 4, and the bolt projected into its locked position by the jailer after the prisoner has entered, the bolt being provided with a knob at the rear for the purpose.

It will be seen from the above description that while the lock-bolt can only be retracted by means of the key, it can be readily and expeditiously projected, for the purpose of locking, when the time arrives for confining the prisoner, either automatically by the closing of the cell-door, or by the jailer, without the employment of the key, resulting in a great saving of time, and, where the bolt is automatically projected, insuring the locking of the door against any carelessness or oversight of the jailer.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a lock, of a lock-bolt and tumblers, said lock-bolt being arranged within a suitable casing, provided with a double key-hole, one end of which bolt, protruding through the case, serves as a handle for projecting it, while the other end fastens the door by riding over a portion of its outside surface when in a locked position.

2. The combination, in a lock, of a lock-bolt and tumblers, said lock-bolt being arranged in a suitable casing or support, and a pawl, dog, or other device for holding the same in an unlocked condition, the lock-bolt being constructed to be retracted by means of a key, and automatically projected into a locked position when released by the action of the door directly against the end of the bolt in closing, substantially as described.

3. The combination, in a lock, of a lock-bolt and tumblers, said lock-bolt being arranged in a suitable casing or support, and a pawl or dog which is made to engage the lock-bolt by means of a key when the bolt is retracted, and automatically released by the action of the door in closing, thereby allowing the bolt to be automatically projected into a locked position.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JAMES SARGENT.

Witnesses:
JAMES L. NORRIS,
JOS. L. COOMBS.