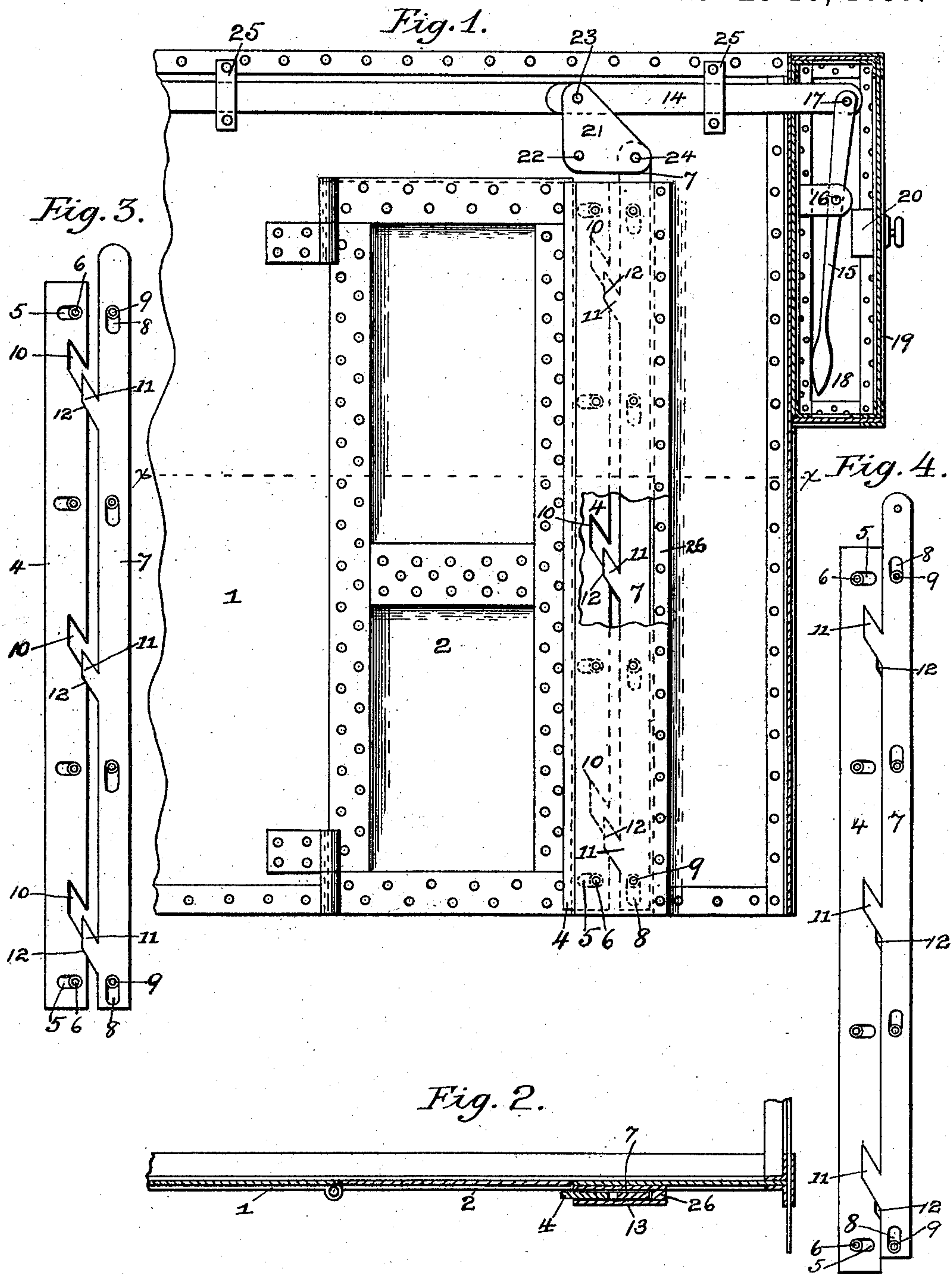


(No Model.)

R. D. YORK.  
DOOR LOCK.

No. 584,753.

Patented June 15, 1897.



Witnesses  
Albert B. Blackwood.  
Jas. H. Blackwood.

Inventor  
Raymond D. York  
by Samuel R. Brock  
Attorney



# UNITED STATES PATENT OFFICE.

RAYMOND D. YORK, OF PORTSMOUTH, OHIO, ASSIGNOR TO THE PORTSMOUTH STRUCTURAL STEEL AND IRON COMPANY, OF SAME PLACE.

## DOOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 584,753, dated June 15, 1897.

Application filed April 1, 1897. Serial No. 630,301. (No model.)

*To all whom it may concern:*

Be it known that I, RAYMOND D. YORK, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain new and useful Improvements in Door-Locks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to door-locks.

The invention is designed particularly in connection with jail or cell doors, by means of which a lock is produced that cannot be tampered with or operated upon by unauthorized access to the same. It may be used to lock and unlock a single door, or it may be used to simultaneously lock and unlock a series of doors—in a corridor, for instance—by means of a link connection.

For these purposes my invention consists in the following construction and combination of devices, the features of which will first be fully described and the points of novelty then set forth in the claims.

Figure 1 represents the section of a wall and a door for closing an opening therein to which I have applied my improvements. Fig. 2 is a horizontal sectional view taken through the line *x x* of Fig. 1. Fig. 3 is a detail plan view of the door-bolt and bolt-operating bar, showing the bolt in a locked position; and Fig. 4 is a similar view showing the bolt withdrawn or unlocked.

In the drawings, 1 represents a section of a wall of a jail-cell, having a door-opening therein closed by a door 2.

3 are the hinges of the door.

The locking-bolt 4 extends, preferably, the whole length of the door 2 and has a continuous bearing against the ledge upon the door. Ordinarily the lock of a door is carried by the door itself; but my improved locking-bolt is carried in the door-jamb or wall, and the door itself is provided with a continuous keeper, plate, or ledge within which the bolt 4 rests when locked.

Bolt 4 has a reciprocating movement back

and forth, so that it may be projected into locking contact with the door or withdrawn from the swinging path of the same. To secure this result, I preferably provide the bolt 4 with a series of horizontally-disposed slots 5, through which project circular bearings 6, which provide both a support for and a slide upon which the bolt 4 moves.

For operating the sliding bolt 4 I provide a vertical bar 7, having a series of vertical slots 8, through which project bearings 9, which may support the bar 7 and does provide for its vertical reciprocatory movement.

Within the outer edge of the bolt 4, or the edge next the operating-bar 7, I form, preferably, a series of slots 10, cut from the outer face of the bolt angularly upward, as clearly shown in the drawings, while upon the contiguous edge of the vertical operating-bar 8 are formed a corresponding series of angularly-disposed projections 11, adapted to enter and engage the angular slots 10 above referred to.

The operation of the bolt 4 and vertical bar 7 will be described farther on. Upon the lower edge of each of the slots 10 in the bolt 4 is formed a recess or offset 12, having a face parallel with the vertical edges of the bolt 4 and a lower face preferably parallel with the sides of the angular slots 10. The operating-bar 7 is designed to have the outer vertical edge of its projections 11 drop into the recess 12 as an additional security in rendering the lock "dead" and absolutely safe from attempt at tampering with the same.

Both the locking-bolt and the vertical operating-bar are completely incased by a metal plate 13.

This lock is preferably operated by a horizontal link 14, disposed above the door and connected with the bolt and with an operating-lever, which is locked against unauthorized access thereto.

I have shown a method of operating the lock in the drawings, in which 15 is the operating hand-lever, fulcrumed at 16 and pivotally connected at 17 with the connecting-link 14. This hand-lever is inclosed in a



strong metal box 18, having a door 19, provided with a lock 20.

The connection between the link 14 and the bolt-operating bar 7 may be made in any suitable way. In the drawings I make the connection with a bell-crank lever 21, fulcrumed at 22 and pivoted at 23 to the link 14 and to the operating-bar 7 at 24. The connecting-bar 14 is supported in any suitable bearings, such as cleats 25.

It should be understood that while only one door and one bolt-operating mechanism is shown my invention is capable of simultaneously actuating a series of doors, the link 14 being shown extended for that purpose and each of the door-bolt devices being connected to said link or links by duplicate bell-crank levers 21. The locked hand-lever 18 in such case operates the whole series of door-bolts. The door is shown locked in Figs. 1 and 3. When it is desired to unlock the door or doors, the door of the hand-lever-containing box is first unlocked and the lever 15 pulled outwardly. This movement causes the operating bar or bars 7 to rise through the link connections, and the angularly-disposed projections 11 engage the corresponding recesses 10 in the bolt 4. As the bar 7 continues to rise the impingement of the parts 10 and 11 cause the long vertical bolt 4 to be reciprocated or withdrawn horizontally upon its bearings 6 away from contact with the door, so that the latter may be operated. To lock the door, a reverse movement of the lever 15 takes place and the bar 7 descends, causing the bolt 4 to move outwardly into contact with the door 2. At the extreme downward movement of the bar 7 the outer vertical faces of the projections 11 drop into the recesses 12 in the bolt 40 having corresponding vertical faces, thus rendering the lock absolutely dead.

The whole front of the bolt and operating-bar is completely covered in, making it impossible for prisoners to get at the lock. The bell angle-lever and the connecting links or bars are also covered in, together with operating-lever, rendering the whole locking arrangement completely incased. The incasing plate 13 is held away from the bolt 4 and bar 7 by the bearings 6 and 9 and the strip or plate 26.

It should be understood that while my invention is peculiarly applicable to jail or cell locks it may be obviously applied to one or more doors for any other purpose. If great security were not desired, the construction could be modified as to the incasing of the parts to more or less extent. So, also, the number of the angular slots 10 and projections 11 may be modified. An operative lock can be made with only one of each. If desired, also, the outer vertical face of the projection 11 could be brought to bear against the inner vertical face of the bolt instead of dropping into the recess 12 to produce the dead posi-

tion of the bolt. The lever 15 could be otherwise locked than by inclosing it in a casing 18.

It is not desired to confine the invention to the details set forth and described.

The angular projections 11 and corresponding slots 10 may be transposed, so that the bolt may be provided with said projections and the bar with said slots, by a suitable modification.

Instead of the angular projections 11, working in corresponding slots 10, suitably-arranged ridges or pins might, if desired, be substituted for the slots 10 upon the bolt.

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

1. The combination of an elongated sliding locking-bolt of the character described, adapted to engage a door or keeper upon its longitudinal edge, bearings upon which said bolt may reciprocate, an operating-bar, an upwardly-extending slot and projection upon said bolt and bar at an acute angle thereto, bearings for said operating-bar whereby the bar may reciprocate at right angles to the movement of the bolt, an inclosing casing for the bolt and bar and means for operating said bar.

2. The combination of an elongated bolt, adapted to engage a door or keeper along its longitudinal edge, and having a lateral reciprocating movement, an operating-bar alongside the bolt having a longitudinal reciprocating movement, an upwardly-extending slot and projection upon said bolt and bar at an acute angle thereto, whereby a movement of the bar produces a movement of the bolt at right angles thereto, and means for operating said bar.

3. The combination of an elongated bolt having a lateral or transverse reciprocating movement, an operating-bar having a longitudinal reciprocating movement, an upwardly-extending slot and projection upon said bolt and bar at an acute angle thereto, for transversely moving the bolt upon the longitudinal movement of the bar, an operating link and handle, and a connection between said link and said operating-bar, for reciprocating the latter.

4. The combination of an elongated bolt adapted to engage a door or keeper along its longitudinal edge, and having a transverse lateral movement, an operating-bar alongside thereof having a vertical reciprocating movement, an upwardly-extending slot and projection upon said bolt and bar at an acute angle thereto, for respectively moving the same at right angles to each other, a stop connection between said bar and said bolt whereby the bolt is rendered inoperative or dead when locked against any direct movement of the bolt, and means for actuating said operating-bar.

5. The combination of an elongated transversely-reciprocating bolt having a series of

angularly-disposed slots therein, and a series  
of parallel faces in proximity to said slots, a  
longitudinally-reciprocating operating-bar  
having a series of projections extending up-  
5 wardly at an acute angle to said bar corre-  
sponding to said angular slots, said projec-  
tions having parallel faces adapted to engage  
said parallel faces on the bolt, and means for

reciprocating said bar and bolt at right angles  
to each other.

In testimony whereof I hereunto set my  
hand this 29th day of March, 1897.

RAYMOND D. YORK.

Witnesses:

B. V. VINCENT,  
CHAS. C. GLIDDEN.