L. M. HAM.
Prison-Lock.

No. 214,251. Patented April 15, 1879.

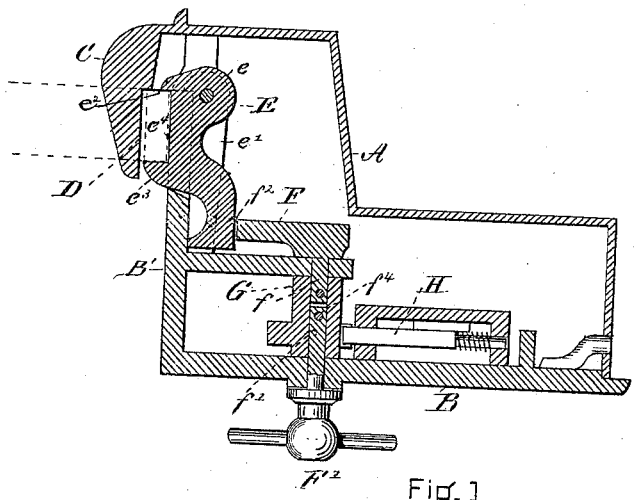

Fig. 1.

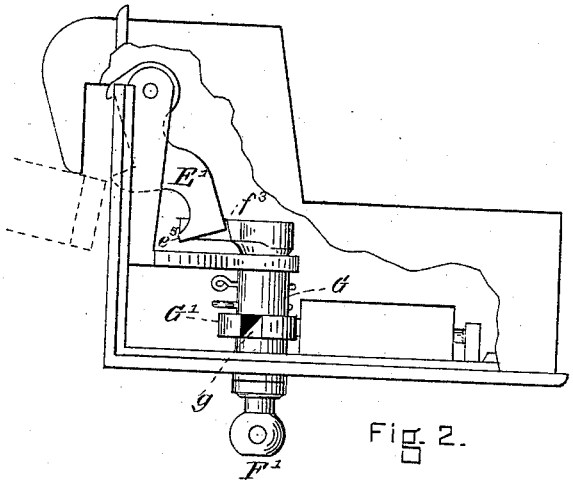

Fig. 2.

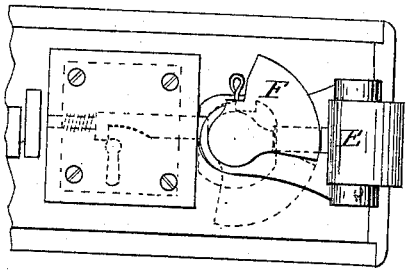

Fig. 3

WITNESSES.

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IMPROVEMENT IN PRISON-LOCKS.

Specification forming part of Letters Patent No. **214,251**, dated April 15, 1879; application filed January 17, 1879.

To all whom it may concern:

Be it known that I, LEMUEL M. HAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Locks for Cell-Doors, of which the following is a specification.

This invention has for its object the following-described improvement in locks for cell-doors.

Reference is had to the accompanying drawings in explaining the nature of my invention, in which Figure 1 is a horizontal central section, showing working mechanism of the lock. Fig. 2 is a plan, showing a portion of the casing removed to expose a portion of the working parts of the lock. Fig. 3 is a view further showing, in elevation and dotted outline, the operation of a portion of the working parts.

It is important to so construct prison-locks that they may be opened, without laying hold of the handle, by simply turning the key, in order that while the one hand shall be occupied in unlocking the cell-door, the other may be otherwise engaged, or ready for any emergency. It is also important that there be some automatic device or tell-tale to designate whether or not the cell-door is locked, and this device or tell-tale must be so arranged in relation to the cell-door and interior of the cell that it cannot be easily tampered with by the prisoner.

The casing A B is built into the masonry of the cell-door jamb, and the portion A is provided with the hooked guard C, which serves to prevent the bar D of the cell-door from being pried away from the fastenings when locked.

The locking device which I employ consists in the latch E, which is pivoted at e to the projections e^1, cast or otherwise secured to the portion B of the casing. This latch is provided with the projections e^2 e^3, which form two sides of the recess e^4, and embrace the bar D of the cell-door when the lock is closed. The projection e^3, when the door is locked, extends outwardly sufficiently far from the face B′ of the casing to almost come in contact with the end or inner wall of the hooked guard C. The catch is further provided with the arm E′, which projects inwardly therefrom, and is furnished with the stop e^5, which bears against the inner side of the face of the case B when the lock is closed.

The cam F, operated by the spindles $f f^1$, the sleeve G, and the handle F^1, bears upon the edge of arm E′ at f^2, and serves to close the catch when the handle is turned horizontally by moving the cam outwardly. A stop, f^3, upon the upper surface of the cam F prevents the arm E′ from being thrown back sufficiently far to become disengaged from the cam or sector, and also to prevent the projection e^3 from being thrown back from the face B^1 of the case, so that the opening in the case in which the catch oscillates is always so closed that the interior of the lock is not exposed to the attempts of the prisoner.

The sleeve G is provided with the disk G^1, which is recessed at g, as shown in Fig. 2, to form a catch, into which the bolt H shuts in locking.

Any bolt or latch may be employed, operated by any of the well-known means; but I prefer to use the spring-bolt, which shall close automatically into the catch g in locking the cam in a position to close the catch.

It will be observed that two spindles, $f f^1$, are used in lieu of one spindle, connecting the sector or cams with the handle, and that these spindles are riveted or pinned to the sleeve G. This construction is necessary in order that the handle may not be employed as a means for opening the lock by using it to revolve the cam sufficiently to clear the arm E′.

The rivet or pin f^4, fastening the spindle carrying the handle F′ to the sleeve G, must be made so small that any undue strain upon the handle shall cause the pin or rivet to be severed and allow the spindle to revolve freely in the sleeve without actuating the cam or sector.

The cam is so weighted that upon withdrawing the bolt H the handle F′ will automatically assume a vertical position. Of course any weight hung upon the spindles $f f^1$, or sleeve, or even upon the handle, when so arranged as to cause the said handle to assume a perpendicular position upon the withdrawal of the bolt, can be employed in lieu of the cam in accomplishing this automatic action. The handle thus becomes a tell-tale, for when the

cell-door is locked the handle is in a horizontal position, and when the bolt is withdrawn the handle automatically turns a quarter and becomes vertical. Thus an attendant guarding a line of cells can readily observe from one end of the line whether or not each cell-door is locked.

In operation the bar D of the cell-door is closed against the projection e^3 or the projection e^2. If it strikes the projection e^3 the catch is thrown back, and the bar upon striking the inner projection, e^2, throws it into place for locking, and holds it in that position until locked. The handle is then turned to a horizontal position, the bolt engages with the catch in the cam G′, and the cam F closes against the arm E and locks the catch in the recess within the projections e^2 e^3 and the inner walls of the guard C.

The door is unlocked by inserting the key and withdrawing the bolt H, the remainder of the operative parts acting automatically to unfasten the catch E.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the catch E, guard C, an automatic locking device, suitable connecting mechanism, and a handle which shall indicate by its position whether the cell-door is locked, substantially as described.

2. In combination with the catch E, automatically operated by the bar D of the cell-door, the guard C, and the weighted cam F, arranged to close against the catch after the same has been closed by said bar in locking the same only, and operated by the handle F¹, substantially as and for the purposes described.

3. In combination with the catch E, automatically operated by the bar D of the cell-door, a guard, C, the weighted locking-cam F, operated by the handle F′ in locking the catch only after it has been closed by said bar, and fastened in that position by the bolt H, substantially as and for the purposes described.

4. In combination with the weighted cam for locking the catch E after the same has been closed by the cell-door, the handle F′, suitable connecting mechanism, and a locking device for fastening said cam while the same is acting to lock the catch E, substantially as and for the purposes described.

5. The combination of the handle F¹ with the weighted cam F, for automatically turning said handle upon the unlocking of the door, substantially as and for the purposes described.

6. The combination of the cam F, with its spindle f, handle F′, with its spindle f^1, and sleeve G, riveted or pinned to said spindle, as described, all arranged to operate substantially as and for the purposes described.

7. The combination of the spring-bolt H, the cam F, sleeve G, pinned to the spindles $f f^1$, handle F′, and recess g, all arranged to operate substantially as described.

8. The combination of the catch E, provided with the arm E′, with the stop f^3 upon the cam F, all arranged to operate substantially as and for the purposes described.

9. A handle, F′, adapted and arranged to automatically change its position upon the unlocking of the lock, thereby indicating the position of the locking-catch.

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