

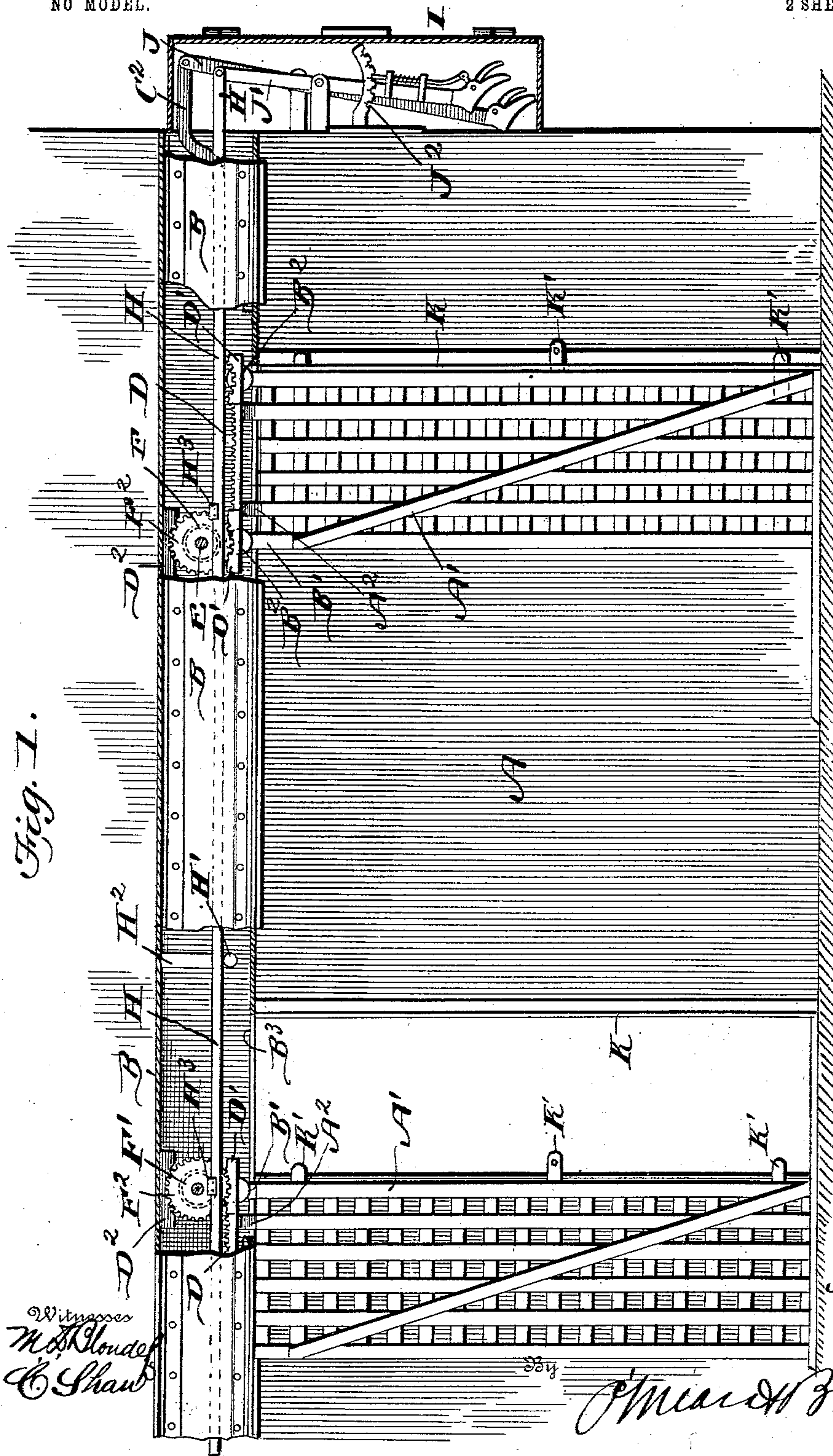
No. 753,150.

PATENTED FEB. 23, 1904.

J. J. LANKFORD.  
LOCK FOR CELL DOORS.  
APPLICATION FILED AUG. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Inventor

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Attorneys



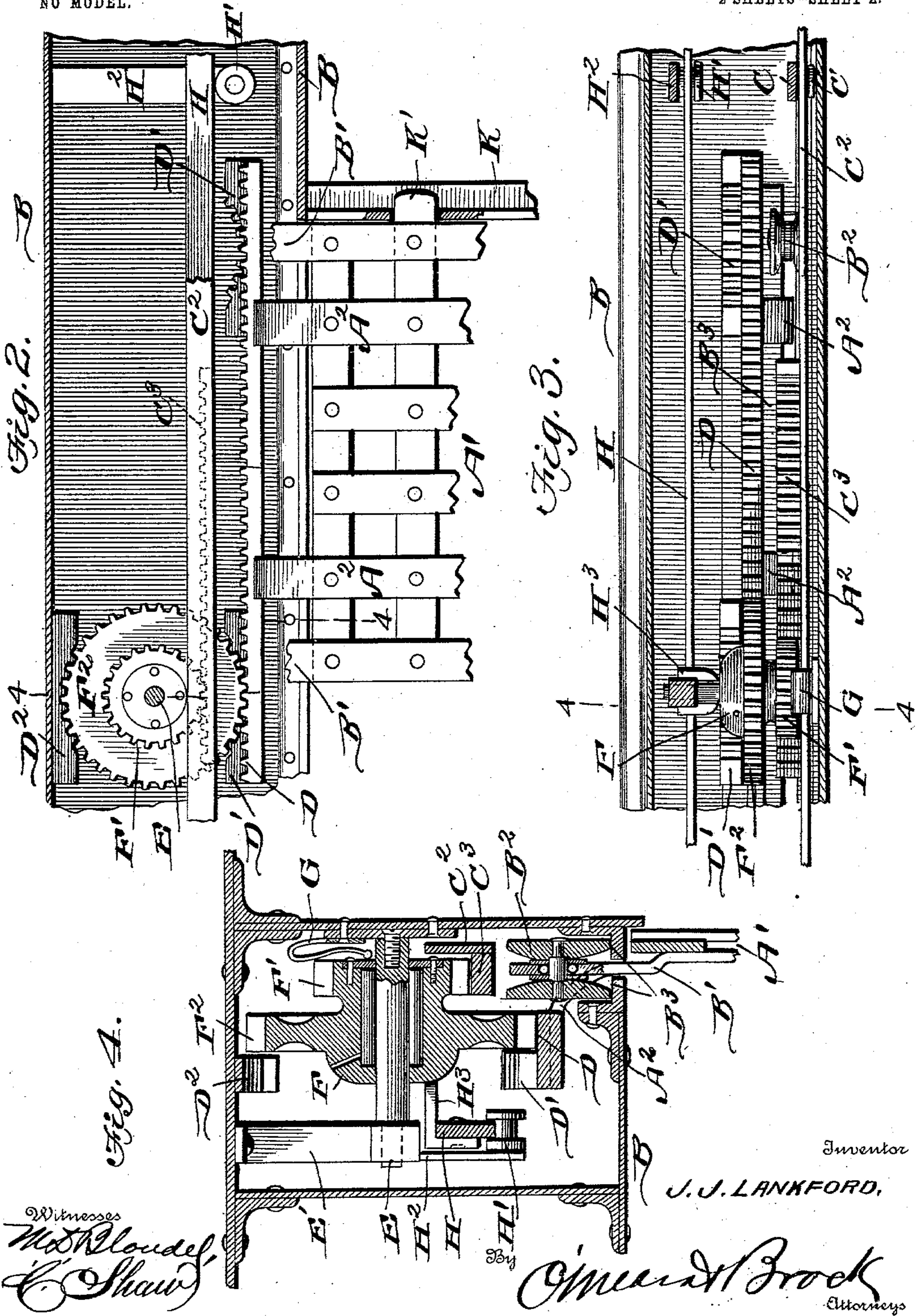
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# UNITED STATES PATENT OFFICE.

JEROME J. LANKFORD, OF ACCOMAC, VIRGINIA.

## LOCK FOR CELL-DOORS.

SPECIFICATION forming part of Letters Patent No. 753,150, dated February 23, 1904.

Application filed August 8, 1903. Serial No. 168,819. (No model.)

*To all whom it may concern:*

Be it known that I, JEROME J. LANKFORD, a citizen of the United States, residing at Accomac, in the county of Accomac and State of Virginia, have invented a new and useful Lock for Cell-Doors, of which the following is a specification.

My invention is an improvement in locks, and is especially designed as a locking device for cell-doors.

The object of my invention is to devise improvements in locks of this type whereby any particular cell-door can be locked or unlocked from without the prisoners' corridor, obviating the necessity of any extra locks on individual doors.

My invention consists in the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation, parts being broken away, showing my locking mechanism and connecting parts, one cell-door being shown locked in a closed position and the other locked in an open position. Fig. 2 is a detail side view, partly in section, showing my improvements. Fig. 3 is a plan view, the casing being in section, of parts shown in Fig. 2. Fig. 4 is a section on the line 4-4 of Fig. 3.

In the drawings, A represents the front wall of a row of cells, and A' the sliding doors adapted to close the doorways opening into the prisoners' corridor. Above the doorways extends a horizontal casing B, a portion of the front wall of this casing being broken away in Fig. 1. Hangers B' extend above the doors, being continuations of the vertical side bars, and in the hangers are journaled suitable shafts carrying rollers B<sup>2</sup>, one on each side of a hanger, the rollers traveling on parallel ledges B<sup>3</sup>, the hangers moving between said ledges. Within the casing are dependent hangers C, having rollers C' at their lower ends on which travel a horizontal bar C<sup>2</sup>, the bar being arranged adjacent the rear wall of the casing. Above the doors this bar has secured to its inner face a horizontal rack-bar C<sup>3</sup>.

On each door A' two of the vertical bars A<sup>2</sup> extend upward and inwardly between the

ledges B<sup>3</sup> and at their upper ends carry a horizontal rack-bar D. Adjacent each end of the rack-bar D the base of same is widened, extending inwardly, and on this extra width is formed a segmental gear D'.

A shaft E is secured at one end to the rear wall of the casing B adjacent each door and at its front end is held by a hanger E'. Rev-  
olubly journaled on each of these shafts is a sliding hub F, having the gears F' and F<sup>2</sup>, the first mentioned being in advance of the latter. A spring G is bent on itself and fastened at one end to the inner face of the rear wall of the casing above the shaft E, and the free end of the spring bears against the sliding hub F and normally holds it on the front portion of the shaft E.

A horizontal bar H slides vertically within the casing, traveling on rollers H', carried at the lower end of hangers H<sup>2</sup>. The bar H is arranged in front of the hubs F and carries cams H<sup>3</sup>, adapted to strike and slide the hubs to the rearward portion of the shaft.

Above each segment D' is arranged segment D<sup>2</sup>. These segments are so arranged that when the door is closed the pressure of the spring will slide the hub F along the shaft E, bringing the teeth of the gear-wheel F<sup>2</sup> into engagement with the segments D' and D<sup>2</sup>, which being fixed will lock the gears F' F<sup>2</sup> and hub F against rotation and also lock the rack-bar D against horizontal movement when the door is opened or closed.

The lever-box I is arranged in the jailer's corridor and contains two pivoted levers, the lever J, pivoted at its upper end to the bar C<sup>2</sup>, and the lever J', pivoted at its upper end to the bar H and engaging a rack-segment J<sup>2</sup>. The lever J works in a rack-segment similar to J<sup>2</sup> in the ordinary manner.

The operation of my device is as follows: When the doors are closed and locked, the gears F' will be out of engagement with the rack-bar C<sup>3</sup>. Assuming that it is desired to open the second door, the lever J' will be moved along its rack-segment, engaging the second notch. The cams H<sup>3</sup> are so spaced on the bar H that when the lever is thrown to the second notch of the segment the bar H will move sufficiently to bring the second cam H<sup>3</sup>



against the hub F, carrying the gear locking the second door. This cam forces the hub F along the shaft E and brings the gear F' into engagement with rack-bar C<sup>3</sup> and the gear F<sup>2</sup> into engagement with rack D. The lever J is now thrown, shifting the bar C<sup>2</sup> and rack C<sup>3</sup> and rotating the gear F', hub F, and gear F<sup>2</sup> and through the latter sliding the rack D and the second door, it being remembered that all the other doors remain locked, for the reason that the hubs and gears controlling them are still spring-held in locking position and only the second gear F' over the second door is in engagement with its rack D. The arrangement of gears, racks, and cams shown in Fig. 4 is duplicated over each door, and the distance between the cams H<sup>3</sup> is successively increased, so that to open, say, the sixth door the lever J' must be moved to the sixth notch to bring a cam into engagement with the hub of the gears controlling said door.

It will be obvious that many minor changes can be made in this construction without materially changing my invention. It is not essential, for instance, that the movement of the lever J' to the second notch should unlock the second door, as, for example, by changing the distance between the cams the parts may be so arranged that movement of the lever J' to the third notch would open the second door, and the exact notch to which the lever should be moved to open any particular door would of course be known only to the proper officials. It will also be obvious that when the lever J is moved along its segment and is brought into engagement with the same after the door is opened such engagement will lock the door in open position.

To the frame of each door is riveted an angled bar K, which has three openings or slots through which project extending ends of the horizontal slots K' of the door, as shown in the door to the right in Fig. 1. The central projection K' is the longest and is perforated, so that a padlock can be placed on the door, if necessary.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the kind described comprising a sliding door, a rack-bar attached to said door, a movable rack-bar independent of the door, a shaft transverse to the rack-bars, a hub sliding and rotating on the shaft, gears on said hub adapted to engage the rack-bars, respectively, means for sliding the hub and throwing the gears into engagement with the rack-bars and means for moving the independent rack-bar.

2. The combination with a door traveling on rollers carried by an overhead hanger, of a rack-bar above and connected to the door, a movable rack-bar independent of the door, a transverse shaft, a hub having a double gear

thereon sliding on said shaft, means for forcing the double gear into engagement with the two rack-bars, means for forcing them out of engagement with the rack-bars, and means for locking the gears against rotation when out of engagement with the rack-bars.

3. The combination with a door traveling on rollers carried by an overhead hanger, of a rack-bar connected with the door, a non-rotatable rack-segment connected to the rear side of said rack-bar, an independently-movable rack-bar, a shaft transverse to the rack-bars, a hub sliding on said shaft, gears fixed on the hub one of said gears adapted to mesh with the independently-movable rack-bar and the other adapted to mesh with the rack-bar connected to the door, a spring adapted to throw said gears out of engagement with the rack-bars and to hold one of them into engagement with the rack-segment, and a cam-bar adapted to slide the hub and hold the gears in engagement with the rack-bars.

4. A cell-door lock comprising a bar having cams thereon, a lever adapted to move said bar, a shaft, a hub carrying a plurality of gears said hub being movable on the shaft by the cams, a rack-bar adapted to be engaged by one of the gears, a lever adapted to move said rack-bar, a rack-bar adapted to be engaged and moved by the other gear, a slidable door, and means connecting the last-mentioned rack-bar to the door.

5. A cell-door lock comprising a casing having parallel ledges arranged therein and spaced apart, slidable doors having vertical bars extending upward between said ledges, a horizontal rack-bar supported by the vertical bars, segmental gears carried by the inner side of the said horizontal rack-bar, a shaft arranged in the casing adjacent each door and transverse to the rack-bar, a hub slidably arranged on the said shaft, a gear formed on the hub adapted to engage the rack-bar and the segmental gears, a spring adapted to normally hold the said gear in engagement with one of the segmental gears, hangers connected to the doors extending upward between the parallel ledges, rollers carried on each side of the hangers adapted to travel on the ledges, dependent hangers arranged in the casing, rollers carried by said hangers, a horizontal bar adapted to travel on said rollers, a rack-bar carried on the inner side of the last-mentioned bar adjacent each door, a second gear formed on the hub adapted to mesh with the last-mentioned rack-bar when the first-mentioned gear is in engagement with the first-mentioned rack-bar, means for sliding the hub on the shaft, and means for horizontally moving the last-mentioned rack-bar.

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Witnesses:

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S. R. BATEMAN.