No. 654,275. Patented July 24, 1900.

P. J. PAULY, JR.

LOCKING DEVICE FOR JAIL OR SIMILAR DOORS.

(Application filed Apr. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

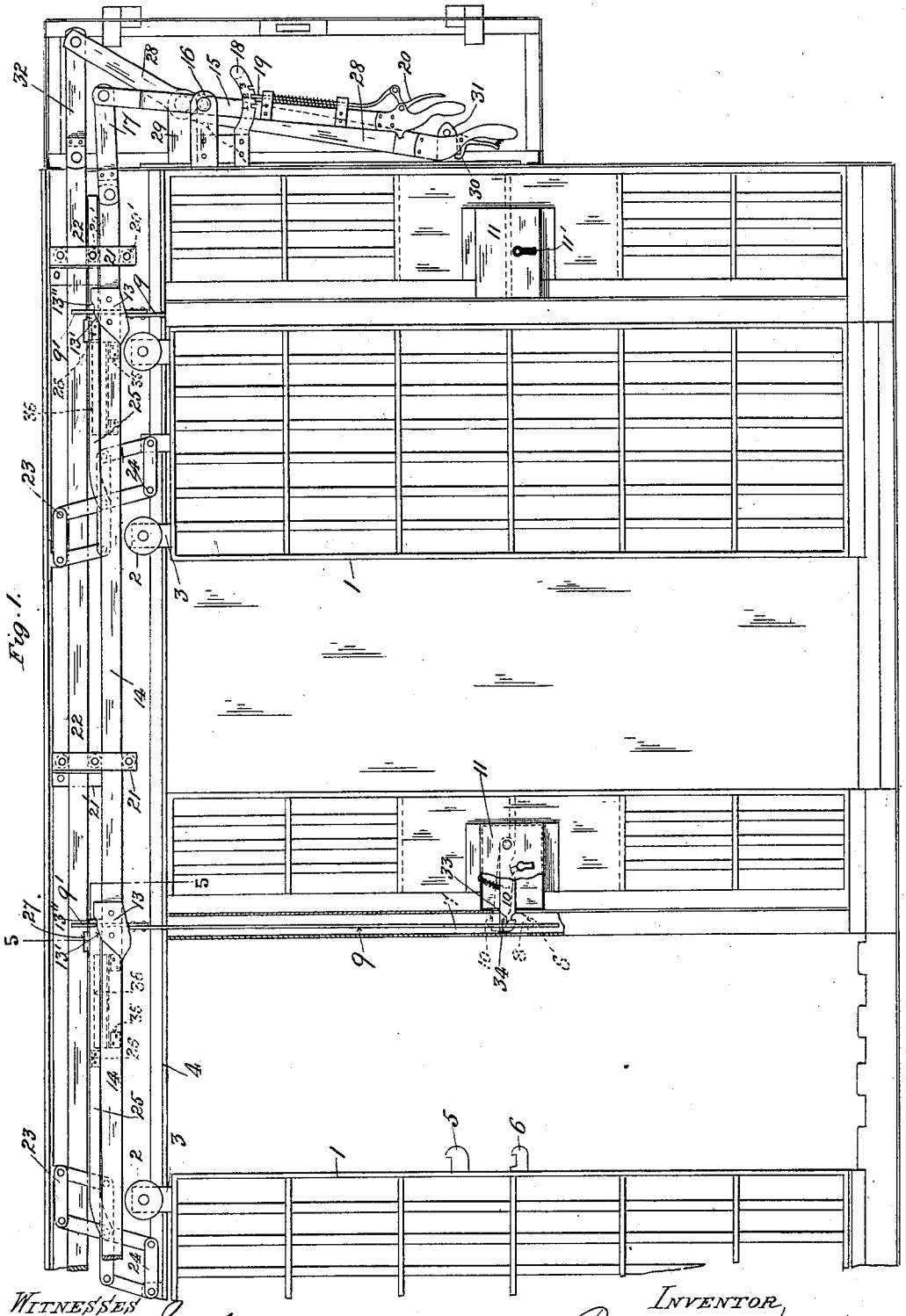


Fig. 1.

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Fig. 2.

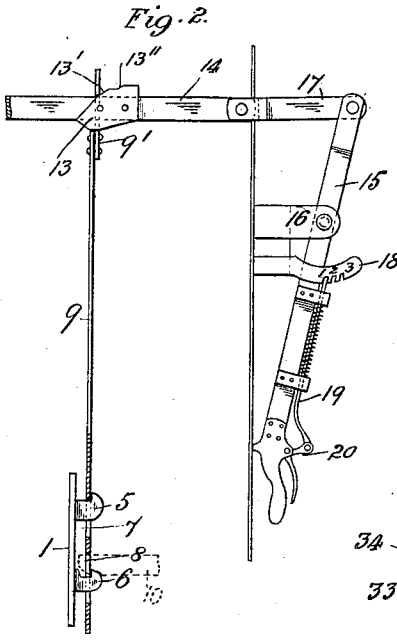


Fig. 4.

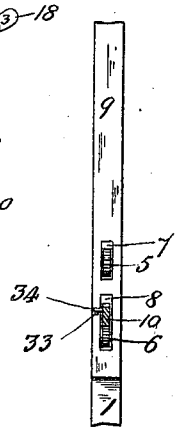


Fig. 3.

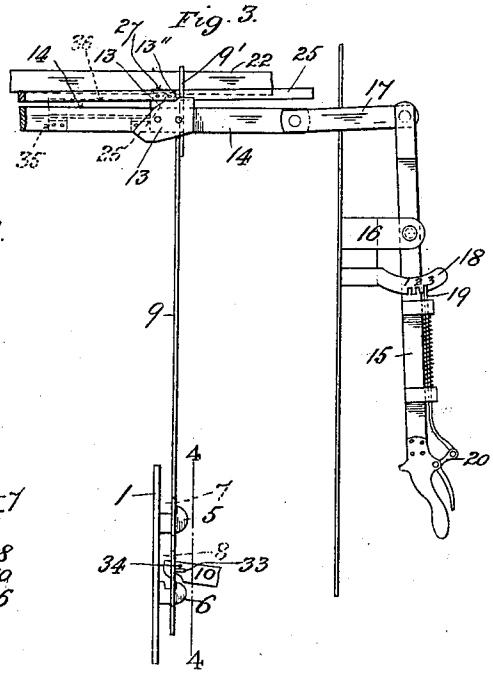


Fig. 5.

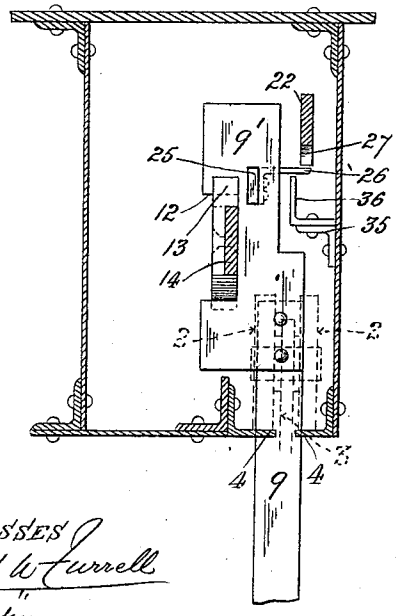
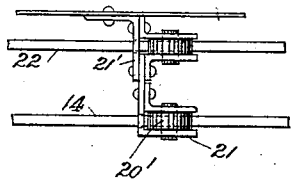


Fig. 6.



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UNITED STATES PATENT OFFICE.

PETER J. PAULY, JR., OF ST. LOUIS, MISSOURI.

LOCKING DEVICE FOR JAIL OR SIMILAR DOORS.

SPECIFICATION forming part of Letters Patent No. 654,275, dated July 24, 1900.

Application filed April 13, 1900. Serial No. 12,765. (No model.)

To all whom it may concern:

Be it known that I, PETER J. PAULY, Jr., a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Locking Devices for Jail or Similar Doors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in locking devices for jail and similar doors; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of two cells, showing my locking device in position to allow for the opening of any door, one of the doors being in fact shown in an open position. Fig. 2 is a diagrammatic view showing the relative position of the locking-bar, controlling-bar therefor, and cell-door for the dead-locked position of the latter. Fig. 3 is a similar view of the parts, showing the controlling-bar forced inwardly its full extent to completely release the door from its locking devices, and showing one end of the coupling-bar in engagement with the travel-bar by which the doors are operated. Fig. 4 is a section on line 4 4 of Fig. 3. Fig. 5 is an enlarged transverse section on line 5 5 of Fig. 1, with, however, the terminal plate of the locking-bar in full elevation, the section being taken through the boxing in which the several parts are confined; and Fig. 6 is a top plan view of the hangers or brackets carrying the rollers on which the controlling-bar and travel-bar are mounted.

The present invention is an improvement on the locking device shown and described in United States Letters Patent issued to Edwin Kolb under date of October 19, 1897, and numbered 591,850, and while it preserves the advantages inherent in the patented construction it possesses the additional advantages in that either a series of doors can be opened simultaneously by the jailer or any one door can be singled out and operated while the remaining doors are still locked.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents a sliding door suspended from rollers 2, carried by hangers 3 and riding on the ledges 4 4, as is usual in this class of jail-doors. Each door is provided with catches 5 and 6, adapted to pass through slits 7 and 8, respectively, of the gravity locking-bar 9, the catch 6 being adapted to engage (when the door is closed) the spring-actuated pivoted latch 10 of the door-lock 11, carried by the cell-wall, the latch being unlocked by a key inserted through the keyhole 11′, as usual. The locking-bar is mounted in front of the lock 11 in a suitable chamber of the cell-wall, as usual, the upper end of the bar terminating in an expanded portion or plate 9′, either riveted thereto or integral therewith. The outer edge of the plate 9′ is provided with a recess 12, whose upper and lower horizontal walls are adapted to be engaged by the corresponding upper and lower edges of a wedge or block 13, riveted to the outer face of a controlling-bar 14, adapted to be shifted longitudinally by means of a lever 15, pivoted to a bracket 16, projecting from the end wall of the series of cells, the connection between the lever and bar 14 being effected by a link 17. The position of the controlling-bar 14 and that of its series of blocks or wedges 13 is indicated by the numbers "1," "2," and "3" opposite the notches formed in the curved arm 18, serving as an indicator, which notches are automatically engaged by the spring-actuated rod 19, operated in one direction by the trigger 20, carried by the lever. The bar 14 is supported at intervals by rollers 20′, mounted in angle-brackets 21, projecting from the wall of the cell, the bar passing through openings formed in the walls of the brackets. (See Figs. 1 and 6.)

Like in the patented device above referred to, the present construction comprises a travel-bar 22, supported on rollers of the brackets 21′, the said bar 22 being mounted to one side and slightly above the bar 14, the horizontal distance between the two bars being sufficient to permit of the free play of the toggle-links 23 24, the extremities of which are pivotally secured to the ceiling of the cell and to the door, respectively, the same as in the patented construction. Likewise does the present construction contemplate a coupling-bar 25, whose one end is pivotally secured to the medial or connecting pivot of the toggle-links, the opposite end loosely sliding in an open-

ing formed for its reception in the upper expanded end 9′ of the locking-bar. Furthermore, as in the old construction, the coupling-bar in the present case is provided with a rearwardly-extending lip or lug 26, adapted to engage, when the bar has been raised to its highest position, the recess or depression 27, formed in the lower edge of the travel-bar, so that when so coupled and the travel-bar is set in motion the entire series of doors can be actuated. In the present case the travel-bar is moved in one direction or the other by means of a bent lever 28, pivoted to the bracket 29, the lever being locked in any position by the spring-actuated pawl 30, engaging the toothed arm 31, the connection between the lever and travel-bar being effected by the link 32.

Projecting from the inner face of the locking-bar and located to one side of the slit 8 thereof, which receives the door-latch 10, is a peg or lug 33, the said lug being adapted, when the locking-bar is being raised to its highest position, to engage the laterally-projecting pin 34, carried by the latch 10, and disengage the latter from the catch 6 of the door, as will presently more fully appear. The wedge 13 is provided with two upper inclined surfaces or edges 13′ 13″, separated by a horizontal edge, the locking-bar riding on said surfaces as the wedge 13 is moved inwardly or outwardly through the recess 12 of said bar.

In Fig. 1 of the drawings the lever 15 has been swung outwardly sufficiently to bring the rod 19 into engagement with the middle notch 2 of the arm 18. In this movement the controlling-bar has been shifted inwardly an amount sufficient to have caused the first inclined surface 13′ of the wedge 13 to pass under the upper wall of the recess 12, formed at the upper end of the locking-bar, and raise the latter vertically a distance represented by the perpendicular of a triangle of which the inclined edge 13′ forms the hypotenuse. This perpendicular distance is sufficient to force and raise the locking-bar to a position to cause the upper edge of the slit 7 to just escape the catch 5 of the door and permit the latter to be opened by hand upon the due raising of the latch 10 by a suitable key, as already explained. Thus it is apparent that by raising the locking-bar to the position indicated in Fig. 1 any door can be thrown open after disengaging the latch 10 from the catch 6 by means of a suitable key. (See dotted position of latch 10 in Fig. 1.) When the lever 15 is swung inwardly back to the notch 1, the wedge 13 is drawn outwardly, allowing the locking-bars to drop to their lowest position and dead-locking all the doors. (See Fig. 2.) When the locking-bar has been raised to the position indicated in Fig. 1, the said bar rests on the horizontal surface or edge between the inclines 13′ 13″, and for this position the peg 33 has been brought immediately under and practically in contact with the pin 34 of the latch 10. By now swinging the lever 15 to the third position (see Fig. 3) the wedges 13 will be forced inwardly the full distance, causing the inclines 13″ to raise the locking-bars to their highest positions, in which movement they will automatically raise the series of latches 10 sufficiently to disengage the latter from the catches 6 of the doors. At the same time the upward movement of the locking-bars to said highest position will have caused the lips 26 of the coupling-bars 25 to enter the recesses 27 of the travel-bar, thus coupling the latter to the entire series of doors, (see Fig. 3,) and by operating the travel-bar from the lever 28 the doors can be opened simultaneously in the manner of the patented construction above referred to.

Secured to the wall of each cell in a plane slightly below the travel-bar are angle-pieces 35, to which is secured an angle-bar 36. After any door has been either fully opened or closed by hand or by the travel-bar the locking-bar can always be dropped to its lowest position, in which movement the free end of the coupling-bar carried by said locking-bar will be lowered and the lip 26 thereof will be depressed to a position slightly below the upper edge of the vertical member of said angle-bar 36, as is obvious, the angle-bar under the circumstances serving as an additional locking device for the door when once closed or as a means for retaining the door locked in an open position when once opened, and thus preventing its closing by unauthorized persons, it being understood that the said angle-bar 36 is just long enough to allow the lip 26 of the coupling-bar to drop either in front of its forward end or behind its rear end, according as the door is closed or opened its full extent.

The diagrammatic view of Fig. 2 shows the wedge 13 fully withdrawn to allow the locking-bar to drop to its lowest position and dead-lock the door.

In Fig. 3 the wedge is shown forced to its full inward limit, the locking-bar being at the same time raised to its highest position, whereby it picks up the latch 10 of the lock, disengaging the same from the catch 6 of the door. In this position all the doors are coupled to the travel-bar and may be simultaneously opened by operating the lever 28 in the proper direction.

The enlarged sectional view in Fig. 5 shows the relative position of the parts for the intermediate position of the locking-bar—that is to say, the position corresponding to Fig. 1. It is obvious from this sectional view that should the operator lower the locking-bar 9 its full extent the lip 26 will drop behind the upper edge of the vertical member of the angle-bar 36 and prevent the closing of the door when once opened, as already above explained.

From the foregoing it is apparent that the controlling-bar may either raise the locking-bars sufficiently to disengage the catches 5 of

all the doors sufficiently to permit any door to be opened by hand or it may raise them to their full extent, thereby releasing all the latches 10 and simultaneously coupling the several doors to the travel-bar, whereby all the doors can be opened at one time by the manipulation of the lever 28.

It is apparent, of course, that minor changes may be made in the present construction without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. In a door and locking device therefor, a suitable door, a locking-bar for the same, an additional lock positively engaging the door for the locked position of the locking-bar, and means for disengaging the locking-bar from the door and permitting the opening thereof through said lock, substantially as set forth.

2. In a door and locking device therefor, a sliding door, a locking-bar for the same, an additional lock positively engaging the door for the locked position of the locking-bar, and means for disengaging the locking-bar from said door and permitting the opening of the latter through the medium of the lock, substantially as set forth.

3. In a door and locking device therefor, a suitable sliding door, a locking-bar for the same, an additional lock for said door, means for imparting an initial movement to said locking-bar and disengaging the same from said door, the locking-bar being adapted to effect a release between the door and lock upon a further movement thereof in the same direction, substantially as set forth.

4. In a door and locking device therefor, a suitable sliding door, a locking-bar for the same, an additional lock for said door, means for imparting an initial movement to said locking-bar and disengaging the same from said door, the locking-bar being adapted to effect a release between the door and lock upon a further movement thereof in the same direction, and means for actuating the door when so released, substantially as set forth.

5. In a door and locking device therefor, a sliding door, a travel-bar normally disconnected from the same, a locking-bar for the door, an additional lock for the door, means for imparting an initial movement to the locking-bar and disengaging the same from the door, intermediate devices between the locking-bar and travel-bar for coupling the door to the travel-bar upon a further movement of the locking-bar in the same direction, the locking-bar by such additional movement being adapted to effect a release between the door and lock, and means for actuating the travel-bar and door thus coupled thereto, substantially as set forth.

6. In a door and locking device therefor, a sliding door, a locking-bar, and lock for same, a travel-bar, toggle-links connected at one end to the door, and having their opposite ends fixed, a coupling-bar pivoted at one end to the toggle-links and having its opposite end movably connected to the locking-bar, means for imparting an initial movement to the locking-bar and disengaging the same from the door, the said locking-bar being adapted upon further movement in the same direction to effect connection between the travel-bar and coupling-bar, and to effect a release between the door and lock, and means for actuating the travel-bar and operating the door thus coupled thereto, substantially as set forth.

7. In a door and locking device therefor, a sliding door, a locking-bar for the same, a catch carried by the door and passing through a slit in the locking-bar, a lock having a latch adapted to engage a second catch carried by the door, a peg projecting from the locking-bar, a pin carried by the latch, means for imparting an initial movement to the locking-bar and disengaging the same from the first-mentioned catch, the peg on the locking-bar being adapted to engage the pin on the latch and disengage the latter from the second-mentioned catch, thereby leaving the door fully released and free to be opened, substantially as set forth.

8. In a door and locking device therefor, a sliding door, a locking-bar for same, an additional lock for the door, a controlling-bar, a block carried by said bar having a succession of inclined surfaces, the block passing through a suitable recess or opening formed in the locking-bar whereby upon a partial movement of the controlling-bar in one direction, the locking-bar will ride along the first incline and be moved sufficiently to effect a disengagement between itself and the door, and upon further movement of the controlling-bar the locking-bar will ride along the second incline and be moved to its full extent, and means interposed between the locking-bar and the locking mechanism of the lock for effecting a release between the door and lock upon such final movement of the locking-bar, substantially as set forth.

9. In a door and locking device therefor, a sliding door, a travel-bar, toggle-links pivotally connected to the door and ceiling of the cell respectively, a locking-bar, a coupling-bar having one end pivotally secured to the toggle-links, and the opposite end passing freely through the locking-bar, the travel-bar, having a recess formed therein, a lug projecting from the coupling-bar and adapted to engage said recess for one extreme position of the locking-bar, an angle bar or plate carried by the cell in such position as to permit the lug secured to the coupling-bar to drop below the upper edge of either end of the angle-bar when the locking-bar is allowed to drop to its lowest or other extreme position, thereby additionally locking the door be the same fully closed or open, substantially as set forth.

10. In combination with a series of sliding doors, a locking-bar for each door, a travel-bar normally disconnected from said doors, a

controlling-bar mounted parallel to the travel-bar, a series of blocks having inclined upper surfaces for the support of the locking-bars, the latter being raised or lowered according to the direction in which movement is imparted to the controlling-bar, a coupling-bar between each door and travel-bar adapted to effect connection between said travel-bar and door when the locking-bar is in its highest position, or when resting at the highest point of the upper incline of the block, means for actuating the travel-bar, and means for operating the controlling-bar and indicating the position of the blocks carried thereby, and hence that of the locking-bars controlled by said blocks, substantially as set forth.

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

PETER J. PAULY, JR.

Witnesses:
EMIL STAREK,
G. L. BELFRY.