Jan. 23, 1951 J. E. CREECH 2,539,345

CELL DOOR CONSTRUCTION

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Fig. 1.

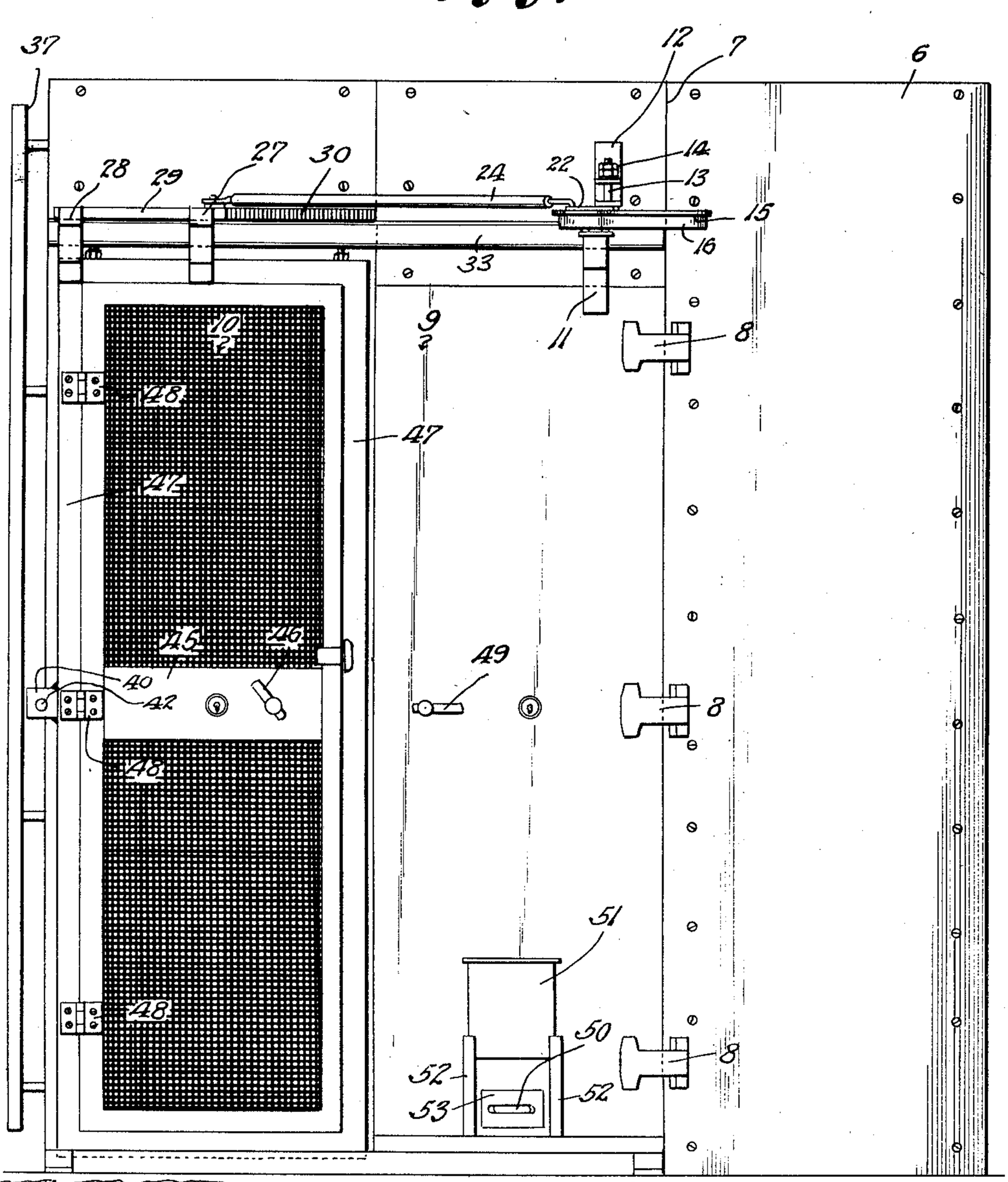

Fig. 9.

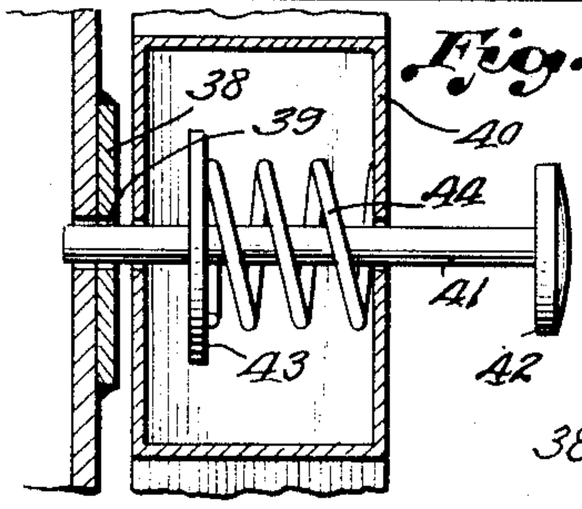

Fig. 10.

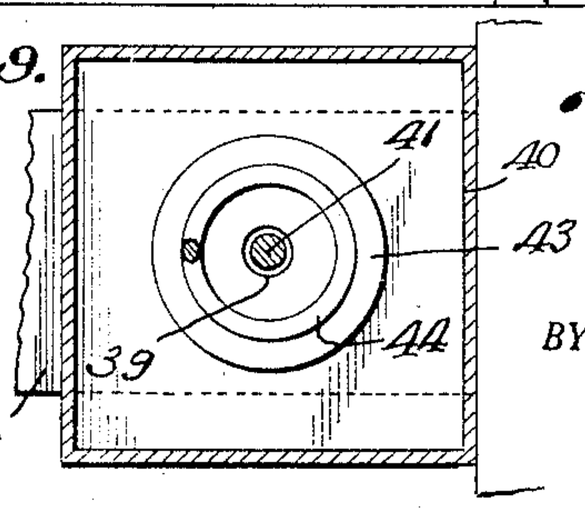

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Fig. 2.

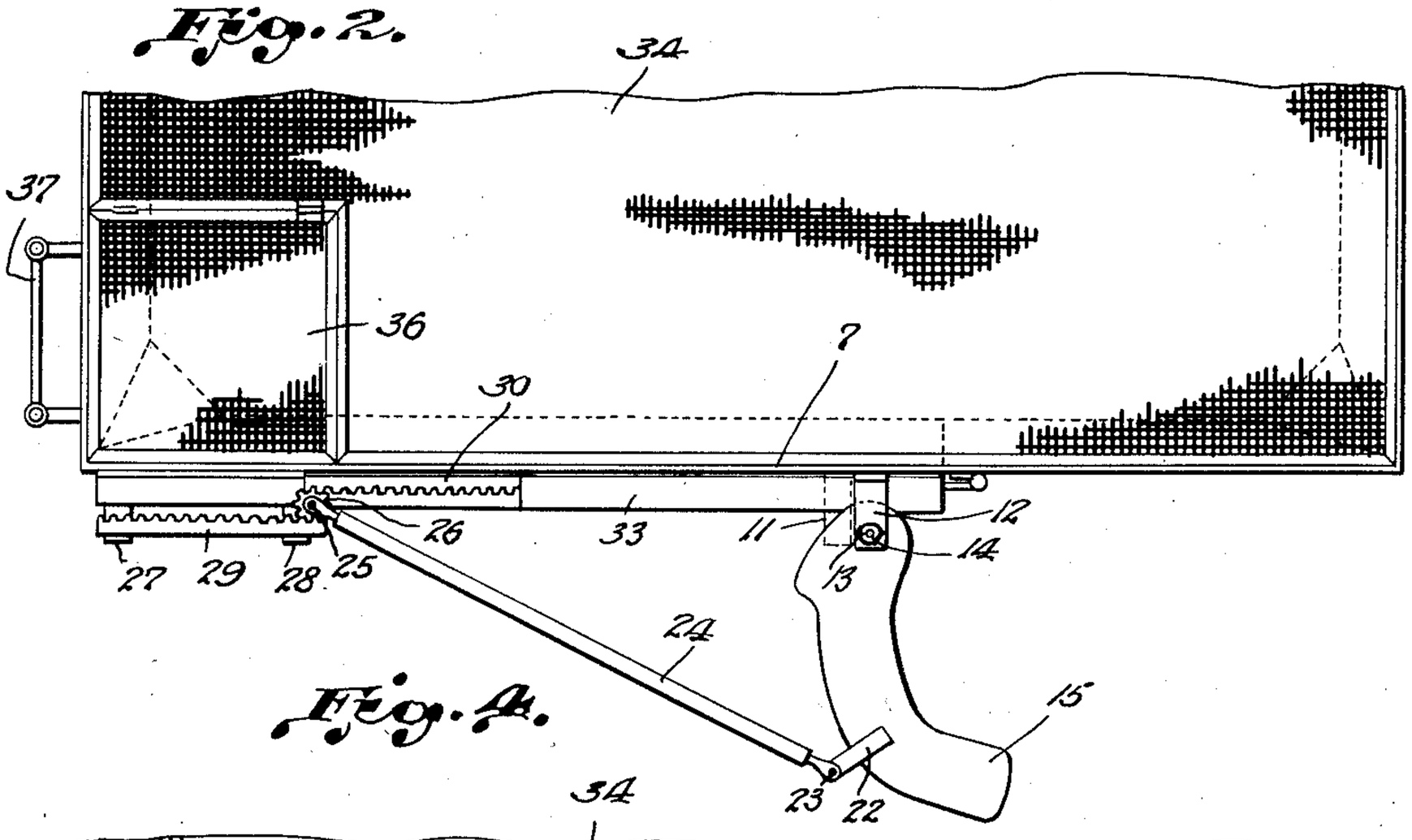

Fig. 4.

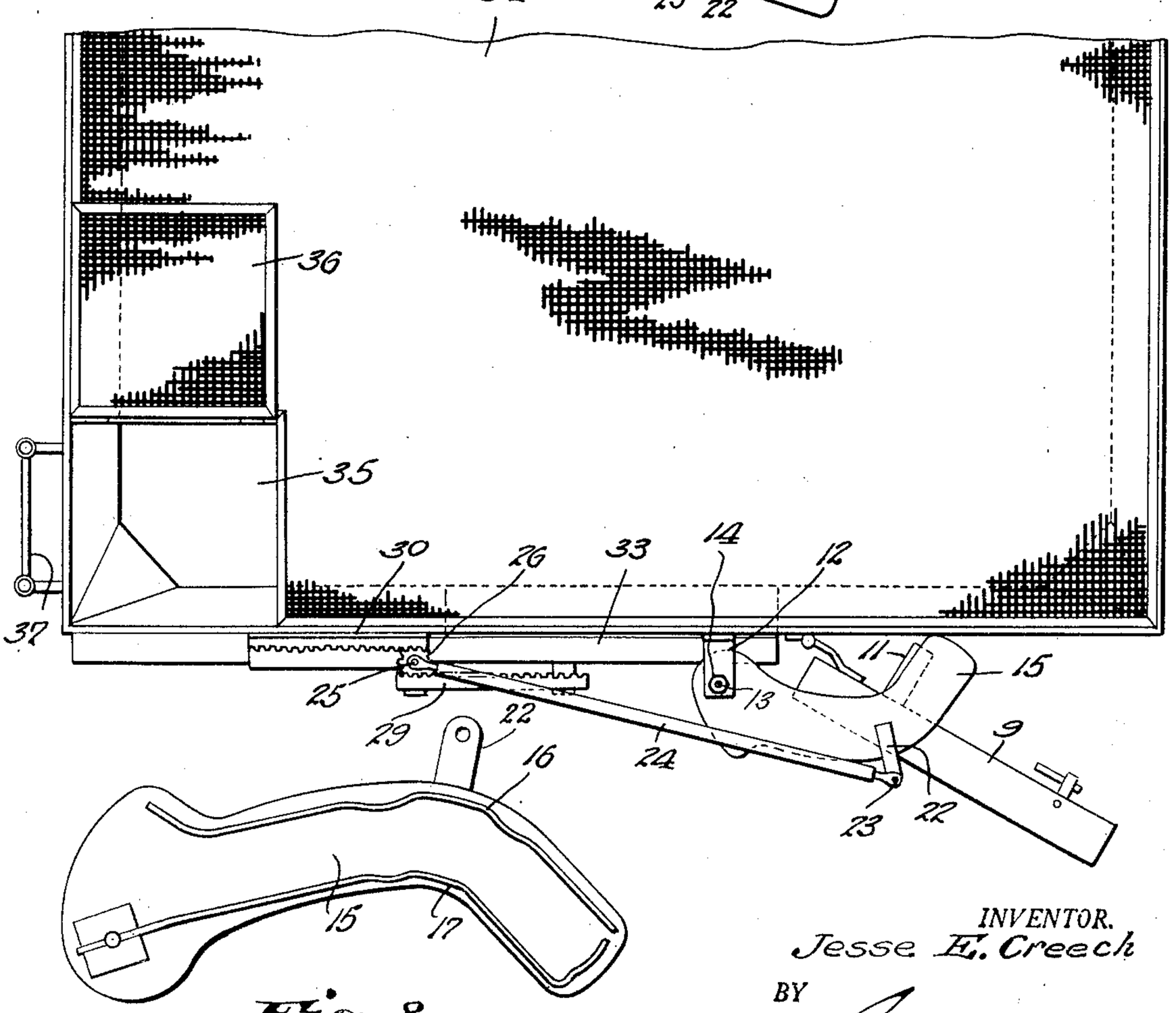

Fig. 8.

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Fig. 3.

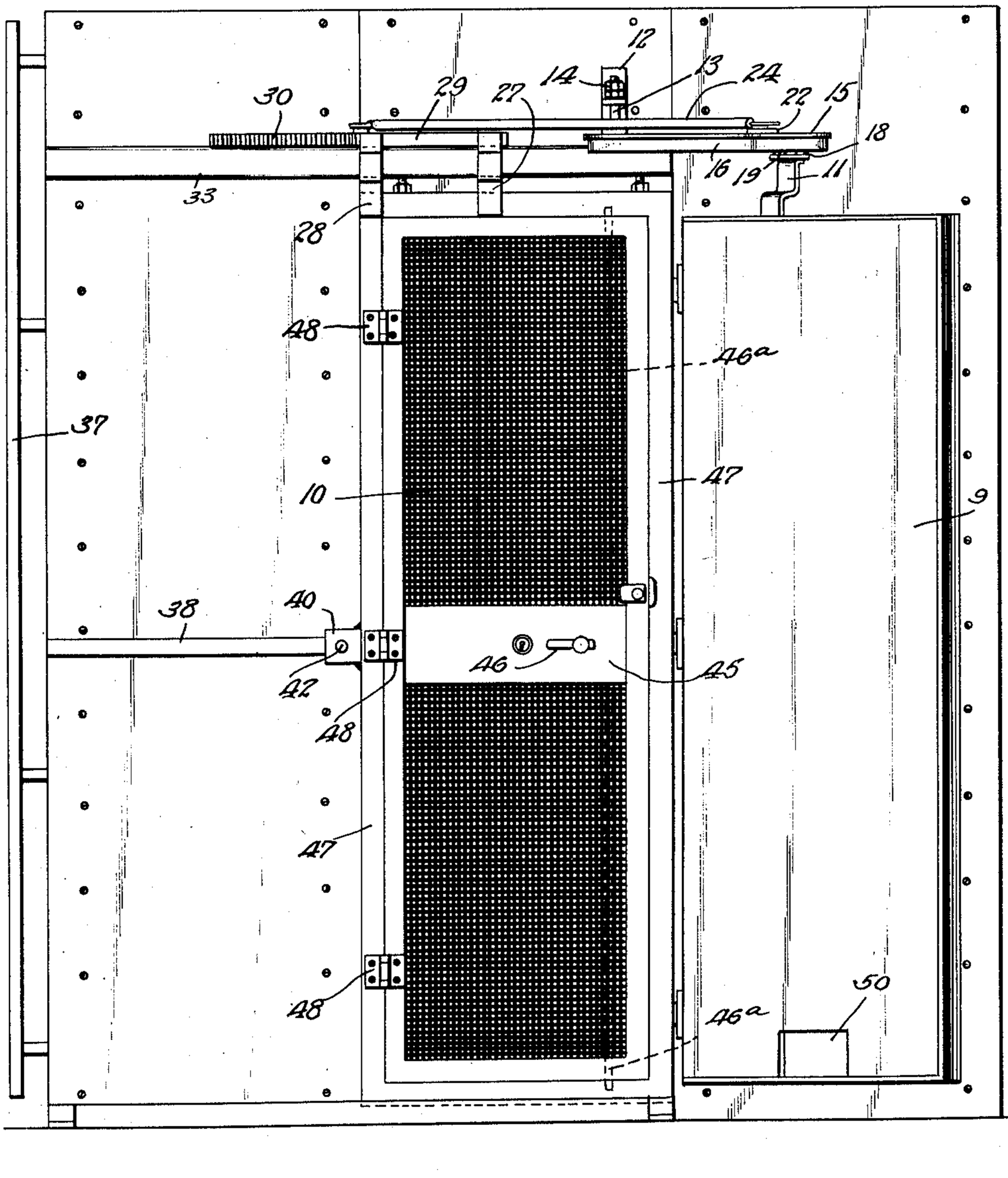

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Fig. 5.

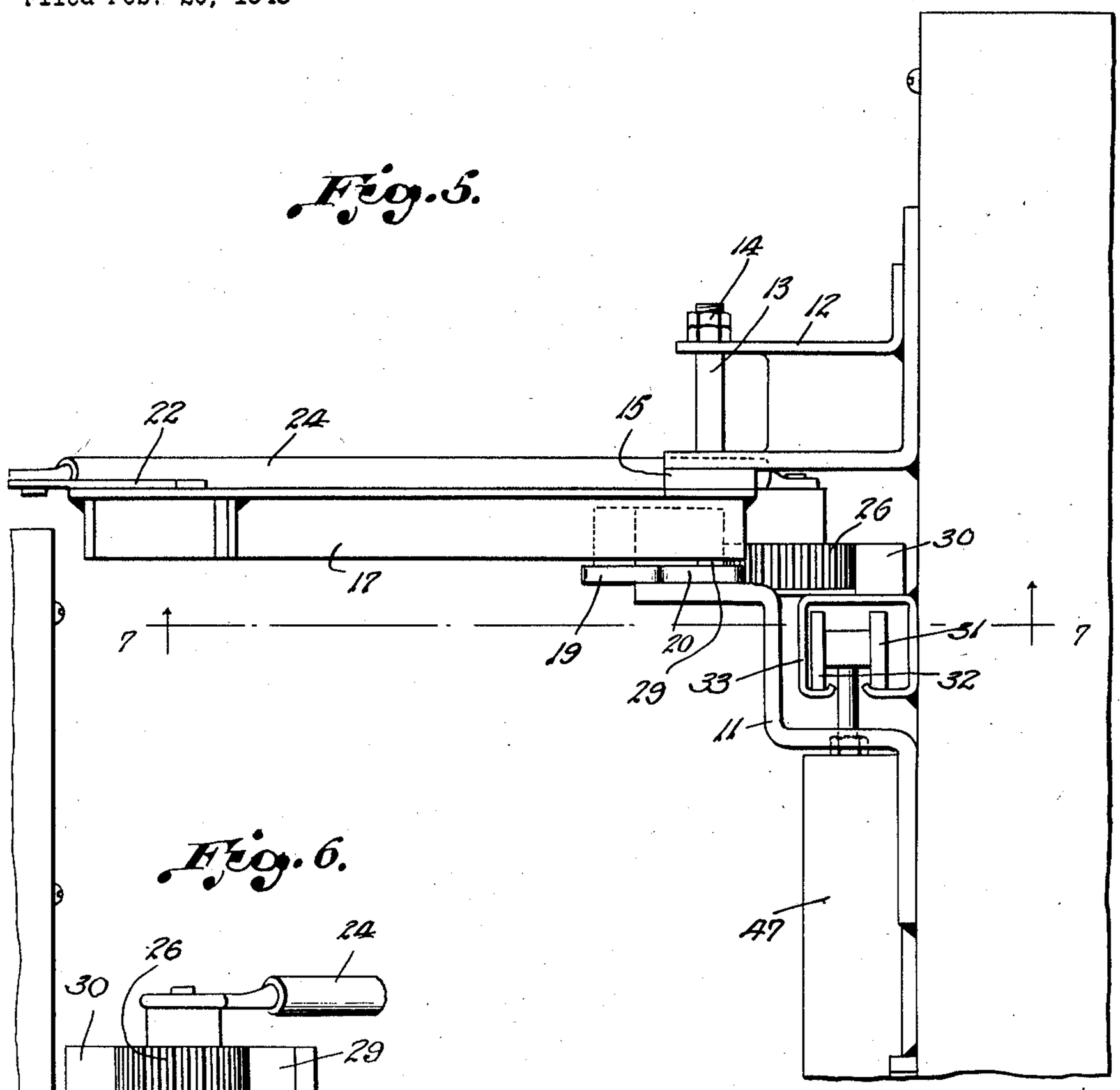


Fig. 6.

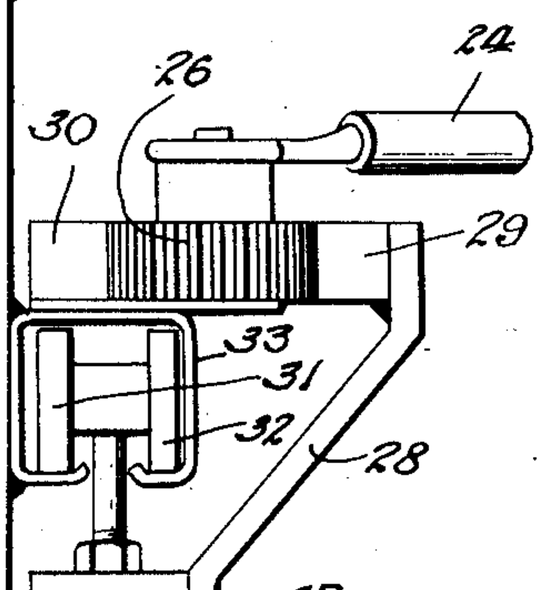
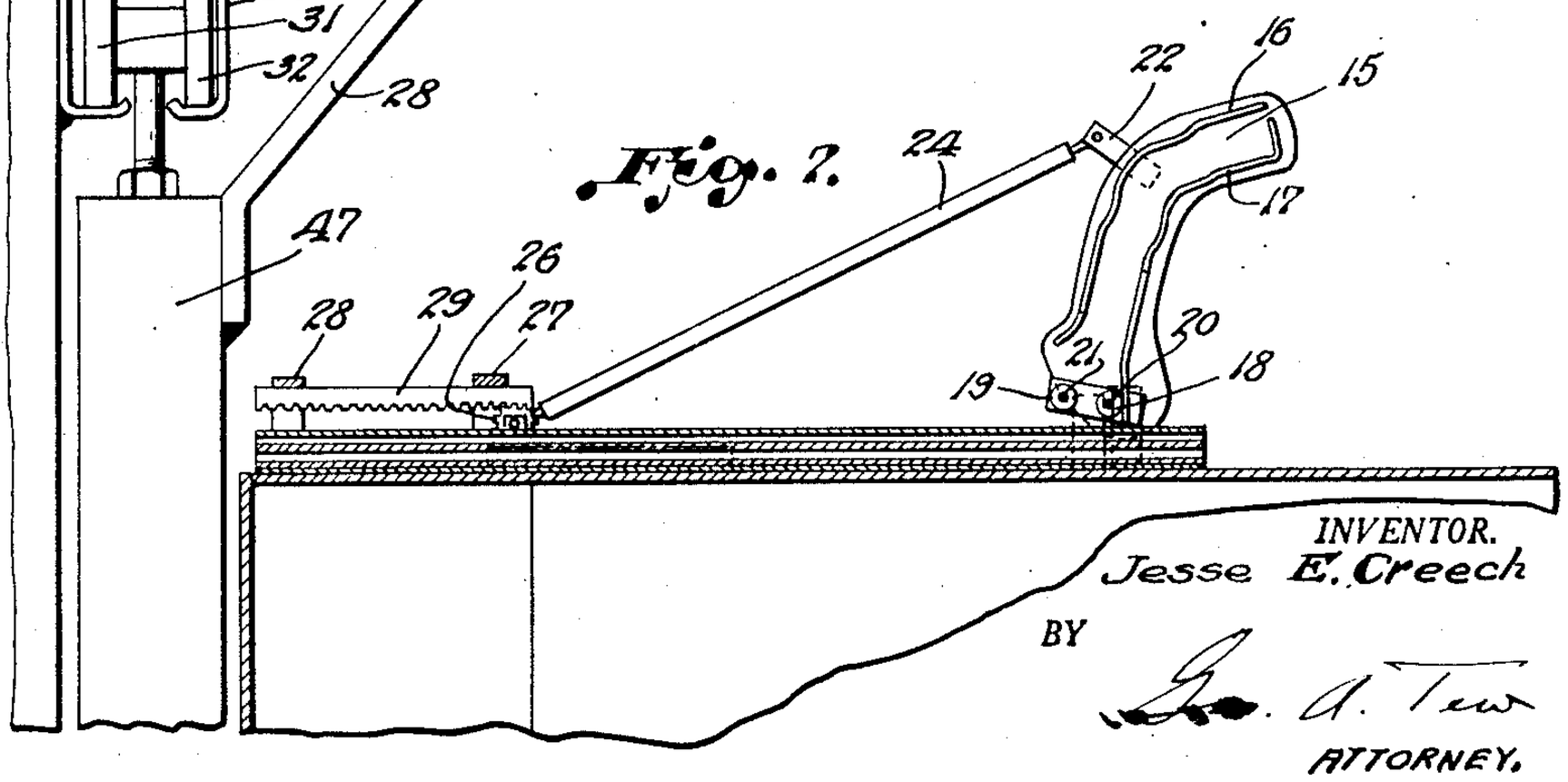


Fig. 7.



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UNITED STATES PATENT OFFICE

2,539,345

CELL DOOR CONSTRUCTION

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Application February 20, 1948, Serial No. 9,706

3 Claims. (Cl. 189—7)

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This invention relates to a cell door construction, and more particularly to a door construction for a cell having its inner surface padded, and therefore suitable for the confinement of violent prisoners and mental patients.

One of the main objects of the invention is to provide a dual door construction, one of the doors being solid, and the other door being constructed of a heavy screen mesh, the two doors being connected in such a fashion that upon the operation, that is opening, or closing of the main or solid door the other or heavy screen door or barrier is automatically moved into position to close the entrance to the cell.

Another object of the invention is to provide a solid door and a heavy screen door or barrier, the solid door being provided with a cam track mechanism, whereby when the solid door is swung or, during the course of its opening movement, the screen door or barrier is gradually moved to cover the opening, the doors operating in such unison so that the space left open is never sufficient for a prisoner or the like to escape.

Another object of the invention is to mount the screen door or barrier in a solid frame, whereby when the solid door is opened, the barrier door is adapted to be unlatched for access to the interior of the cell.

A further object of the invention is to provide a feed opening in the lower portion of the solid door through which the prisoner or patient can be fed without the possibility of escape.

Another object of the invention is to provide the cell with a heavy screen wire top, said top having an opening therein whereby access may be had to the cell at its uppermost portion.

The invention is illustrated in the accompanying drawings in which:

Fig. 1 is a front elevational view showing a portion of the cell and the solid and screen doors, the solid door being shown in closed position;

Fig. 2 is a partial top plan view looking down on the cell showing the solid door in closed position;

Fig. 3 is a front elevational view showing the solid door open and the screen door moved into place to close the cell opening;

Fig. 4 is a partial top plan view showing the solid door in open position and the screen door moved to its closed position;

Fig. 5 is a partial vertical view looking towards the right hand side of Fig. 2;

Fig. 6 is a partial vertical view looking toward the left hand side of Fig. 2;

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Fig. 7 is a partial view looking upward showing the cam track and its operating mechanism;

Fig. 8 is a bottom view of the cam track member;

Fig. 9 is a section through Fig. 1 showing the locking means for the screen door; and

Fig. 10 is a front view partly in section showing the locking pin.

The invention is illustrated in the accompanying drawings in which like numerals indicate similar parts throughout the various views.

Referring especially to Fig. 1 a portion of the front of a cell is indicated at 6, said cell being provided with an opening 7, said opening having hinged thereto as by the hinges 8 a solid door 9. The front portion of the cell is also provided with a heavy screen door or barrier 10, which will later be described, which closes the opening 7 upon pivotal movement of the solid door 9. The door 9 has attached thereto an offset bracket 11, said bracket being welded to the outer surface of the door relatively close to its hinged side. Welded to the outer portion of the cell and just above the opening is a double bracket 12 having positioned through its outer end a bolt 13 provided with a nut 14, the lower end of the bolt engaging a cam track member 15 at its inner extremity, whereby the cam member is adapted to be moved about the bolt 14 as a pivot. The cam member 15 is provided with downwardly extending track flanges 16 and 17, the said track members being adapted to engage rollers 18 and 19, said rollers being freely mounted on pins 20 and 21 extending upwardly from the top portion of the bracket 11. The cam member 15 also has welded thereto on its upper surface a bracket 22, said bracket having attached to its outer end as by a pin or the like 23, a rod 24 having a flattened end for engagement with the pin 23. The rod 24 extends from the bracket 22 to pinned engagement at 26 with a pinion 26. The screen door 10 has welded to its outer surface brackets 27 and 28, said brackets carrying a rack member 29 securely fastened thereto. Welded to the outer surface of the cell is a complementary rack member 30, and as it will be seen the pinion 26 is adapted to move within the confines of the respective racks, during the operation of opening and closing the main or solid door. It will be readily understood that in the movement of the solid door 9 to its open position the pinion 26, by the pull of the rod 24, and its engagement with the stationary rack 30 will at the same time engage the rack 29 and cause the screen door or barrier 10 to move to a position to cover the open-

ing, and such movement of the door 10, that is its rate of movement will be controlled by the contour of the cam track 17 and the engagement of the roller 18 therewith. The cam tracks 16 and 17 are so fashioned as to cause the screen door in its initial movement to move rather slowly, but upon the further movement of the door 9 the track 17 is so shaped that we have a fast closing of the heavy screen door or barrier 10, and in this manner the cell opening is substantially covered at all times.

As will be noted the barrier 10 is mounted at its upper part on rollers 31 and 32, said rollers moving in a track member 33, said track member being welded to the front portion of the cell.

The top of the cell, being of a heavy screen as indicated at 34 is provided with an opening 35 closed as by a swinging door 36. The cell is provided adjacent one side and leading up to the top thereof with a ladder 37, whereby, in the event that it is desirable to wash the patient, the attendant takes a hose, for example, up the ladder 37, opens the door 36 and is able thereby to give violent patients a warm shower bath.

The front of the cell has welded thereto a lock bar 38 which is provided near one end thereof with a bolt opening 39, the barrier or screen door frame having welded thereto a casing 40, said casing having mounted for movement therethrough a locking bolt 41, said bolt being provided with an operating head 42 and also having rigidly mounted thereto within the casing a washer 43, and a coil compression spring 44 mounted between the washer 43 and the inner surface of the outer wall of the casing 40 whereby, the locking pin 41 is normally urged into locking position within the recess 39 in the locking bar when the screen door is moved to a position to cover the opening.

The screen door or barrier 10 has a solid member 45 extending across the center thereof, the same being provided with the usual latching mechanism 46*a* which is operated as by handle 46. The barrier is further mounted in a solid frame 47 to which it is pivoted as by hinges 48, and it will be readily understood that in the movement of the screen or barrier door the entire frame 47 also moves.

The solid door 9 is likewise provided with a lock operating handle 49 said handle operating a usual and well known locking mechanism not shown. The door is provided with a small feed opening 50 formed in the lower portion thereof and adapted to be closed as by a sliding door 51 movable in guides 52 along the outer surface of the door. The door 9 also carries a plug 53 which is removable to give access to the opening 50 for serving the patient.

In the operation of the device, assuming that the solid door 9 is in its closed position and the heavy screen door or barrier 10 moved to its stored position adjacent the front side of the cell, as disclosed in Fig. 1, the attendant unlocks the main door by the handle 49, and in moving the same toward its open position as seen in Fig. 3 the bracket 11 which is welded to the door 9 and provided with cam engaging rollers 18 and 19 is moved, the rollers engaging the cam surfaces thereby swinging the cam member 15 on its pivot 13 to the position shown in Fig. 4 for example, the bracket 22 being carried by the cam plate 15 pulls the rod 24 to the right thus causing the pinion 26 to rotate in a counterclockwise direction, whereby the pinion in engagement with the rack 29 forming a stationary part of the door 10

moves the door or barrier 10 to the right, such movement being determined by the contour of the cam track 17, and thus it will readily be seen, that due to the contour and shape of the cam track 17, as the door 9 is moving to its open position the barrier 10 is sliding to close the opening left by the movement of the door 9, and the cam track 17 is so fashioned that the heavy screen door 10 moves to cover the opening at such a rate that the opening is never large enough for the possibility of the escape of the patient. In the operation of closing the door 9 the cam roller 19 engages the track member 16, and as the door 9 is being moved to closed position the rod 24 is being moved to the left, the pinion 26 moving in a clockwise direction and engaging the rack 29 moves the door or barrier 10 lengthwise across the face of the cell to its stored position, and the contour and shape of the cam flange 16 is so fashioned that at no time during the closing operation of the door 9 will the opening left by the screen door or barrier 10 be of such a size as to permit the escape of the patient. The door 9 is provided at its lower end by a feed opening whereby feed can be passed into the patient from time to time as desired.

For locking the heavy screen door or barrier 10 in a position across the opening and making it impossible for one within the cell to have access to said lock, a bar 38 is welded to the front surface of the cell and is provided adjacent one end with a hole or opening which is adapted to receive the locking bolt 41 when the frame of the barrier 10 is moved to its extreme position to the right.

The invention is not limited to the exact construction shown but is capable of variation within the scope of the following claims.

I claim:

1. In a cell door construction in combination with a cell having a door opening therein, a swinging solid door and a slidable barrier door for closing said door opening, the barrier door being simultaneously moved across said door opening as the swinging door is swung to open position, a pivoted cam track member mounted on the cell above the swinging door, a cam track engaging member mounted on the swinging door and engaging and moving the cam track member when the door is swung, an operating rod having one end pivotally connected to the cam track and movable with the same when the latter is moved, a pinion on the opposite end of the operating rod, a fixed rack mounted on the cell above the barrier door, and a second rack carried by the barrier door and oppositely disposed to the fixed rack, said pinion on the operating rod engaging both racks, whereby when the swinging door is swung to open position the cam track member is moved about its pivot to move the operating rod to cause the pinion to rotate to simultaneously move the sliding barrier door across the door opening.

2. The combination recited in claim 1, and a guide track for the sliding door mounted on the cell above said door and rollers mounted on the sliding door and engaging in said track.

3. A combined door and screen barrier for a door opening in a cell or the like, comprising in combination a solid door pivoted to said door opening, a cam track pivotally mounted above said door, a cam engaging member fixed to said solid door and engaging said cam track to move the same when the door is swung, an operating

rod having one end fixed to the cam track and its opposite end being provided with a pinion, a slidable screen barrier mounted on a track and slidable to close the cell door opening simultaneously with the movement of the pivoted door, a pair of oppositely disposed racks, one fixed to the cell wall and the other movable with the slidable barrier, said pinion engaging between the two racks, whereby movement of the pivoted door moves the cam track about its pivot thereby moving the operating rod the pinion being rotated by the racks as the operating rod is moved to simultaneously move the screen barrier across

the opening in proportion to the movement of the solid door.

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