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Butt

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[45] **Oct. 21, 1975**

[54] **LOCKING AND UNLOCKING MECHANISM FOR HINGED DOORS**

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[73] Assignee: **Stewart-Decatur Security Systems, Inc.,** Covington, Ky.

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[52] **U.S. Cl.** **49/16;** 49/18; 70/264; 292/DIG. 72

[51] **Int. Cl.²** **E05B 47/00**

[58] **Field of Search** 49/15, 16, 17, 18; 70/262, 70/263, 264

[56] **References Cited**

UNITED STATES PATENTS

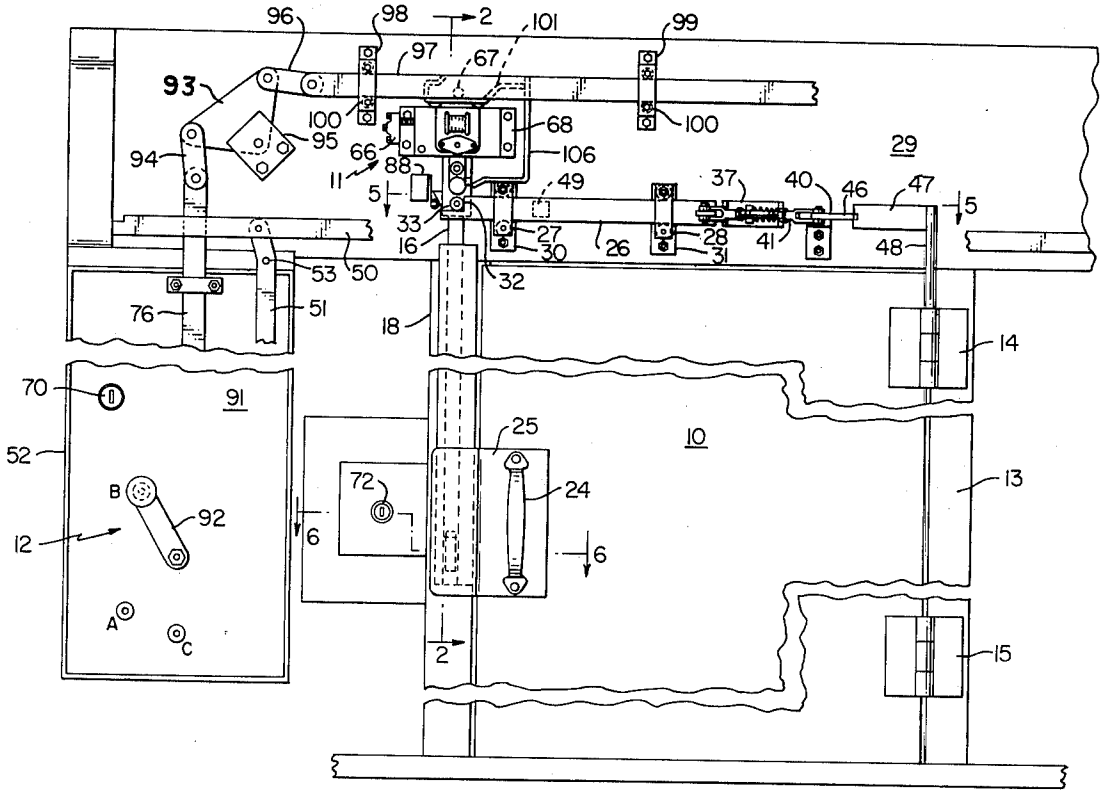
2,417,167	3/1947	Johnston	49/16
3,837,117	9/1974	Butt	49/18

Primary Examiner—Albert G. Craig, Jr.
Attorney, Agent, or Firm—John G. Schenk

[57] **ABSTRACT**

A locking and unlocking mechanism to secure a hinged door has three control positions of the controlling mechanism. In the electrical control condition the door may be opened either by an operator at a remote position or individually from within the closed room or from the outside of the closed room. The hinged door is spring loaded so that when the control mechanism is in either electrical or release control position the door may be biased open. A deadlock control position insures that the opening mechanism is prevented from moving so as to secure the door in the locked position. Direct operational links connect the control mechanism with the securing mechanism.

15 Claims, 7 Drawing Figures



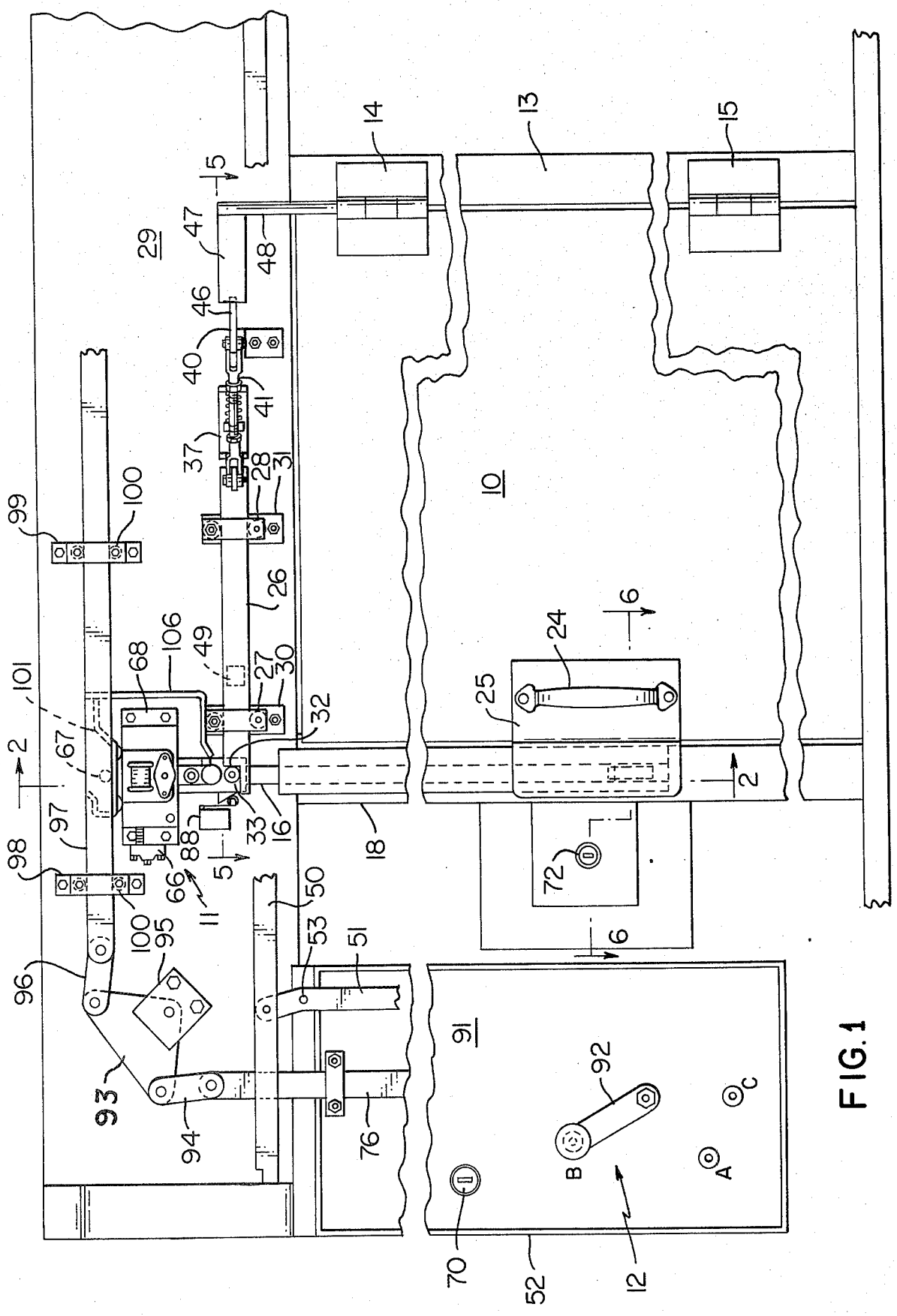

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FIG. 1

FIG. 2

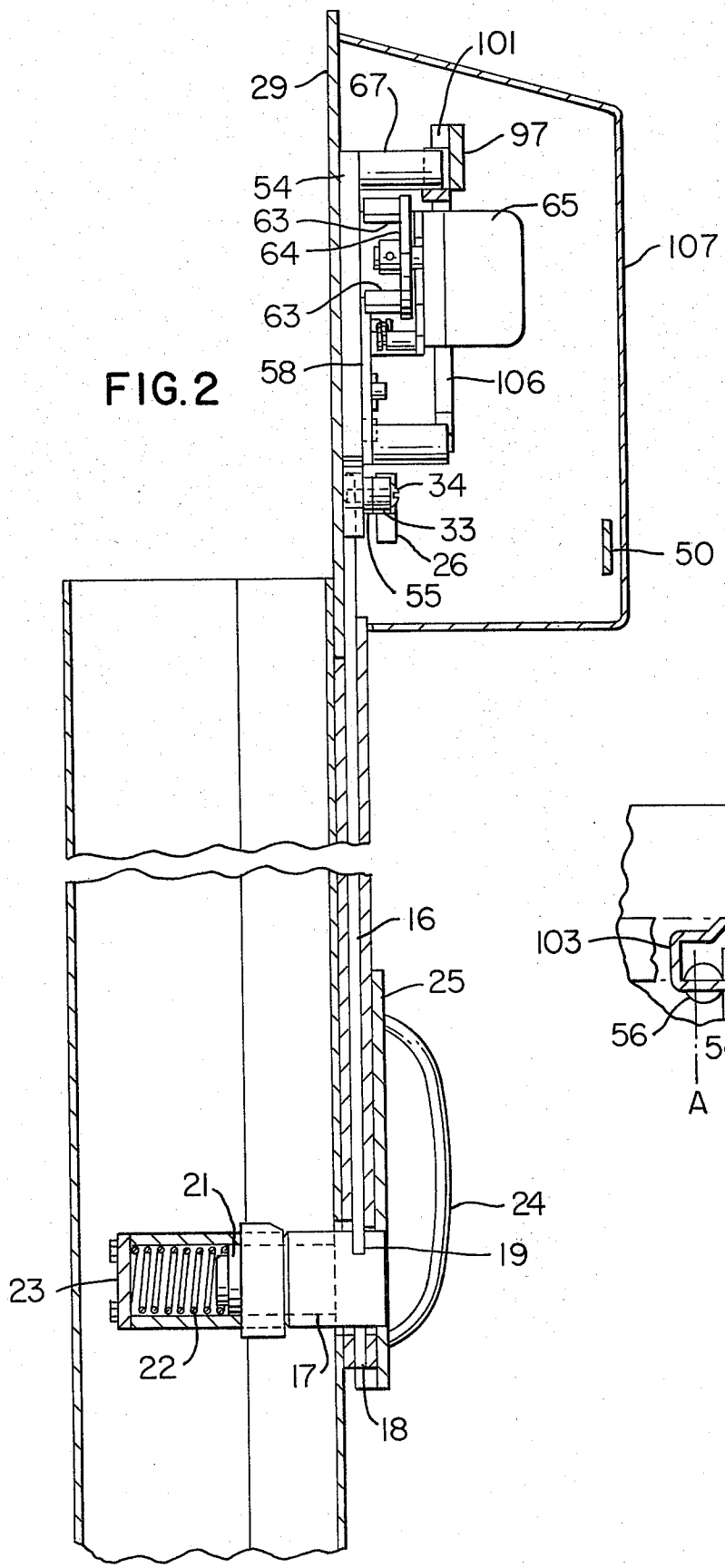
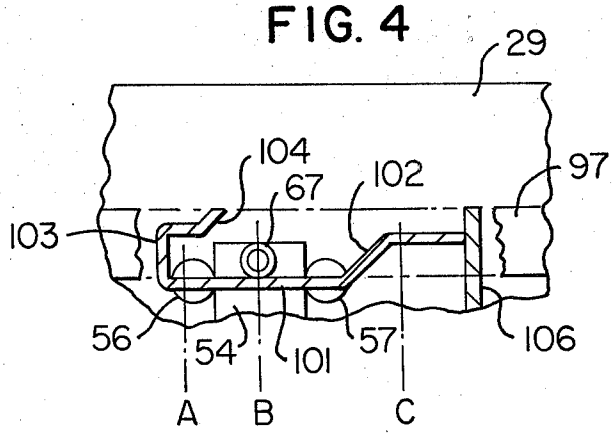

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FIG. 4


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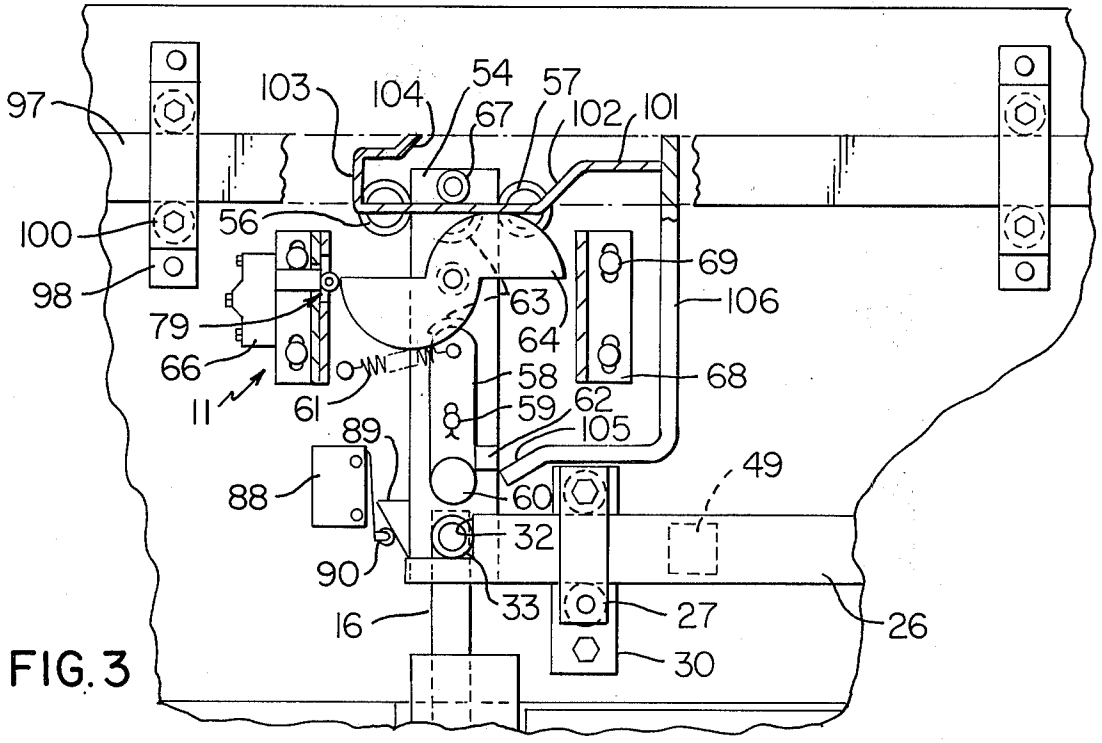

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FIG. 3

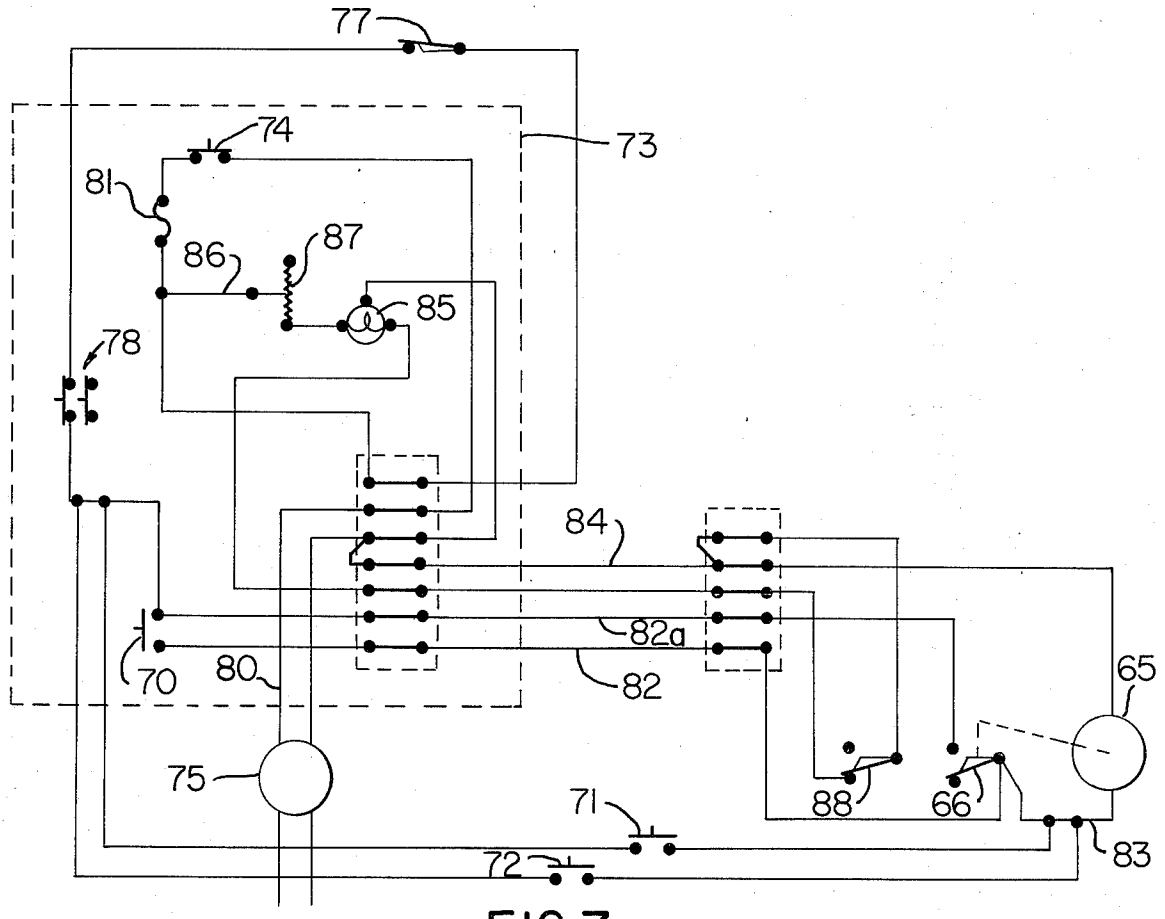

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FIG. 7

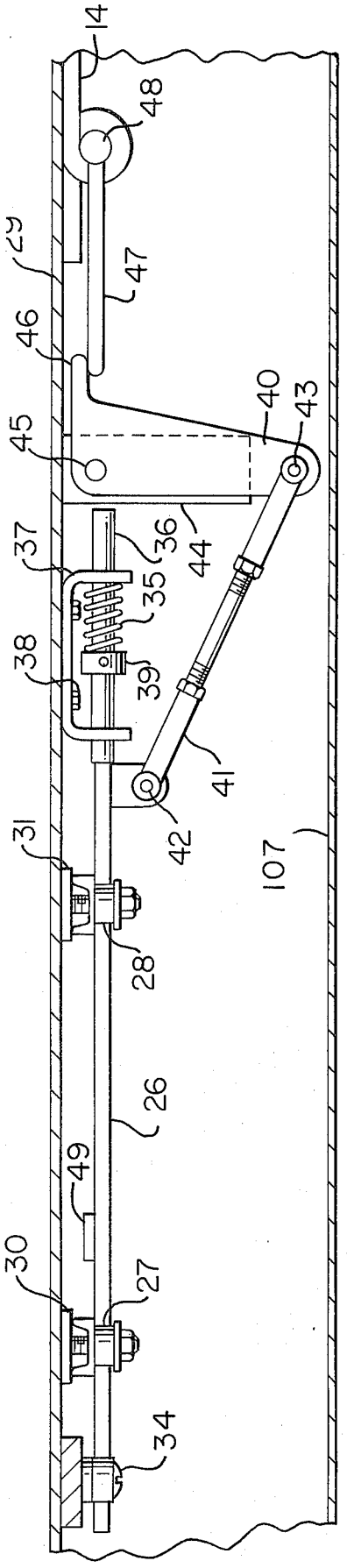

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FIG. 5

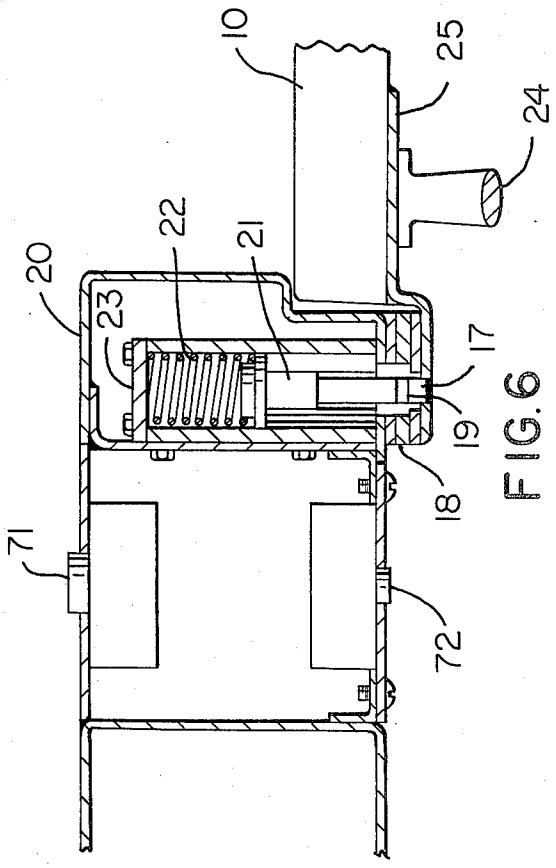

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72

FIG. 6

LOCKING AND UNLOCKING MECHANISM FOR HINGED DOORS

BACKGROUND OF THE INVENTION

This invention relates generally to prison cell door mechanisms and more particularly to a locking and unlocking mechanism for hinged cell doors.

Numerous locking devices are known in the art for securing a single cell door, as well as a multiplicity of doors such as in an entire cell block. In the past, the door or doors were either opened or closed due to the action of the guard. No provisions were previously made for permitting an inmate to open and close his respective cell door independently. In minimum security situations and honor systems it is often desirable that the inmates can travel to and from their cells at will. Similarly, in maximum security situations, it may occur that an individual inmate might wish to isolate himself from the other inmates. Under existing devices this is not possible.

Accordingly, it is an object of this invention to provide a locking and unlocking mechanism for hinged cell doors which permits individual opening and closing of the door in one control position.

A further object of this invention is to provide a locking and unlocking mechanism for hinged cell doors which will permit an inmate to open the cell door from either side in one control position.

A still further object of this invention is to provide a locking and unlocking mechanism for hinged cell doors which automatically opens all cell doors in a second control position and secures all cell doors in the closed and locked position in a third control position.

And yet another object of this invention is to provide a locking and unlocking mechanism for hinged cell doors which is of simple and economical construction and is foolproof in operation.

SUMMARY OF THE INVENTION

This invention provides a locking and unlocking mechanism for hinged cell doors. The control mechanism has three control positions. Direct links connect the control mechanism with the securing mechanism. A drop bar operationally connecting the door with the securing mechanism controls the opening of the cell door. A deadlock control position prevents mechanical lifting of the drop bar. A release control position automatically lifts the drop bar to open all doors simultaneously. An electric control position sets up circuitry for individual operation of the doors by an operator at a remote position, as well as by each individual inmate. Means controlled by the pivoting of the door hold the drop bar in the unlocked conditions. Other objects details, uses and advantages of this invention will become apparent as the following description of an exemplary embodiment thereof presented in the accompanying drawings proceeds.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings show a present exemplary embodiment of this invention in which:

FIG. **1** is an elevational view of the locking and unlocking mechanism with respect to a single cell door, respective doors and panels having been removed to show the mechanism;

FIG. **2** is a sectional view taken along line **2—2** of FIG. **1**;

FIG. **3** is an enlarged elevational view of the securing mechanism with the gear motor removed;

FIG. **4** is a diagrammatic representation of the master bar cam member and the respective positions of the roller member relative to the control positions;

FIG. **5** is an elevational view taken along line **5—5** of FIG. **1**;

FIG. **6** is a sectional view taken along line **6—6** of FIG. **1**, particularly showing the door kicker; and

FIG. **7** is an exemplary electrical schematic showing a typical electrical control for the mechanism of FIG. **1**.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Reference is now made to FIG. **1** of the drawings which illustrates one exemplary embodiment of the locking and unlocking mechanism for hinged cell doors. For illustrative purposes only, the mechanism of this invention is shown in conjunction with a single cell door **10.** It should be noted that this invention can be utilized with multiple doors but for simplification in description, only a single door is shown and described herein. The mechanism of this invention comprises a securing mechanism operatively connected through direct linkages with a control mechanism each of which is designated generally by the reference numerals **11** and **12,** respectively.

The cell door **10** is mounted on door jamb **13** by a pair of hinges **14** and **15.** In the present embodiment, the hinges **14** and **15** are fixedly secured to the door jamb **13** and cell door **10** by suitable means such as welding of the like. It should be noted that although door **10** is shown herein as having a solid face, door **10** could just as easily be formed with a multiplicity of bars throughout.

The door **10** is prevented from opening through the cooperative engagement of drop bar **16** with a notched lug **17** (FIG. **2**) which projects inwardly from the door edge. The drop bar **16** is mounted for movement in the vertical plane in lock post **18.** The lock post **18** is formed with an enlongated aperture through which the lug **17** can move. The lug **17** is fixedly secured to the door **10** by suitable means such as welding or the like. When the drop bar **16** is moved upwardly out of the lug notch **19,** FIGS. **2** and **6,** as will be explained more fully hereinbelow, the door **10** can be opened.

Mounted within housing **20,** as seen in FIG. **6,** is a spring loaded striker or plunger **21.** In the door closed position, the end of lug **17** engages the striker **21** causing the striker to compress spring **22.** Once the drop bar **16** is disengaged from the notch **19,** the spring **22** forces the striker **21** away from end plate **23** thereby kicking the door open. It should be noted that plunger **21** has a greater width than the lock post aperture thereby preventing the plunger from being forced out by the spring force. As the door **10** is moved to the closed position, the lug **17** will engage the plunger **21** and force it towards the plate **23** thereby compressing spring **22.** When the door is in the fully closed position, the notch **19** will be in alignment with the drop bar **16.**

A handle **24** is secured by bolts or the like through a door extension plate **25,** through the door and to a handle (not shown) on the interior of the door **10.** In the present embodiment, as seen in FIGS. **1, 2** and **6,** the extension plate **25** projects beyond the edge of the door **10** so as to overlie the doorpost **18.** The lug **17** is,

therefore, secured to the door extension plate 25 for movement and operation as hereinabove described.

A drop bar support rail 26 is mounted for sliding movement transverse the movement of the drop bar 16. As seen in FIGS. 1 and 5, the support rail 26 is mounted for sliding movement by a pair of bearings 27 and 28. The bearings 27 and 28 are respectively secured to transom 29 by suitable mounting brackets 30 and 31, respectively. One end of the support rail 26 is formed with a cutaway portion defining shoulder 32 which receives roller 33 in the door closed position. Roller 33 is rotatably mounted to the drop bar 16 by suitable means such as a bolt, screw or the like 34.

Referring now to FIG. 5, it is seen that support rail 26 is spring biased to the left by spring 35. A striker rod 36 is mounted for reciprocal movement in a U-shaped angle member or bracket 37, which in turn is securedly fixed by bolts 38 to the transom 29. One end of the striker rod 36 engages the end of the support rail 26 and acts thereagainst. A locking collar 39 is fixedly secured to the rod 36 so as to position the spring 35 between the collar and one end of the bracket 37. In the door closed position shown, the spring 35 is compressed and movement to the left due to the spring action is prevented due to the cooperative engagement of shoulder 32 with the roller 33.

The support rail 26 is operationally connected with bell crank 40 through an adjustable link 41, such as a turnbuckle or the like. The link 41 is pivotally connected at each end by pivot elements 42 and 43, respectively, to the support rail 26 and bell crank 40. Bell crank 40 is mounted on angle bracket 44. The bell crank 40 is pivotally mounted to the angle bracket 44 by pivot member 45. Projecting lip or flange 46 of the bell crank 40 engages the end of flap or plate 47. The plate 47 is secured to hinge extension rod 48 which in turn is secured to hinge 14. The plate 47 thus moves with the door 10. As seen in FIG. 5, bell crank 40 is prevented from rotation in the clockwise direction in the door closed position because plate 47 acts against lip 46 and prevents its clockwise rotation. This in turn also serves to prevent movement to the left of the support rail 26. When the drop bar 16 is raised, as will be hereinbelow described, the door 10 is kicked open by plunger 21, as hereinbefore described. As door 10 pivots about hinges 14 and 15 to the open position, plate 47 is rotated in the counterclockwise direction thereby disengaging itself from lip 46. The roller 33 having been raised out of engagement with shoulder 32 and the lip 46 no longer being restrained, the action of spring 35 now is free to drive rod 36 to the left. This action causes support rail 26 to move to the left causing bell crank 40 to be rotated in the clockwise direction through link 41. Movement of the support rail 26 is limited due to the stop flange 49 which is secured by suitable means to the support rail 26. Thus, support rail 26 will move to the left, as viewed in FIGS. 1 and 5, until such time as stop flange 49 engages the bracket 30. It is also seen that the upper surface of the support rail 26 is such that the roller 33 is carried thereby. This holds the drop bar 16 in the upward or unlocked position.

When the door 10 is moved to the closed position, the plate 47 is rotated in the clockwise direction and engages lip 46 of bell crank 40. As the door 10 is fully closed, the force of plate 47 acting against lip 46 causes the bell crank 40 to be pivoted in the counterclockwise direction thereby pulling support rail 26 to the right via link 41. This action also urges rod 36 to the right, thereby once again compressing spring 35. When the shoulder 32 of the support rail 26 clears roller 33, the drop bar 16 will drop into engagement with the notch 19 of lug 17.

A casing lock bar 50, FIGS. 1 and 2, is connected to the casing lock bar lever 51. The lock bar level 51 is mounted in a control panel 52 (cover removed) by a pivot member 53. FIG. 1 shows the lever 51 and lock bar 50 in the locked position, thereby securing cover 107 (FIG. 2) in place. With the cover 107 in place, the support rail mechanism, as well as the securing mechanism 11 and connecting links are enclosed between cover 107 and transom 29 and thereby inaccessible to unauthorized personnel.

The structure and operation of the securing mechanism 11 is best seen by referring to FIGS. 1, 2 and 3. The securing mechanism 11 is similar to t0e securing mechanism described in the Gerald L. Butt United States Patent Application Ser. No. 303,240, filed Nov. 2, 1972, now U.S. Pat. No. 3,837,117, dated Sept. 24, 1974, for Locking and Unlocking Mechanism and assigned to the assignee of the present invention. The disclosure of said prior application is incorporated herein by reference as though set out at length herein.

The drop bar 16 is operatively connected through roller 33 with a drop bar extension 54. One end of the drop bar extension 54 is formed with a channel in which the drop bar 16 wits. The roller screw 34 extends through an aperture in the drop sar extension 54 to engage the drop bar 16, thereby operatively connecting the two members together. A spacer 55 insurds that the roller 33 is axially positioned to cooperate with the support rail 26. The drop bar extension 54 is supported between bearings 56 and 57. Thus, the drop bar extension 54 is freely ovable in a vertical plane.

A pendulum 58 is pivotally mounted by pivot member 59 to the drop bar extension 54. A mass 60 is secured to the lower end of the pendulum 58 such that the natural gravitational force acting on the pendulum 58 and mass 60 will tend to maintain the pendulum in a vertical plane. However, to insure a positive return to the vertical position, a spring 61 is connected to the free end of the pendulum 58 and provides a positive return force. To prevent overtravel of the pendulum 58, a lug or projection 62 is provided on the drop bar extension 54 so as to limit the travel of the pendulum 58.

In the electric control position illustrated in FIGS. 1 and 3, the drop bar extension 54 is secured against upward movement since the upper end of pendulum 58 engages one of a pair of tube segments 63 which are carried on a cam plate 64. The cam plate 64 is rotationally driven by a suitable gear motor designated generally as 65 (FIG. 2). Such gear motors are commercially available from Dayton Electric Manufacturing Co. of Chicago, Ill., and need not be described herein. When energy is applied to the motor 65, the cam plate 64 will start to rotate in the counterclockwise direction as viewed in FIG. 3. The rotation of the cam plate 64 will cause the tube segment 63 to urge pendulum 58 in a clockwise direction about the pivot 59 and at the same time disengage the motor limit switch 66. Continued rotation of the cam plate 64 will bring the camming surface of one hemisphere into contact with a roller 67. The roller 67 is rotatably mounted to the upper end of the drop bar extension 54. When the pendulum 58 becomes disengaged from the tube segment 63, the con-

tinued rotation of the cam plate **64** will urge the roller member **67** in the upward direction thereby raising the drop bar extension **54** and thereby drop bar **16.** Once the roller **33** has been raised above the top surface of the support rail **26,** the striker **21** (FIGS. **2** & **6**) will open the cell door **10** as hereinabove described. After one-half revolution of the cam plate **64,** one of the camming surfaces will once again engage the motor limit switch **66** thereby cutting the power to the motor. The gear motor **65** is supported by a motor mount bracket **68** which is fixedly secured to the transom **29** by bolts or the like **69.** In the electric condition as shown in FIG. **3,** it is seen that the drop bar **16** may not be manually raised due to the engagement of one tube segment **63** with the pendulum **58.** Thus, the electric control condition is seen to be in a manual deadlock position. Only an electrical signal applied to the gear motor **65** will permit unlocking of the cell door **10.**

Electrical energy will be applied to the motor **65** only after the control mechanism **12** has been placed in the electrical control position as will be described hereinbelow. In this control position, the guard may open the respective doors through actuation of a master control switch **70,** as seen in FIG. **1.** The electrical control position of the control mechanism **12** sets up the electrical circuitry such that the respective cell doors may be individually opened by the inmate himself. As seen in FIG. **6,** a button switch **71** and a key switch **72** are mounted in the housing **20.** The switches **71** and **72** are electrically connected with the motor **65,** as shown in FIG. **7.** Thus, when the inmate closes switch **71** from the interior of the cell, the circuitry is closed so that power is applied to the motor **65** and the drop bar **16** is raised, as hereinabove described. Each inmate is provided with an individual key which will only operate his own respective key switch. Thus, should an inmate desire to return to his cell for any particular reason, he need only insert his key in the key switch **72,** turn the key, thereby closing the switch so that the circuitry to the motor **65** is complete.

A control console **73,** shown schematically in the circuit diagram of FIG. **7,** may be positioned adjacent the control panel **52** or placed at a remote location. A master power switch **74** interrupts the power from a power supply **75** to the elecrical circuit. A second interrupter switch **77** is mounted in the control panel **52** and opened and closed by the actuator bar **76** (FIG. **1**), as described in the aforementioned Patent Application. Before the gear motor **65** can be actuated, switches **74** and **77** must be closed.

Individual isolation switches, shown generally as **78,** must be closed before power is applied to the motor **65.** Thus, if any cell is to remain in the locked condition, the respective switch **78** is left open. The switch **66** is in the open condition due to engagement of the cam plate **64** with the switch plunger **79** (FIG. **3**). To unlock the cell door **10,** a push button **70** is closed by the guard. The closing of the puch button **70** completes the circuit from the power supply **75** through lead line **80,** switch **74,** fuse **81,** switches **77, 78, 70,** lead line **82** and lead line **83** to the gear motor **65.** Lead line **84** completes the circuit from the gear motor **65** to the power supply **75.**

After the gear motor **65** has been energized and cam plate **64** rotated to disengage the plunger **79,** the switch **66** is closed such that power to the gear motor **65** is then supplied over lead line **82***a*, through switch **66** to lead line **83.** At the completion of one-half revolution of the cam plate **64,** the plunger **79** is again engaged so that switch **66** is opened to interrupt the power to the gear motor **65.**

When the control mechanism has been placed in the electrical control position, the electrical circuitry is set up not only for guard operation, but also for individual inmate operation. Thus, in the present exemplary embodiment the inmate is free to close either button switch **71** or key switch **72.** When this occurs, power from supply **75** is supplied to gear motor **65** through the circuitry embodying lead line **80,** switch **74,** fuze **81,** switch **77,** switch **78,** switches **71** or **72,** and lead line **83.** As previously described, once motor **65** is energized the switch **66** is closed and power is then supplied to the motor **65** through lead line **82***a*.

An indicator light **85** is mounted at the control console **73.** This light provides a visual indication of whether the drop bar **16** is fully closed or not and thereby an indication of the locked or unlocked condition of the cell door **10.** Should a plurality of cells be involved, an individual indicator light would be used for each respective cell. As seen in FIG. **7,** the light **85** receives electrical energy through lead line **86** and resistor **87,** the resistor reducing the voltage of the power supply for the light **85.** A transformer would replace the resistor in the situation where a plurality of cells is involved.

The indicator light **85** is electrically connected and controlled by an indicator switch **88,** as seen in FIG. **3.** The switch **88** is secured to the transom **29** and includes a roller type switch plunger **90.** a cam projection **89** on the drop bar extension **54** engages the plunger **90** so as to open and close the switch **88.** When the drop bar extension **54** is in the down position such that the drop bar **16** is secured in the notch **19,** the cam **89** engages the plunger **90** so as to close switch **88,** thereby completing the circuit through the indicator light **85.** Thus, only when the cell door **10** is locked and in the safe condition will the light be lit. As the drop extension **54** is raised, the switch will be opened, thereby breaking the circuit for the light **85** so as to indicate that the door **10** is in the unlocked condition.

Referring once again to FIG. **1,** the control mechanism **12** is mounted in the control panel **52** which is at the end of the line of cells. The control panel shown in FIG. **1** has the front cover removed and a portion of the inner panel **91** sroken away. The control mechanism **12** has three positions or conditions designated as A, B and C. The positions indicate respectively deadlock, electric and release.

A handle or lever **92** is used to move the control mechanism from one position to another position. The construction and operation of the respective elements and gearing mechanically connecting the handle **92** with the actuator bar **76** are fully described in the aforementioned patent application and need not be described herein. It being sufficient to understand that the movement of bar **76** is controlled by handle **92.**

The upper end of the actuator bar **76** (FIG. **1**) is pivotally connected to a bell crank **93** through link **94.** The bell crank **93** is pivotally secured to the transom **29** by a bracket **95.** A link **96** pivotally connects the bell crank **93** to a master bar **97.** The master bar **97** is supported for sliding movement along the transom **29** by brackets **98** and **99.** Each bracket **98** and **99** includes a pair of bearings **100** on either side of the master bar

97 to permit relatively frictionless travel of the bar. The master bar 97 is supported a sufficient horizontal distance away from the transom 29 such that a master bar cam 101, as seen in FIGS. 3 and 4, will engage the roller 67. The cam 101 is rigidly connected with the master bar by any suitable means such as welding, and moves therewith. The relative position of the roller 67 to the master bar cam 101 will be changed as the handle 92 is moved from one control position to another because of the connecting links 94 and 96 and the bell crank 93.

The relative positioning between the roller 67 and cam 101 is best seen in FIGS. 3 and 4 wherein the roller 67 is shown in solid lines in the electric position. The remaining two control positions are shown in FIG. 4.

The cam 101 is seen to be formed with an inclined surface 102, a substantially U-shaped end 103 and an upwardly projecting portion 104 extending from one leg of the U-shaped portion 103. In the deadlock control position, the master bar 97 will have been moved to its extreme righthand position, as viewed in FIG. 1. In this position, the roller 67 will be cradled within the U-shaped portion 103 of the cam 101. With the roller 67 so cradled, the drop bar extension 54 is prevented from movement. Thus, the drop bar 16 may not be manually raised and energization of the gear motor 65 is prevented. Hence the cell door 10 is secured and there is no way to unlock such door until the handle 92 has been moved from its deadlock control position. Clockwise movement of the handle 92 from the deadlock position to the electric position will urge the master bar 97 to the left to that position shown in FIGS. 3–4 wherein the drop bar extension 54 may be raised as hereinabove described.

Further clockwise movement of the handle 92 from the electric position toward the release position will urge the cam 101 to the left relative to the roller 67. In addition, the inclined surface 105 of a pendulum tripper 106 (FIG. 3) will have engaged the pendulum mass 60 causing the pendulum 58 to rotate in a clockwise direction. This movement frees the upper end of the pendulum 58 from the tube segment 63. The pendulum tripper 106 is secured by welding or the like to the master bar 97 and is carried therewith.

As the handle 92 is moved to the release position, the cam 101 is urged further to the left thereby driving the roller 67 up the inclined surface 102 to the release position. The relative upward movement of the roller 67 along the surface 102 results in a direct lifting of the drop bar extension 54 thereby raising the roller 33 above the support rail 26. Thus, when the control handle 92 is moved to the release position, the drop bar 16 is automatically raised such that all the cell doors 10 are unlocked and opened as hereinabove described. It should be noted that the handle 92 may not be moved to the deadlock position 103 while the drop bar extension 54 is in the raised position, i.e., any cell door 10 is not locked. In the unlocked condition of any cell door 10, the roller 33 wil be resting on the upper surface of the support rail 26. In addition, the roller 67 will be raised a corresponding distance. In the raised position, the projecting end 104 of cam 101 will engage the raised roller 67 to prevent the handle 92 from moving to the full deadlock position.

while a present exemplary embodiment of this invention has been illustrated and described, it will be recognized that this invention may be otherwise variously embodied and practiced within the scope of the following claims.

What is claimed is:

1. A locking and unlocking mechanism for locking and unlocking a hinged door comprising in combination: a door hingedly supported at one end; a bar being positionable relative to the other end of said door to provide locking and unlocking conditions; lock means on said door cooperating with said bar in the locking condition; bias means for forcing said door open in the unlocked condition; securing means operatively connected with said bar to move said bar from the locked condition to the unlocked condition; control means having three operating control positions; link means connecting said control means with said securing means wherein movement of said control means to the respective control positions respectively positions said securing means whereby two control positions provide for unlocking and opening of said door; and support rail means mounted independent of said door and movable transverse to said bar when said door is open, wherein said rail means is moved to said bar in the unlocked condition when the door is open.

2. The mechanism as set forth in claim 1 further comprising a striker rod axially mounted relative to said support rail, driving means acting on said striker rod to urge said rod and said support rail in a direction transverse to said bar, and holding means operatively connecting said support rail with said hinged door wherein said holding means prevents movement of said support rail when said door is in the closed position.

3. The mechanism as set forth in claim 2 in which said holding means comprises a bell crank, said bell crank having a projecting lip from one end thereof, link means pivotally connecting said bell crank other end with said support rail, and a plate secured to said door wherein said plate will rotatably pivot with the opening and closing of said door, one end of said plate engaging said bell crank lip to prevent pivoting movement of said bell crank when said door is in the closed position and wherein opening of said door will pivot said lip so as to be disengaged from said lip.

4. The mechanism as set forth in claim 2 in which said drive means is a spring, and in which said bias means comprises a spring actuated plunger.

5. The mechanism as set forth in claim 4 in which said spring actuated plunger is mounted in a housing adjacent the other end of said door and transverse thereto, said door further comprising a lug mounted to said door and projecting inwardly therefrom, said lug being engageable with said spring actuated plunger wherein said lug places said spring actuated plunger under a load when said door is in the closed position whereby the force of the said spring actuated plunger will force said door open when said bar is positioned in the unlocked condition.

6. The mechanism as set forth in claim 5 in which said lug is formed with a bar receiving notch therein wherein one end of said bar will engage said notch when said door is in the closed position.

7. The mechanism as set forth in claim 3 further comprising electric drive means operatively connected with said securing means to permit electric drive operation of said securing means when said control means is in the electric control position, electrical circuit connected between said electric drive means and a source of power, a first control switch operatively connected

with said electric drive means wherein actuation of said first switch by a guard at a control switch completes the circuit for said electric drive means thereby causing said door to be opened, a second switch mounted within the interior of the cell and electrically connected with said electric drive means, and an electric key switch mounted on the exterior of the cell enclosure and electrically connected by said electric drive means, said second switch and key switch permitting individual inmate opening of respective cell doors when said control mechanism is in the electric control position.

8. The mechanism as set forth in claim **7** in which movement of said control means to a deadlock control position moves said link means to cooperatively engage and deadlock said securing means to prevent said securing means from mechanically and electrically moving said bar to the unlocked condition.

9. The mechanism as set forth in claim **8** in which movement of said control means to a third control position simultaneously causes said securing means to move said bar to the unlocked condition.

10. The mechanism as set forth in claim **2** in which said securing means further comprises a bar extension member operatively connected at one end with said bar, said bar being moved in response to movement of said bar extension member, a roller rotatably mounted adjacent the other end of said extension member, a master bar mounted for movement normal to said bar extension member, said master bar being connected with said control means, and further comprising a cam fixedly secured to said master bar, said cam coacting with said roller wherein relative movement occurs therebetween in response to movement of said control means.

11. The mechanism as set forth in claim **10** in which said cam includes a substantially U-shaped end portion and an inclined portion wherein movement of said control means to the deadlock control position moves said master bar relative to said roller to relatively position said roller in the U-shaped portion of said cam to positionally deadlock said bar extension from moving said bar to the unlocked condition.

12. The mechanism as set forth in claim **11** in which movement of said control means to the electric control position moves said master bar relative to said roller to position said roller out of said U-shaped portion wherein said electric drive means is free to raise said bar extension upon actuation of said drive means and switch means responsive to said control means to prevent actuation of said drive means when said control means is in any control position except the second control position.

13. The mechanism as set forth in claim **12** in which movement of said control means to a third control position moves said master bar relative to said bar extension member to drive said roller up said cam inclined portion thereby moving said bar to the unlocked condition.

14. The mechanism as set forth in claim **13** in which said electric drive means includes an electric motor, a cam plate rotationally driven by said motor, said cam plate engaging said roller to cam said roller during part of the rotational movement of said cam plate, a limit switch responsive to said cam plate for interrupting operation of said motor when said bar has moved to the unlocked condition, and comprising a pendulum pivotally mounted at its center portion on said bar extension member, and in which said cam plate includes a pendulum engaging segment wherein a deadlock condition exists during engagement of said cam plate segment with said pendulum.

15. The mechanism as set forth in claim **14** further comprising a tripper arm secured to said master bar, said arm being engageable with said pendulum to pivot said pendulum out of engagement with said cam plate segment during movement of said control means to the third control position.

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