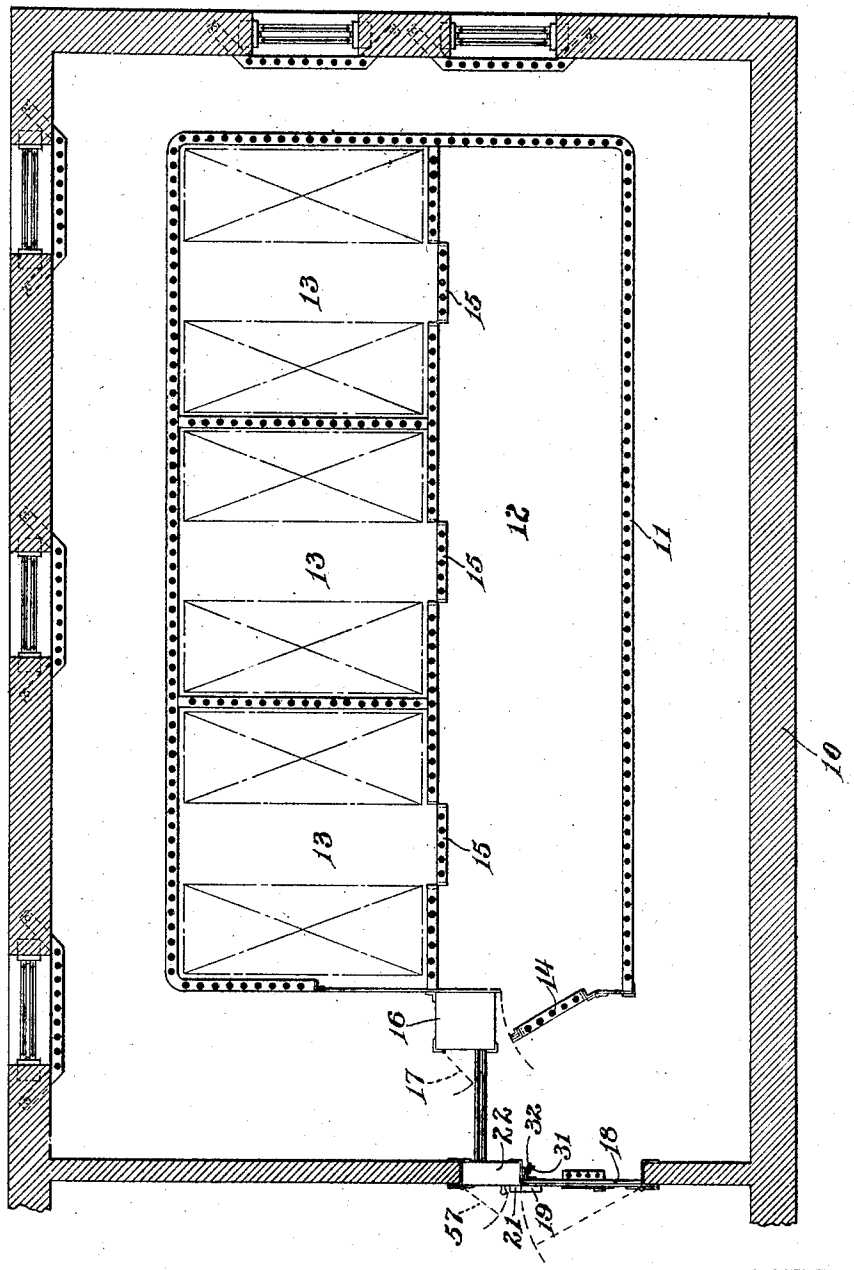
Jan. 11, 1927. 1,614,336

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SAFETY LOCKING SYSTEM FOR JAILS AND THE LIKE

Filed June 26, 1925 3 Sheets-Sheet 1

Fig. 1.



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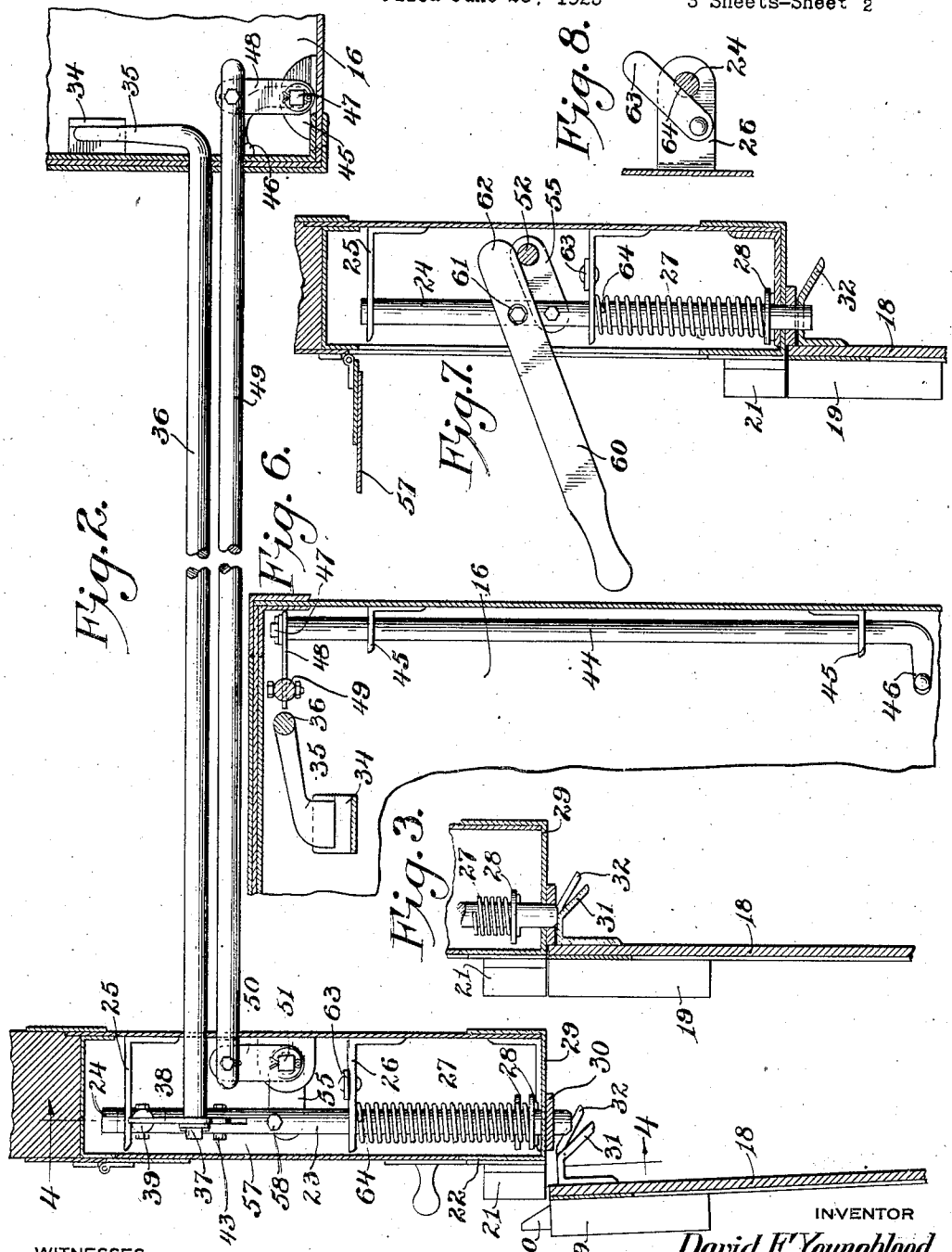
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SAFETY LOCKING SYSTEM FOR JAILS AND THE LIKE

Filed June 26, 1925 3 Sheets-Sheet 2



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SAFETY LOCKING SYSTEM FOR JAILS AND THE LIKE

Filed June 26, 1925 3 Sheets-Sheet 3

Fig. 5.

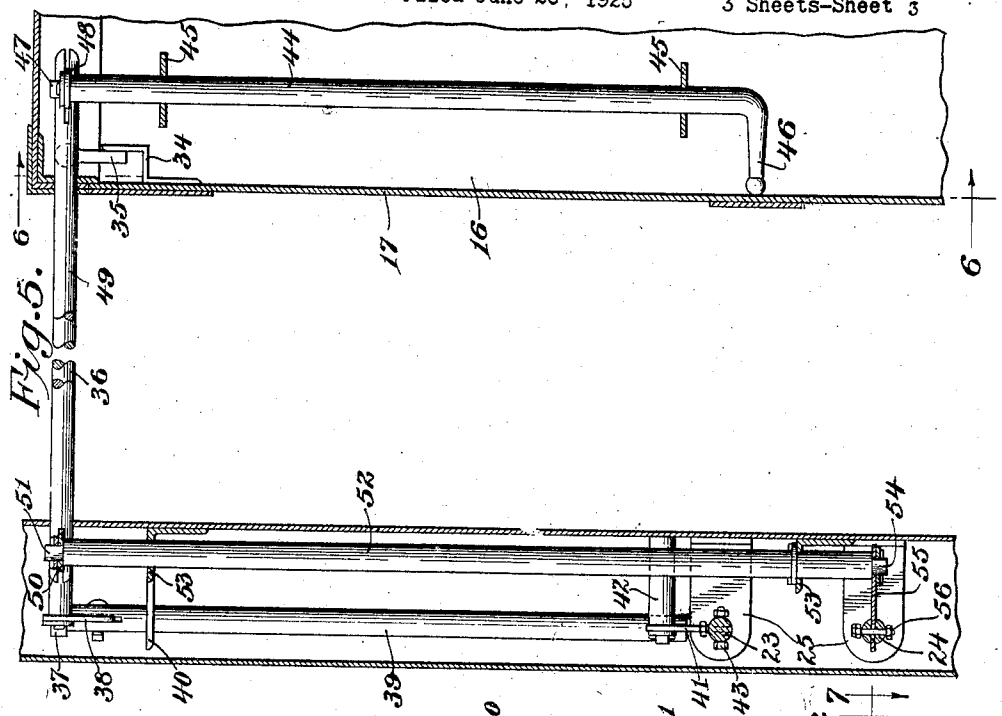
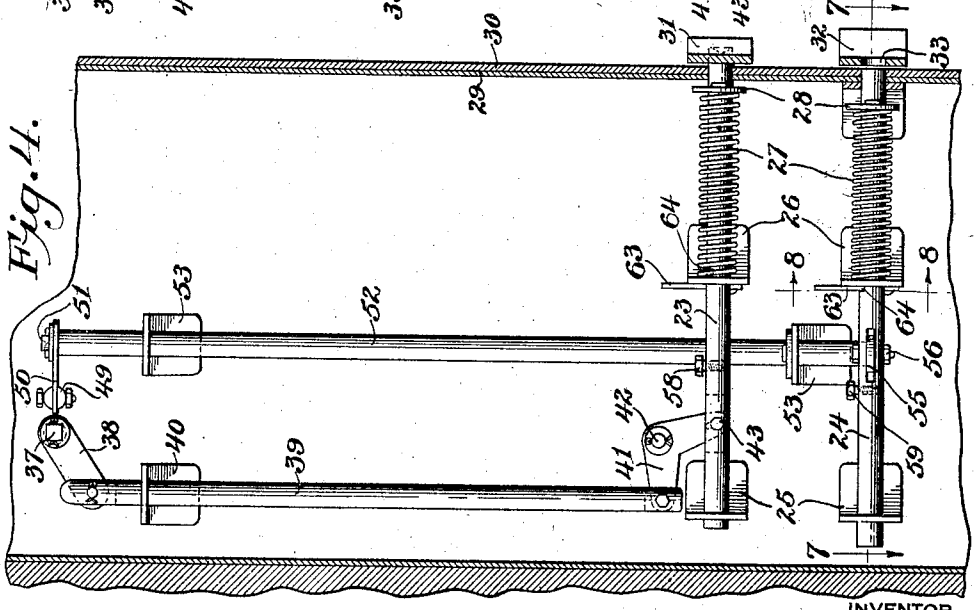


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SAFETY LOCKING SYSTEM FOR JAILS AND THE LIKE.

Application filed June 26, 1925. Serial No. 39,806.

This invention relates to a locking system adapted to be used in jails and similar structures having a number of cells, each provided with a door which is opened or closed and locked or unlocked by means of controlling levers located within a lever box in the cell room.

Many jail deliveries are undoubtedly made possible through the oversight or carelessness of jailers in failing to properly lock the cell doors or the entrance door to the cell room as they go in or out. Such cases are of more frequent occurrence in country or small town jails where there are no regular guards in constant attendance. In such cases the jailer goes in two or three times a day to feed the prisoners, to clean up the jail, or to take the prisoners in or out, frequently leaving the cell room entrance door ajar, thinking it is locked when the bolt is merely thrown outside the keeper. Frequently he leaves the entrance door open, perhaps thinking that the prisoners are all locked in their cells, when, as a matter of fact, some one has been overlooked and left outside on his previous visit. Guards are often rushed and overpowered in this way.

The principal object of the present invention, generally stated, is to make such oversight or carelessness on the part of the jailer impossible, and specifically, to provide a locking system, the several parts of which are so related that the jailer upon entering the cell room cannot open the lever box door until the entrance door behind him has been locked, and upon leaving can not unlock the entrance door until the lever box door has been closed and locked.

The present invention is preferably used in connection with means for controlling the cell doors and corridor door, such as that shown in U. S. Patent 1,269,244, issued to me June 11, 1918, but inasmuch as the specific construction of the latter has no direct bearing upon the present invention, a detailed description thereof is deemed unnecessary.

The detailed construction of the present invention, however, with its objects and advantages will be specifically described in connection with the accompanying drawings, which illustrate the same in its preferred form.

In the drawings:

Figure 1 is a floor plan of a cell room with the walls thereof shown in section.

Figure 2 is a horizontal section on an enlarged scale, showing the cooperative relation between the entrance door to the cell room and the lever box, the entrance door being left ajar.

Figure 3 is a fragmentary sectional view showing the entrance door closed and bolted.

Figure 4 is a vertical section taken substantially on the line 4—4 of Figure 2.

Figure 5 is a vertical section taken at right angles to the plane of Figure 4, showing the cooperative relation between the entrance door and the lever box.

Figure 6 is a vertical section taken on the line 6—6 of Figure 5.

Figure 7 is a horizontal section taken on the line 7—7 of Figure 4, showing the application of the emergency lever.

Figure 8 is a detail sectional view taken on the line 8—8 of Figure 4.

The invention is shown in connection with a cell room 10, within which is an inner wall 11 enclosing a corridor 12, and a plurality of cells 13. The corridor is provided with a door 14, and each cell with a door 15. All of these doors are adapted to be controlled by means of any suitable mechanism located within a lever box 16 near the entrance to the corridor, and provided with a door 17.

Access to the cell room is provided through an entrance door 18, which is equipped with a lock 19 of any suitable construction, having a bolt 20 cooperating with a keeper 21, secured adjacent the doorway.

In carrying out the present invention, the wall adjacent the entrance door 18 is provided with a casing 22, within which two bolts or bars 23 and 24 are mounted for reciprocation, each being supported in a rear angle guide 25 and a front angle guide 26 secured to the wall of the casing. The front part of each of the bolts 23 and 24 is surrounded by a coiled spring 27, which is under compression and acts between the angle guide 26 and a collar 28 mounted on the bolt to urge the latter in the direction of the doorway. Each of these bolts extends through the door jamb 29 and door stop 30, and they are adapted to be engaged by angle bevels 31 and 32 respectively, secured

on the door 18. The angle bevel 31 is imperforate and, as the door is closed, forces the bolt 23 inwardly and retains it in that position for a purpose which will be hereinafter explained. The angle bevel 32 is provided with an opening 33 into which the bolt 24 is projected when the door 18 is closed, and which serves to lock the door independently of the lock 19.

The door 17 of the lever box 16 has an angle bar catch 34 secured to its inner face near the upper end thereof, which is adapted to be engaged by a latch finger 35 formed on the end of a rock shaft 36, which is journaled respectively on the front wall of the lever box 16 and the rear wall of the casing 22. When the shaft 36 is rocked, therefore, so as to permit the latch finger 35 to drop within the angle bar catch 34, the door 17 is locked independently of any other locking means which may be connected with the door.

The front end of the rock shaft 36 is provided within the casing 22 with a non-circular end 37, on which is mounted a crank arm 38. The outer end of this crank arm is pivotally conected to an upright rod or bar 39, which is slidably mounted in an angle guide 40 secured within the casing, and which is pivotally connected at its lower end to a bell crank 41 mounted on a stud 42. The opposite end of the bell crank 41 has a pin and slot connection 43 with the bolt 23. It will be noted, therefore, that when the entrance door 18 is open and the bolt 23 projected outwardly by the spring 27, the bell crank 41 will be rocked in a direction to move the rod 39 downwardly, rocking the shaft 36 in a direction to engage the latch finger 35 with the catch 34 and positively hold the door 17 closed. The latter can not ordinarily be opened, therefore, until the entrance door has been closed, so as to push back the bolt 23, thereby raising the latch finger 35 out of engagement with the catch 34.

It is also preferred to provide means whereby the opening of the entrance door 18 is prevented until the lever box door 17 has been closed. For this purpose, a rock shaft 44 is mounted in bearings 45 within the lever box 16, and is provided at its lower end with a laterally extending arm 46 which is engageable by the inner face of the door 17 when the latter is closed. The shaft 44 is provided with a non-circular upper end 47, on which is mounted a crank arm 48. The outer end of this crank arm has a pin and slot connection with a rod 49, which is slidably supported, respectively, in the front wall of the lever box 16, and the rear wall of the casing 22. The front end of the rod 49 has a pin and slot connection with the outer end of a crank arm 50, which is mounted on the non-circular upper end 51 of a vertical rock shaft 52, the latter being mounted in bearing brackets 53 secured to the wall of the casing. The shaft 52 also has a non-circular lower end 54 on which is mounted a crank arm 55, the outer end of the latter having a pin and slot connection 56 with the bolt 24.

When the door 18 is closed, the bolt 24 will be projected by its spring 27 into the opening 33 to positively lock the door independently of the other locking means 19. Before the door 18 can be opened, therefore, the lever box door 17 must ordinarily be closed, so as to engage the end of the arm 46 and rock the shaft 44 in a direction to move the rod 49 rearwardly, thereby rocking the shaft 52 in a direction to retract the bolt 24.

The casing 22 is normally closed, but is provided on its outer face with a door 57 which may be opened in cases of emergency. This permits access to the bolts 23 and 24, so that the former may be retracted, in extreme emergencies, to permit the lever box door 17 to be opened, even though the entrance door 18 is also open. This can not be done, however, through negligence or carelessness, but only by a positive and intended act on the part of the jailer. Similarly, when the door 57 is opened, the bolt 24 may be withdrawn to unlock the door 18, although the lever box door 17 may be open. For convenience in retracting the bolts 23 and 24 in such cases of emergency, they are provided respectively with pins 58 and 59, and an emergency lver 60 is kept on hand for such use. This lever is provided with an opening 61 for receiving a head of either of the pins 58 or 59, and the rear end 62 of the lever is of suitable length so that it may be engaged with the shaft 52, as shown in Figure 7, so as to furnish a fulcrum for the lever when it is used to retract either of the bolts 23 or 24. Detents 63 are pivoted to the respective angle guides 26, and may, in such cases, be swung into engagement with notches 64 on the respective bolts 23 and 24 to retain the latter in retracted position until such time as it is desired to release them.

From the foregoing description, it will be seen that in a jail equipped with this invention, it will be absolutely impossible for the jailer to carelessly or inadvertently open the lever box door 17 until the entrance door 18 has been closed sufficiently to push back the lever 23. After this has been done, the bolt 24 is projected, and the entrance door 18 is locked as soon as the lever box door is opened. In leaving the cell room, the jailer can not possibly by inadvertance open the entrance door 18 until the lever box door has been closed. Although the lock 19 may be unlocked, the door will still be held closed by the bolt 24 until the lever box door, by its engagement with the end of the arm 46, causes the bolt 24 to be withdrawn.

The invention is preferably used in connection with a lever box 16, within which are located the various levers for controlling the corridor door and cell doors after the manner disclosed in my above mentioned patent, so that the lever box door cannot be locked until the corridor door is locked, and until every cell door is locked. It is to be understood, however, that the invention is not limited to this specific use, but may be used under any circumstances in which there are two doors to be controlled. It is also apparent that the means for effecting the cooperative relation between the two doors may be modified in many respects without any material departure from the salient features of the invention, or sacrificing any of its advantages. It is my intention, therefore, to include all such modifications within the scope of the appended claims.

What is claimed is:

1. In a safety locking system, the combination of an outer door, an inner door, means normally locking the outer door, and means actuated by the inner door in closing to release said locking means.

2. In a safety locking system, the combination of an outer door, an inner door, a bolt for locking the outer door, a spring normally holding the bolt in locking position, and means actuated by the inner door in closing to withdraw said bolt against the action of its spring and out of locking relation to the outer door.

3. In a safety locking system, the combination of an outer door, an inner door, means normally locking the outer door, means actuated by the inner door in closing to withdraw said locking means, and means automatically operable upon the opening of the outer door to positively lock the inner door.

4. In a safety locking system, the combination of a room having an entrance door, a compartment within the room also having a door, a spring held bolt normally locking said entrance door, means actuated by the door of the compartment in closing to withdraw said bolt against the action of its spring out of locking relation to said entrance door, and means automatically operable upon the opening of the entrance door to ordinarily prevent the door to the compartment from opening until the outer door is again closed.

5. In a safety locking system, the combination of two doors, means normally locking one door in closed position, and means actuated by the other door in closing to release said locking means.

6. In a safety locking system, the combination of two doors, a bolt adapted to be projected into locking relation to one of said doors, a spring tending to project said bolt, and means engageable by the other door in closing and actuated thereby to withdraw said bolt against the action of its spring.

7. In a safety locking system, the combination of two doors, means for locking one of the doors, means actuated by the second door in closing to withdraw said locking means, and means automatically operable upon the opening of the first door to latch the second door.

8. In a safety locking system, the combination of two doors, a bolt adapted to be projected to lock one of the doors, a spring tending to project said bolt, means actuated by the second door in closing to withdraw said bolt against the action of its spring, a concealed latch for the second door, and means automatically operable upon the opening of the first door to close said latch so as to ordinarily prevent the second door from opening until the first door is again closed.

9. In a safety locking system, the combination of two doors, a bolt mounted for reciprocation, a spring normally acting on said bolt to project it into locking engagement with the first door, a rock shaft having an arm engageable by the second door to rock said shaft as said second door is closed, and means to connect the shaft to the bolt to retract the latter in opposition to its spring when the shaft is thus rocked so as to release the first door only when the second door is closed.

10. In a safety locking system, the combination of two doors, a bolt adapted to be projected into locking relation to one of said doors, a spring acting on said bolt and tending to project it, a rock shaft having an arm engageable by the second door to rock the same when the second door is closed, means connecting the rock shaft to the bolt to retract the latter in opposition to its spring when the shaft is thus rocked so as to release the first door only when the second door is closed, means inside the second door for latching it when closed, and means actuated by the first door when closed; to open said latching means.

11. In a safety locking system, the combination of two doors, a bolt mounted for reciprocation, a spring normally acting on said bolt to project it into locking engagement with the first door, a rock shaft having an arm engageable by the second door to rock said shaft as said second door is closed, means to connect the shaft to the bolt to retract the latter in opposition to its spring when the shaft is thus rocked so as to release the first door only when the second door is closed, a rock shaft inside the second door and having a latch finger, a catch secured to the door and engageable by the latch finger to positively hold the door closed, a second bolt having a spring associated therewith and normally projecting it into the

path of the first door and adapted to be pushed back in opposition to its spring when the first door is closed, and means operatively connecting said second bolt to the last-mentioned rock shaft to rock the latter and open said latch when the first door is closed.

12. In a safety locking system, the combination of two doors, means for locking each door in closed position, and means ordinarily preventing the locking means for one door from being withdrawn from locking position unless the other door is fully closed and locked.

13. In a safety locking system, the combination of two doors, means normally preventing either door from being opened unless the other door is closed, and means for automatically locking said other door as soon as the first door starts to open.

14. In a safety locking system, the combination of two doors, means for locking each door in closed position, means ordinarily preventing the locking means for one door from being withdrawn from locking position unless the other door is fully closed and locked, and means, which may nevertheless be operated manually in case of emergency, to release either door while the other door remains open.

15. In a safety locking system, the combination of two doors, means ordinarily preventing either door from being opened unless the other door is closed, means for automatically locking said other door as soon as the first door starts to open, and means which may be operated manually to release either door in case of emergency while the other door remains open.

16. In a safety locking system, the combination of an outer door, an inner door, a casing adjacent the outer door, two bolts mounted in said casing and projecting through the outer door jamb, a spring for each bolt normally projecting it into the path of the outer door as the latter approaches closed position, said outer door having a hole in which one of the bolts is engageable to lock the door closed, means connected with the other bolt and operable when the bolt is projected to lock the inner door, the same being operable when the bolt is pushed back by being engaged by the outer door in closing, to unlock the inner door.

17. In a safety locking system, the combination of an outer door, an inner door, a casing adjacent the outer door, two bolts mounted in said casing and projecting through the outer door jamb, a spring for each bolt normally projecting it into the path of the outer door as the latter approaches closed position, said outer door having a hole in which one of the bolts is engageable to lock the door closed, means connected with the other bolt and operable when the bolt is projected to lock the inner door, the same being operable when the bolt is pushed back by being engaged by the outer door in closing, to unlock the inner door, said casing also having a door, and a normally detached emergency hand lever engageable with either bolt to retract the same when the casing door is open, regardless of the position of the inner or the outer door.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature.

DAVID FRANKLIN YOUNGBLOOD.