Jan. 6, 1925. 1,521,999

J. E. DERR

BURGLARPROOF SAFE

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Fig.1.

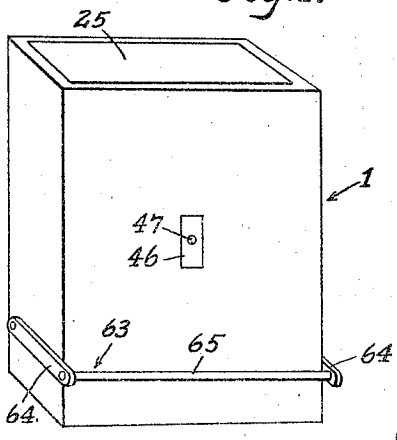



Fig.2.

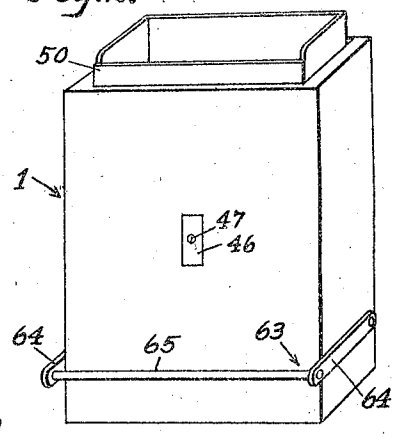
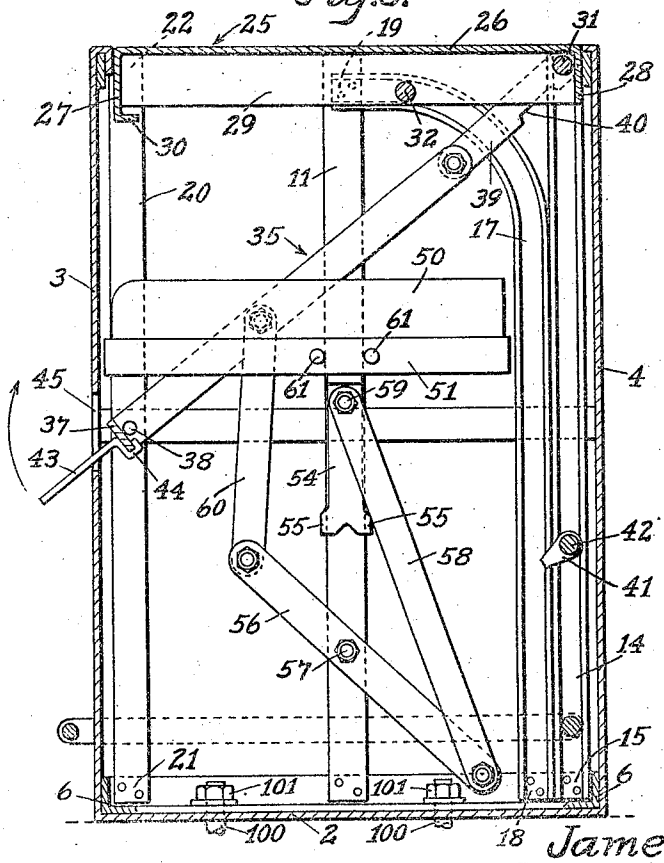



Fig.3.




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Fig. 4.

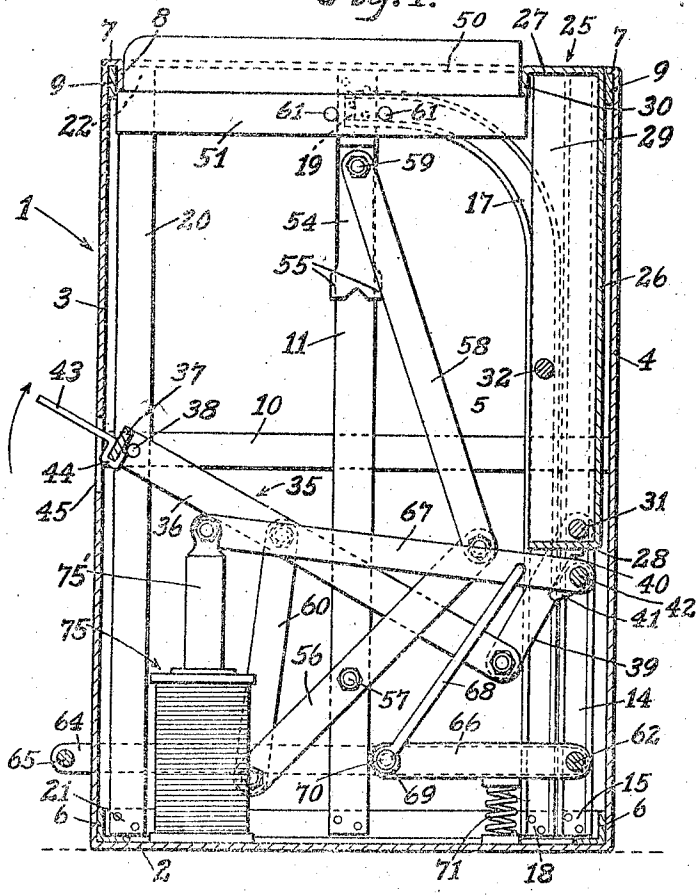
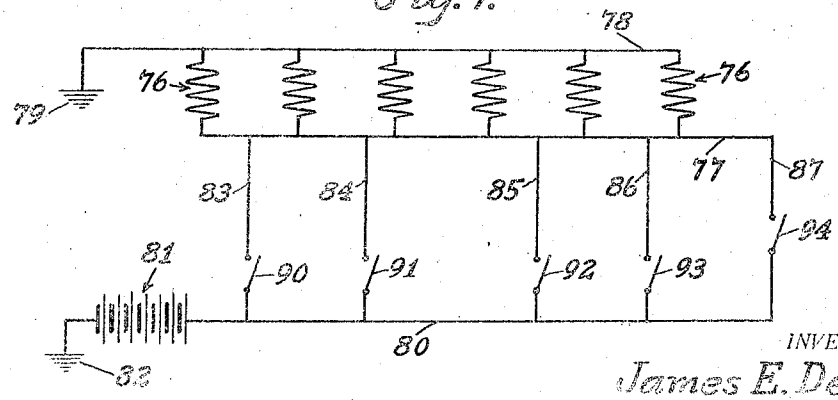



Fig. 7.




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Fig. 5.

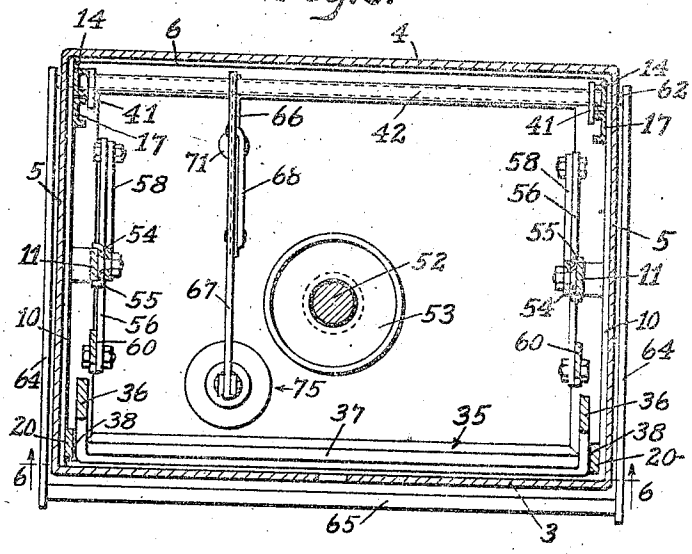
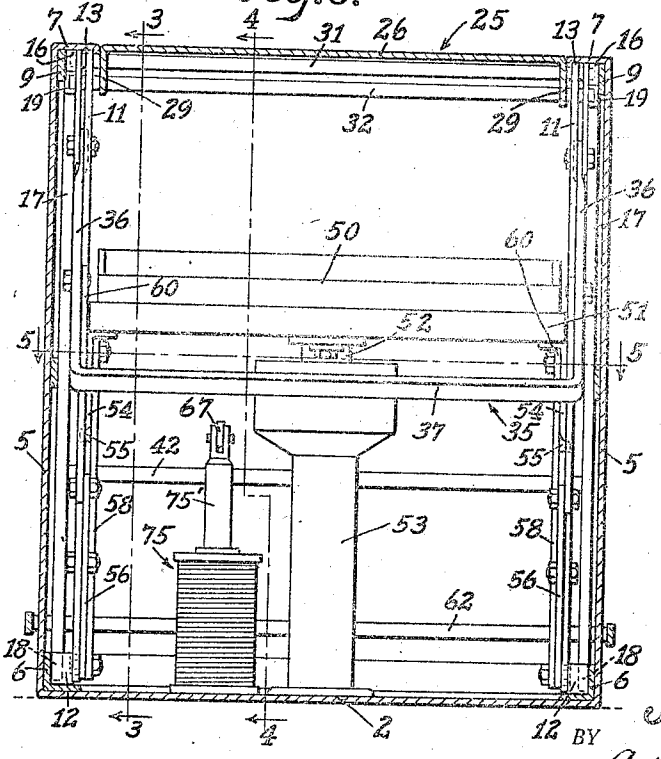



Fig. 6.




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# UNITED STATES PATENT OFFICE.

JAMES E. DERR, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-FIFTEENTH TO ANDREW K. MARTELL, OF LOS ANGELES, CALIFORNIA.

## BURGLARPROOF SAFE.

Application filed November 6, 1923. Serial No. 673,081.

*To all whom it may concern:*

Be it known that I, JAMES E. DERR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Burglarproof Safes, of which the following is a specification.

My invention relates to safes and it is an improvement over my safe disclosed in my application filed April 9, 1923, Serial No. 630,802.

The general object of my invention is to provide an improved burglar-proof safe, which may be instantly closed mechanically be depressing a pedal or electrically by closing a switch when a burglar is detected.

A more particular object is to provide a safe of the character stated which will be simple in construction, compact, and highly efficient in operation.

A further object is to provide a safe of the character stated, particularly useful in banks, which, when open, will maintain a cash box adjacent a bank teller's counter and will withdraw said cash box within itself when it is closed.

Other objects and advantages will appear hereinafter and while I show herewith and will describe a preferred form of construction, I wish to be understood that I do not limit myself to such preferred form but that various changes and adaptations may be made therein without departing from the spirit of my invention as hereinafter claimed.

Referring to the drawings:

Fig. 1 is a perspective view of my safe in closed position.

Fig. 2 is a perspective view of my safe in open position.

Fig. 3 is a vertical cross section of my safe taken on line 3—3 of Fig. 6.

Fig. 4 is a vertical cross section of my safe in the open position, taken on line 4—4 of Fig. 6.

Fig. 5 is a horizontal section of my safe taken on line 5—5 of Fig. 6.

Fig. 6 is a vertical section of my safe taken on line 6—6 of Fig. 5.

Fig. 7 is a diagrammatic view of the electrical circuit for controlling my safe electrically.

In the drawing 1 indicates a casing open at the top and comprising a bottom wall 2, front wall 3, rear wall 4, and side walls 5. An angle iron 6 is secured to the bottom and to the inside of said front, rear and side walls. An inturned flange 7 is formed on the upper edges of the front, rear and side walls of the casing and a flange 8 depends from the inner edge of said flange 7 a short distance inwardly of the front wall 3.

A reinforcing bar 9 is secured to the inside of the front, rear and side walls of the casing and in front of flange 8 against the under side of flange 7. A reinforcing bar 10 is secured to the inside of the side walls of the casing intermediate the top and bottom of said casing.

A pair of vertical bars 11 are located within the casing 1 midway between the front and rear walls of said casing and a short distance inwardly from the side walls 5, said bars being secured at their lower ends to the angle iron 6 at 12 and at their upper ends to the under side of flange 7 at 13. A pair of U-shaped tracks 14 are located in the rear of the casing 1 adjacent the side walls 5 and are secured at their lower ends at 15 to angle iron 6 and at their upper ends at 16 to the bar 9. A pair of vertical U-shaped tracks 17 which curve forwardly 90 degrees are located in the casing against the forward walls of the tracks 14 and forwardly of said tracks adjacent the side walls 5 and are secured at their lower ends to angle iron 6 at 18 and at their upper ends at 19 to the upper bar 11. A pair of vertical reinforcing bars 20 are located in the forward part of the casing adjacent the side walls of the casing and are secured at their lower ends at 21 to angle iron 6 and at their upper ends at 22 to the under side of upper flange 7.

A door 25 is provided for closing the top of the casing 1, which lid comprises an upper wall 26, front wall 27, rear wall 28 and side walls 29, said front, rear and side walls depending from said upper wall. A flange 30 is turned inwardly from the lower edge of front wall 27.

A shaft 31 extends through the rear end of the lid and is secured in the side walls 29, the ends of said shaft projecting into the tracks 14. A shaft 32 extends through the lower part of the lid 25 forwardly of the shaft 31, and is secured in the side walls 29, the ends of said shaft projecting into the tracks 17. A U-shaped lever 35 comprising arms 36 and a connecting member 37 con-

necting the forward ends of said arms, is pivoted by pivots 38 to the bars 20 and 10 adjacent the front walls 1 of the casing, said pivots extending through said forward ends of said arms. Links 39 connect the rear ends of arms 36 and the ends respectively of shaft 31.

The links 39 are provided with notches 40 to be engaged by pawls 41 secured on a horizontal shaft 42 journaled at its ends in the tracks 14. A handle 43 is formed with a hook 44 for engaging the lever members 37, which handle is adapted to extend through an opening 45 in the front wall 3 of casing 1, so that it may be gripped to swing the lever 35. A plate 46 may be locked over the opening 45 by a lock 47 when the handle 43 is removed to prevent access through said opening to the lever 35 by an unauthorized person when the safe is closed.

A cash tray 50 is mounted on a platform 51 in the casing 1, which platform is mounted on the upper end of the plunger 52 of a dash pot 53 secured in the casing to the bottom wall 2 thereof. Depending arms 54 are secured to the under side of the platform 51 at the sides respectively thereof, on the lower ends of each of which arms are formed outstanding lugs 55, which engage the edges of the guide bars 11 whereby the platform 51 is properly guided in its upward and downward movements. A pair of levers 56 are pivoted at 57 to the lower portion of the bars 11—11.

The rear ends of the levers 56 are connected to the lower ends of links 58, the upper ends of which links are pivotally connected to the arms 54 at 59. Links 60 are connected at their lower ends to the forward ends of levers 56 and at their upper ends to the arms 36 of lever 35. Pins 61 project from each side of the platform 51 and engage the side edges of the guide bars 11 for assisting in guiding the platform up and down.

A horizontal shaft 62 extends through the lower rear portion of the casing 1 and is journaled in the tracks 14. A treadle 63 comprises a pair of arms 64, secured at their rear ends to the outer ends of shaft 62, and a rod 65, which is connected at its ends to the forward ends of said arms, said rod extending forwardly of the front wall 3 near the bottom of the casing 1 and said arms extending outside the side walls 5 of said casing. A horizontal arm 66 is secured at its rear end within the casing 1 to the shaft 62. An arm 67 is secured in the casing at its rear end to the shaft 42.

A link 68 is connected at its upper end to the arm 67 near the rear end thereof and is formed with an eye 69 in which eye extends a pin 70 on the forward end of arm 66. A spring 71 is interposed between the bottom wall of the casing 1 and the under side of arm 66, which spring normally holds the treadle 63 an arm 66 elevated. A solenoid 75 is mounted in the bottom of the casing 1 near the front thereof, to the upper end of the core 75 of which solenoid is connected the forward end of the arm 67.

In Fig. 7 is illustrated an electric circuit for operating a plurality of my safes. The coils 76 of the solenoids 75 of said safes are connected at their ends to leads 77 and 78 respectively. The lead 78 is grounded at 79. A lead 80 is connected to one pole of a battery 81, the other pole of which battery being grounded at 82. Leads 83, 84, 85, 86 and 87 are connected at their ends to the leads 77 and 80 respectively. Switches 90, 91, 92, and 93 and 94 are interposed in the leads 83, 84, 85, 86 and 87 respectively.

The operation of my switch is as follows:

To open the safe, when closed as shown in Fig. 3, the plate 46 is first unlocked and removed. The handle 43 is inserted through the opening 45 and its hook 44 engaged with the connecting member 37 of lever 35. Upon pulling up said handle the lever 35 is swung down and the lid 25 is drawn down into the rear of the casing through the medium of said lever and links 39, said lid being guided to its open position as shown in Fig. 4 by the engagement of the ends of shafts 31 and 32 with tracks 14 and 17 respectively. Downward movement of the lever 35, through the medium of links 60, levers 56 and links 58, causes the platform 51 and cash tray 50 to be lifted until the platform engages the lower edges of flanges 8 and 30 and the cash tray 50 extends above the top of the casing 1, in which position the parts are locked by the engagement of pawls 41 with the notches 40 in the links 39. The handle 43 is then removed and the plate 46 is then locked over the opening 45. The safe may be closed mechanically, in case of burglary or for any other reason, by the operator upon depressing the treadle 63 with his foot, which through the medium of the arm 66, link 68 and lever 67 disengages the pawls 41 from the notches 40 whereupon the cash tray 50 and platform 51 descend by gravity against the cushion of the dash pot 53 into the casing 1, while the door 25 is swung into closed position by the descent of said platform and cash tray through the medium of links 58, levers 56, links 60, lever 35, and links 39, the lid being guided into closed position by the engagement of the ends of shafts 31 and 32 with the tracks 14 and 17 respectively. The safe may be closed electrically by closing any of the switches 90, 91, 92, 93 and 94, which may be located in any suitable place in the building, whereby the circuit shown in Fig. 7 is closed and the solenoid coils 76 energized, whereby the cores 75′ and levers 67 are drawn down and the pawls 41 disengaged from the notches 40.

The closing operation is thereafter the same as above described.

The safe may be bolted to the floor by bolts 100, which extend through the bottom wall 2 of the casing 1, and nuts 101, which screw on the upper ends of said bolts against said wall.

Having thus described my invention, I claim:

1. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing, and to rest within said casing when said door is closed, actuating means for opening said door and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means.

2. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing and to rest within said casing when said door is closed, actuating means for opening said door within said casing, and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means.

3. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing, and to rest within said casing when said door is closed, actuating means for opening said door and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and electrical means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means.

4. In a safe, a casing, a pair of vertical tracks in said casing, another pair of vertical tracks in said casing which are curved at their upper ends, a door, a pair of shafts extending through said door, the ends of one of said shafts engaging said first pair of tracks, and the ends of said second shaft engaging said second pair of tracks, the engagement of said second shaft with the curved upper ends of said second pair of tracks causing said door to close the upper end of said casing, a platform, a cash tray platform slidably mounted to rest within said casing when said door is closed, actuating means for drawing said door guided by said tracks downwardly into said casing, and at the same time raising said platform to hold the cash tray thereon above said casing, means for holding said door open and said platform elevated, and means for releasing said holding means to allow said platform, and cash tray to descend into said casing and to cause said door to be closed by said descending platform through the medium of said actuating means.

5. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing and to rest within said casing when said door is closed, actuating means for opening said door and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and mechanical means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means.

6. In a safe, a casing, a pair of vertical tracks in said casing, another pair of vertical tracks in said casing which are curved at their upper ends, a door, a pair of shafts extending through said door, the ends of one of said shafts engaging said first pair of tracks, and the ends of said second shaft engaging said second pair of tracks, the engagement of said second shaft with the curved upper ends of said second pair of tracks causing said door to close the upper end of said casing, a platform, a cash tray platform slidably mounted to rest within said casing when said door is closed, an actuating lever mounted in said casing, a link connected to said lever and to said first shaft for swinging said door guided by said tracks into the casing into open position, said link having a notch, a cash tray platform slidably mounted in said casing, a second lever in said casing, a link connecting one end of said lever and said actuating lever, a link connecting the other end of said lever and said platform, a shaft, a pawl on said shaft for engaging said notch in said link to hold said door open and said platform elevated, a lever secured to said shaft, and means for swinging said lever to disengage said pawl from said notch to enable withdrawal of said platform and cash tray into said casing and closing of said door.

7. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing and to rest within said casing when said

door is closed, actuating means for opening said door and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means, and a dash pot for cushioning the descent of said platform.

8. In a safe, a casing, a door for closing the top of said casing, a cash tray platform mounted to slide vertically in said casing and to rest within said casing when said door is closed, actuating means for opening said door and raising said platform at the same time so that said cash tray will rest above the casing, means for holding said door open and said platform elevated, and means for releasing said holding means to allow said platform and cash tray to descend into the casing and to cause said door to be closed by said descending platform through the medium of said actuating means, said casing having an opening to permit access to said actuating means to open said door and elevate said platform, a plate, and means for locking said plate over said opening when said platform and cash tray are withdrawn into the casing and said door is closed.

JAMES E. DERR.