June 27, 1933. R. HELMS 1,915,735

BANK PROTECTION APPARATUS

Filed Oct. 17, 1930 2 Sheets-Sheet 1

Fig. 1.

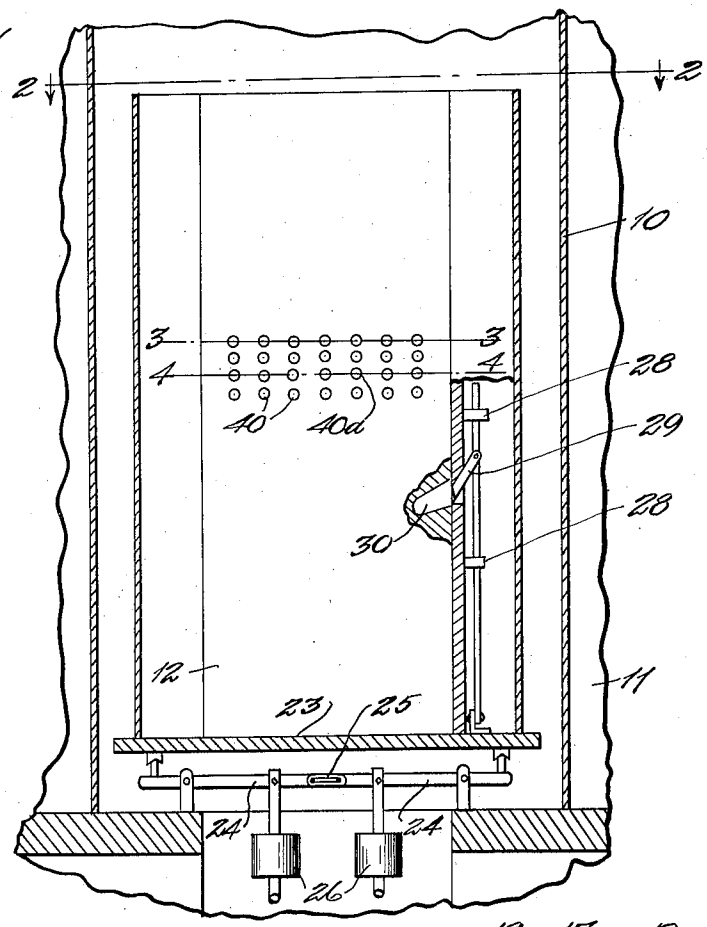
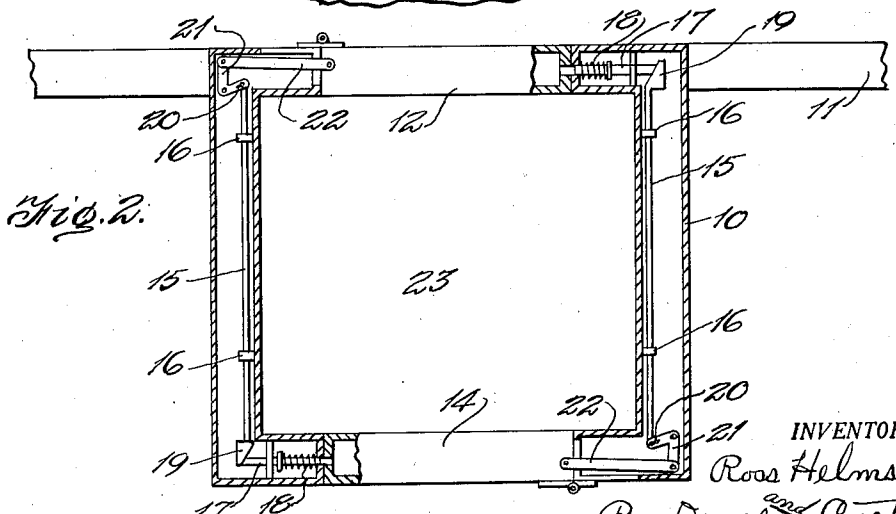


Fig. 2.



INVENTOR.
Ross Helms,
By Dyanl and Custer,
his ATTORNEYS.

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Filed Oct. 17, 1930 2 Sheets-Sheet 2

Fig. 3.

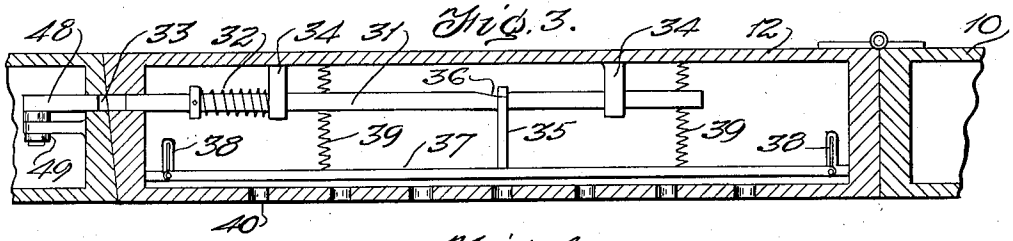


Fig. 4.

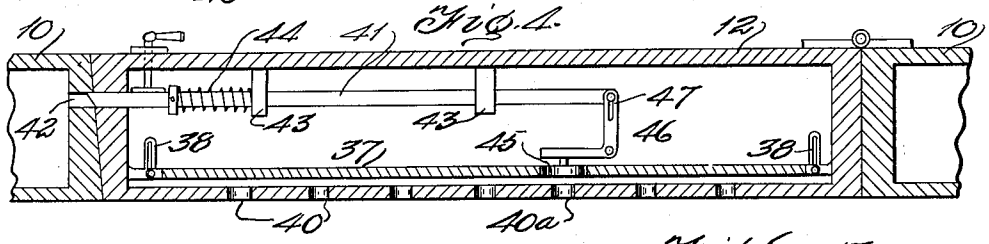


Fig. 5.

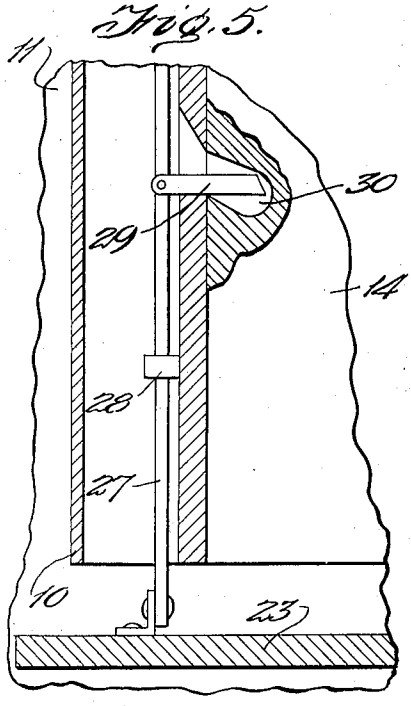
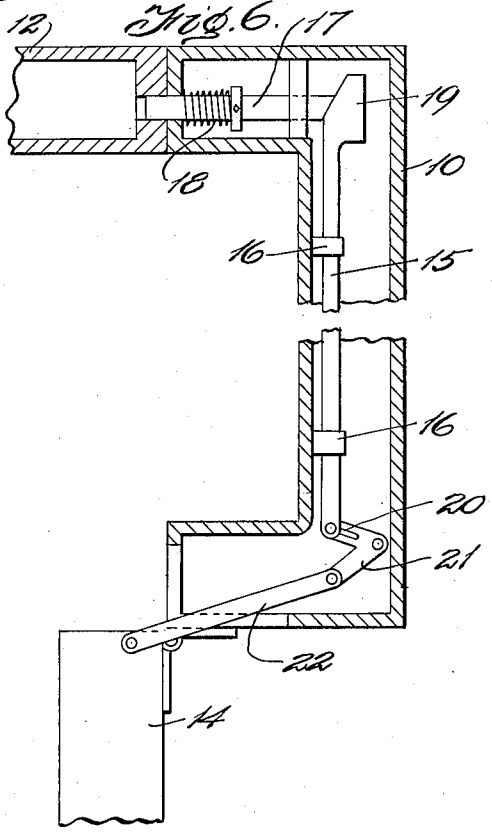


Fig. 6.



INVENTOR.
Ross Helms,
BY Deane and Custer
his ATTORNEYS.

Patented June 27, 1933 1,915,735

UNITED STATES PATENT OFFICE

ROSS HELMS, OF LOGANSPORT, INDIANA

BANK PROTECTION APPARATUS

Application filed October 17, 1930. Serial No. 489,470.

The object of the invention is to provide a bank protection apparatus in the form of an enclosure to be placed as an entrance way or vestibule to a safe or vault and having oppositely disposed doors operatively connected for interdependent movement, so that one must be in a certain position before the other may be operated and vice versa; to provide a structure of the kind indicated in which the door next adjacent the vault is independently locked requiring a known method to effect its release but being permanently locked in the event of deviation from this method; to provide a closure of the kind indicated in which the bottom or floor constitutes a movable platform operatively connected with both doors for bolting the latter in the event of the imposition on the platform of more than a predetermined weight; and to provide a bank protection apparatus which is generally of simple form, susceptible of cheap manufacture and possible of installation without difficulty.

With this object in view, the invention consists in a construction and combination of parts of which a preferred embodiment is illustrated in the accompanying drawings, wherein:

Figure 1 is a central vertical sectional view of a closure constructed in accordance with the invention and looking at the back door, constituting the entrance door to the safe or vault.

Figures 2, 3 and 4 are sectional views on the planes indicated by the lines 2—2, 3—3 and 4—4 respectively of Figure 1.

Figure 5 is an enlarged detail sectional view showing the platform actuated bolt in bolting position.

Figure 6 is an enlarged detail sectional view illustrating the kind of operative connection that is provided for interconnecting the doors.

The invention comprises a hollow walled closure 10 for placement as a vestibule or entrance way to a bank vault, the rear wall of said closure being formed by the front wall 11 of the vault, if the door 12 is to serve as the vault door proper, as it well may in most instances. Entrance to the vestibule or closure 10 is had through an opening in the front wall of the closure which is closed by a door 14. Both the doors 12 and 14 are mounted on hinges for swinging movement to their open and closed positions but are operatively connected, so that with both closed, if the door 14 be opened, the door 12 will be bolted and vice versa.

The operative connections comprise slide rods 15 disposed within the hollow space of the walls of the closure 10 on opposite sides, these being mounted in guide brackets 16 to provide for their longitudinal or axial movement. Each slide rod is designed to drive its attendant bolt 17, these bolts being positioned in the back and front walls respectively of the closure 10 for engagement with sockets in the free edges of the doors 12 and 14 when the latter are closed. The bolts are normally spring retracted as indicated at 18, so that when not forced forward by the slide rods 15 they will be disengaged from the doors and the latter will be free for opening and closing, so far as these particular bolts are concerned. Since the axes of the bolts 17 are at right angles to the axes of the slide rods 15, the driving of the former is effected by means of cams 19 carried at the extremities of the latter and provided with inclined faces against which the rear ends of the bolts 17 bear.

The bolt 17 for one door is actuated by the other door to effect the bolting operation and to this end the extremity of the slide rod 15 remote from the cam 19 has a pin and slot connection 20 with one arm of a bell crank lever 21 whose other arm is connected with the attendant door by means of a link 22. By this construction, when the doors 12 and 14 are closed, the bell crank levers 21 are rocked by the links 22, so as to retract the slide rods 15 and bring the low points of the cams behind the bolts 17, so that the springs 18 retract the latter and neither door is engaged with its bolt. If either door be opened, however, its movement effects the bolting of the other door. For example, if the door 14 be opened, as indicated in Figure 6, the bell crank lever 21 is rocked by its connecting link 22 in a direction to effect such movement of

the slide rod 15 as will bring the high point of the cam 19 behind the bolt 17 and the latter will be forced into its socket in the door 12 against the pressure of the spring 18. In the same way, the bolt 17 of the door 14 is affected by opening the door 12. When the one door is open, therefore, the other is bolted since the closure of one is necessary to effect release of the other.

The bottom or floor of the enclosure 10 is in the form of a movable platform 23 supported on the force arms of the levers 24 which are operatively connected with pin and slot connections 25 to insure their synchronous movement. The resistance arms of the levers 24 carry the weights 26 which may be adjusted along said resistance arms to determine the weight necessary to effect depression of the platform 23. Both the doors 12 and 14 may be bolted by the depression of the platform 23 and to this end it is connected with the vertical slide bars 27 mounted in guides 28 within the front and back walls of the enclosure, these slide bars 27 carrying pivotally mounted bolts 29 which, when the platform is depressed, are carried into the sockets or recesses 30 in the free edges of the doors.

Normally, the weights 26 are so adjusted that they hold the platform 23 elevated together with the weight of one person with the approximate amount that he will carry into or from the vault, so that the bolts 29 are not operated unless the weight on the platform exceeds this predetermined amount.

In addition to the bolts 29 and 17, the door 12 is provided with two additional bolts, the one, bolt 31 being spring actuated, as at 32 for movement into a socket 33 when released. This bolt 31 is slidably mounted in guides 34 within the door 12 and is held in retracted position by a hooked member 35 which engages a notch 36 in the bolt. The hooked member 35 is mounted on the back face of a pressure plate 37 which is disposed within the door 12 where it is slidably mounted for backward movement on guides 38. The plate 37 is spring impelled, as at 39 towards the front wall of the door 12 which, in the region of the plate is provided with uniformly spaced perforations 40 through which a plug may be inserted. The bolt 31 is designed to be maintained normally retracted but the remaining bolt 41 in the door 12 is normally extended into bolting position, its ends engaging the socket 42. The bolt 41 is also disposed within the door 12, being slidably mounted in guides 43 and spring impelled, as at 44 into bolting position. The bolt 42 is designed for retraction by a plug which, however, must be inserted through the perforation 40^a where it may engage a disk 45 which is carried on one arm of a bell crank lever 46, the latter having a pin and slot connection 47 with the rear end of the bolt 41. The disk 45 is of materially greater area than the perforation 40^a and enters a corresponding opening formed in the plate 37. If the bolt actuating plug be inserted in the perforation 40^a, it will engage the disk 45 and by rocking the lever 46 will retract the bolt 41, so that the door 12 may be opened, if the platform 23 is not depressed and the door 14 is closed. If, however, the plug be not inserted in the perforation 40^a but in one of the other perforations 40, the plate 37 will be forced back and the hook member 35 disengaged from the notch 36, when the bolt 31 will be released and enter its socket 33 thereby permanently bolting the door 12, until the bolt 31 shall have been released by the actuation of an ejecting plunger 48 which is disposed directly behind the socket 33 and is actuable by means of a lever 49. The ejecting plunger 48 and its lever are enclosed in the wall surface adjacent the door 12 and access to these may be had through a separately locked small door, not shown. In the event of the release of the bolt 31, entrance to the vault may not be had until after release of the bolt by some one authorized to have access to the ejecting plunger 48.

The weights 26 having been adjusted to maintain the platform 23 elevated to support the predetermined weight, for example a certain clerk or clerks with the amounts that they would ordinarily carry to and from the vault, the bolts 29 are retained in retracted positions and both the doors 12 and 14 are free to move without interference from them. The bolt 31 is normally retracted, however, but the door 12 is normally bolted by reason of the engagement of the bolt 41 with its socket 42. When both the doors 12 and 14 are closed, the bolts 17 are retracted and either door may then be opened without interference from these bolts. To enter the vault, however, the door 14 is first opened which brings the bolts 17 of the door 12 into engagement with the latter, so that so long as the door 14 remains open, the door 12 may not be opened, even though the bolt 41 be retracted. To open the door 12, therefore, requires closing of the door 14 which effects release of the bolt 17 from the door 12. Then the door 12 may be opened by releasing the bolt 41 by the insertion of the plug in the perforation 40^a. But the opening of the door 12 drives the bolt 17 of the door 14 and the latter may then not be opened until after the door 12 is closed.

Assuming that a clerk or employee should be caught in the enclosure by a bandit or robber, his additional weight on the platform 23 would depress the platform and effect operation of the bolts 29 which, if both the doors 12 and 14 be closed would bolt the latter and entrap the occupants.

The invention having been described, what is claimed as new and useful is:

1. In a bank protection apparatus, an enclosure, a door in one wall of the enclosure, leading to an area to be protected, a normally set locking means for such door, a manually operable element accessible through one of a plurality of openings in such door for releasing said locking means, and a second locking means for such door, said second locking means responding through an attempt to operate the first locking means through other than the predetermined opening.

2. In a bank protection apparatus, an enclosure, a door in one wall of the enclosure, leading to an area to be protected, a normally set locking means for such door, a manually operable element accessible through one of a plurality of openings in such door for releasing said locking means, a second locking means for such door normally influenced to locking position, and means for holding such second locking means against locking operation and releasing the second locking means for locking operation through actuation of said means, said means being operated through any of said openings in said door other than the opening predetermined for the operation of the first locking means, whereby in an attempt to operate the first locking means through other than the predetermined opening the second locking means is released for locking the door.

3. In a bank protection apparatus, an enclosure having a door leading to an area to be protected, a normally operative locking means for said door, an element by which said locking means may be released, the door being formed with a plurality of similar openings, through a predetermined one of which said means is accessible, a second locking means for said door normally influenced toward locking position, means arranged within the door for holding said second locking means against locking movement, and an element operable through any of the openings other than the predetermined opening for the operation of the first mentioned locking means for releasing said second locking means for operative locking movement with respect to the door.

In testimony whereof I affix my signature.

ROSS HELMS.