

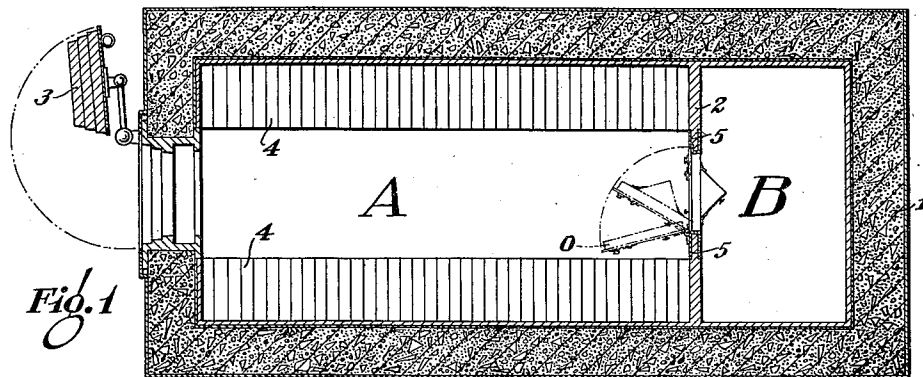
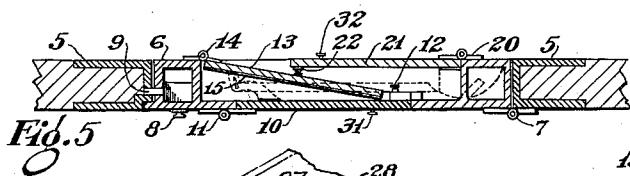
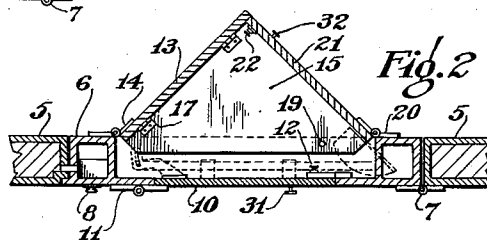
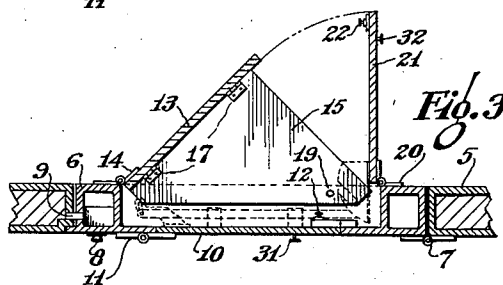
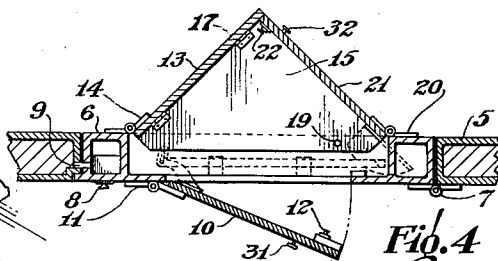
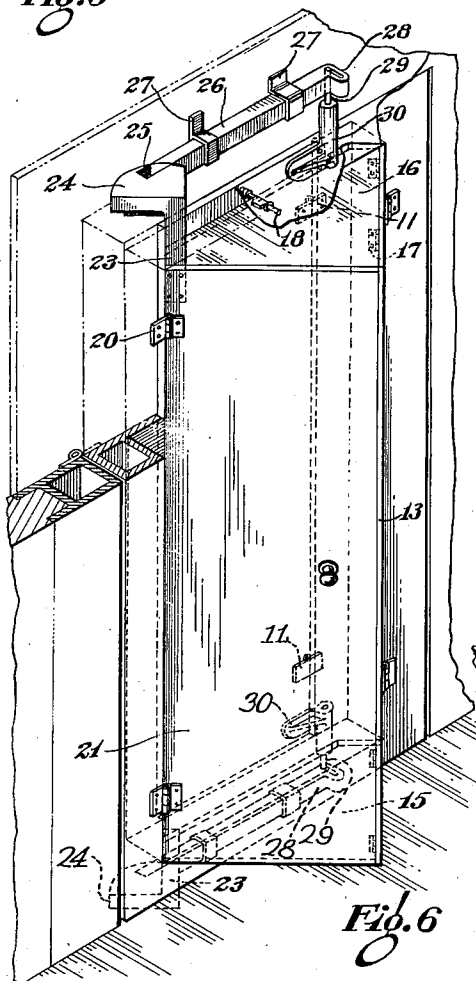
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2,076,765

PROTECTIVE DEVICE

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## UNITED STATES PATENT OFFICE

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## PROTECTIVE DEVICE

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14 Claims. (Cl. 20-1.01)

This invention relates to protective devices and to the prevention of robberies and the like, and is particularly applicable to vaults or similar spaces for the storage of valuables, such as are provided by banks and other institutions.

Such institutions as keep large amounts of cash and other valuable articles have been provided in the past with vaults or storage spaces having relatively impenetrable protecting walls and doors, to render access to the stored articles difficult. They also frequently are equipped with alarm systems and the like, and with armed guards, and other precautions are taken against theft. With a well constructed vault having adequate doors and locks, the breaking into the storage space is difficult, hence burglary of such vaults is infrequent. It will be noted that most recent thefts from banks and the like have been committed by robbery during business hours, the robbers intimidating the occupants of the institution while entering the vault and removing articles therefrom.

Of course, when the employees of a bank are confronted with armed robbers, they are not inclined to actuate alarms or do anything else which may precipitate unpleasant results upon them. If, however, the bank be provided with means for insuring removal of at least one of its personnel beyond the range of a robber's weapons, this person becomes free to operate alarms and the like, to release incapacitating gas, to lock all means of egress from the bank, or in any other manners to set into motion instrumentalities for the capture of the robbers.

It is an object of the present invention to provide an improved apparatus which will insure placing of at least one member of the personnel of a concern using it in a safe place, from which he can actuate any protective devices desired.

Another object is to provide an improved device for protecting one person, which may be mounted in a doorway such as that leading to a vault or to one chamber of a vault.

Another object of the invention is to provide an improved protecting device which may be mounted in a doorway but may be moved so that it will not obstruct the doorway.

Another object is to provide a device which may be folded, when not in use, into a relatively narrow space.

Other objects will hereinafter appear.

The invention will be better understood from the description of one practical embodiment thereof illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of a more or less typical small bank vault, in which the illustrated embodiment of the invention has been installed;

Figure 2 is an enlarged sectional plan view of the door shown in Figure 1 with parts in closed position;

Figure 3 is a view similar to Figure 2 showing the inner door of the device in partly open position;

Figure 4 is a view similar to Figures 2 and 3 but showing the outer door of the device in partly open position;

Figure 5 is a view similar to Figures 2 to 4 but showing the parts of the device in folded position; and

Figure 6 is a perspective view, parts being broken away, of the device in operative position, with both the inner and outer doors closed.

In Figure 1, a vault is shown having an outer chamber A and an inner chamber B, the two being surrounded by walls 1 and separated by a transverse partition 2. A door 3 through the outer wall provides access to the outer chamber A, this being the chamber in which are generally located safety deposit boxes 4 and the like.

Through the partition 2 is a doorway surrounded by a frame 5 in which is mounted a door so designed that only one person at a time may enter the inner chamber, and that while that person is passing through the door he will, as long as he desires, be entirely enclosed by bullet-proof walls and thus isolated from all other persons in either chamber of the vault.

This door consists of a peripheral frame 6 which, to eliminate confusion with the frame 5, will hereinafter be referred to as the "chassis". This chassis is connected to the frame at one side by hinges 7 and at the other side by a combination lock 8 controlling bolts 9. It will be understood that the outer portion of the chassis corresponds to that of a conventional vault door which might be swung upon the hinges 7 and used to close the opening through the frame 5. The chassis has hingedly connected to it three door or wall members. On the side facing compartment A is an outer door 10 supported by hinges 11 and arranged to entirely close the space through the chassis and to swing outwardly in the manner illustrated in Figure 4.

A lock 12 operable from the space within the chassis retains this door in closed position. On the inner side of the chassis is a wall or partition 13 pivoted upon hinges 14 so that it may be folded from the position shown in Figures 2 to 4 to that shown in Figure 5. This partition carries adja-

cent its upper and lower edges triangular floor and ceiling plates 15 and 16, respectively, attached to the frame by hinges 17, and which in operative position are held substantially normal to the partition by bolts or latches 18, or by springs or the like. The floor and ceiling plates have apertures adapted to receive lugs or pintles 19 fixed to the chassis to positively locate the partition 13.

Hinged to the other side of the interior of the chassis by hinges 20 is an inner door 21, arranged to swing into the chamber B as illustrated in Figure 3, and connected to the partition 13 by a latch 22. The inner door has fixed to it adjacent its hinged edge upwardly and downwardly extending brackets 23, each provided with a sector-shaped end 24 concentric with the pivots of hinges 20. Notches 25 are formed in the sector-shaped ends of these brackets, and arranged to enter these notches or be withdrawn therefrom are the ends of bars or bolts 26 slidably carried in bearings 27 secured to the chassis 5.

The other end of each bolt is provided with a slot 28 receiving a pin 29 carried by a bracket 30 which is secured to the outer door 10, the pin being eccentric to the axis of hinges 11.

Knobs or handles 31 and 32 are provided on the exterior of doors 10 and 21 by which either may be opened, but the latches or locks on these doors are operable only from the triangular prismatic space enclosed by these two doors and partition 13.

The operation of the device is as follows:—

The chassis, of course, is installed in the doorway in place of the usual type of door. At night or at other times when it is not desired to use the vault, door 10 is secured to the chassis by means of lock 12 and the chassis itself locked in place by the lock 8. If the chamber B is so filled at such times that the space normally occupied by the triangular rearward extension of the device is needed, partition 13 and door 21 may be folded, as shown in Figure 5, but if the space is not required they may be left extended as shown in the other figures.

When it is desired to remove articles of considerable size from the vault, as for instance upon opening a bank in the morning, when trays must be taken to the tellers' stations, combination 8 is actuated to release the door which is swung to the position shown at O in Figure 1, so that a clear passageway is provided. After removing such large articles as are desired, the chassis is locked within the frame 5, the catch 12, of course, having been released, and the parts arranged in extended position.

When a person desires to enter chamber B he first opens door 10 by pulling it outwardly as shown in Figure 4. This motion moves pins 29 to the right, as illustrated in this figure, causing the bars 26 to enter notches 25 and thus securely lock door 21 against movement. Having opened the door, the operator steps within the triangular space standing upon floor 15, and closes door 10 behind him. The space enclosed by the doors 10, 21 and partition 13 is so small that only one person may be received in it at a time. After closing door 10, which operation withdraws the bar 26 from the notch 25, the operator may open door 21 and the movement of sectors 24 causes them to overlie the ends of bars 26, rendering the opening of door 10 impossible, the parts being in the position shown in Figure 3. After passing to the interior of chamber B, the operator may close door 21 which renders the parts available for use by persons in either chambers A or B.

When a person has entered the vestibule within the device, he may, of course, actuate latches 12 and/or 22 to lock himself in. It will be understood that within the vestibule will be positioned means for actuating signals or other devices, so that in the event of robbery, as long as one of the personnel is safely within the vestibule, he can actuate any or all these devices and will be protected as long as he remains within the vestibule. It will also be apparent that it is desirable that lock 8 be a time lock or other mechanism which cannot readily be actuated.

The folding of the device as shown in Figure 5 serves three useful purposes; the first has already been referred to, namely that the apparatus may, when desired, be caused to occupy no more space than would a conventional vault door, so that the entire space within chamber B may be utilized; the second is that if the deposit boxes, walls, or other obstructions limit the outward swinging of the chassis so that the vestibule would project in front of the doorway, this vestibule may be folded out of the way, as shown in Figure 1; and the third is that the device may be folded, rendering it very compact for purposes of shipping, handling, and installation, without any necessity for dis-assembling its parts.

While I have described the illustrated embodiment of my invention in some particularity, obviously many others will readily occur to those skilled in this art, and I do not, therefore, limit myself to the precise details shown and described but claim as my invention all embodiments, variations and modifications thereof coming within the scope of the appended claims.

I claim:

1. A protective device comprising a chassis, three vertical panels pivotally connected thereto, two of the panels adapted to be swung outwardly from said chassis and with a third panel to enclose a triangular space, means for locking one of said panels in its outward position, and interlocking means interposed between the two remaining panels whereby when either is swung outwardly the other is locked against motion, the chassis being pivotally supported in a door frame.

2. A protective device adapted to be positioned in a doorway comprising a chassis, hinges supporting said chassis and connected to a door frame, a lock for retaining the chassis across the doorway, panels connected to said chassis and forming a vestibule having two doors, interlocking connections between said doors, and floor and ceiling members for said vestibule pivotally supported by the chassis.

3. A protective device comprising three vertical panels enclosing a generally triangular space and pivotally supported, two of said panels being arranged to swing outwardly from said enclosed space, and interlocking connection between said two panels whereby one only may be swung outwardly at a time, said connection comprising an eccentric pivot carried by one panel, a bolt slidable thereby, and a notched sector carried by the other panel.

4. A protective device comprising a chassis, three vertical panels pivotally connected thereto and arranged to be folded into substantially the plane of the chassis, two of the panels arranged to be swung outwardly from said chassis and with the third panel to enclose a triangular space, means for locking one of said two first mentioned panels in its outward position, interlocking means interposed between the other of the two and the third panel whereby when either is swung out-

wardly the other is locked against motion, and a pivotal support for said chassis.

5 5. A protective device adapted to be positioned in a doorway comprising a chassis, hinges supporting said chassis and connected to a door frame, a lock for retaining the chassis across the doorway, panels connected to said chassis and forming a vestibule having two doors, interlocking connections between said doors, and floor and ceiling members for said vestibule, said panels and floor and ceiling members being foldable substantially within said chassis.

10 6. A protective device comprising a chassis, supporting means supporting said chassis movably in a doorway, a plurality of panels pivotally carried by said chassis and surrounding an enclosed space in which a person may stand, two of the panels being selectively movable, and interlocking connections between said two panels, said panels being movable into substantially parallel positions.

15 7. A protective device comprising three panels enclosing a generally triangular space, two of said panels being pivotally supported to swing outwardly from said enclosed space, and interlocking connections between said two panels whereby when either of them is moved from space closing position the other is positively locked against movement, said panels being movable into substantially parallel positions.

20 8. A protective device comprising a chassis, three panels pivotally connected thereto and adapted to surround a generally triangular space, locking means locking one of said panels in the position they assume in surrounding the space, and interlocking means interposed between the other two panels whereby when either is moved from space surrounding position the other is positively locked against motion, said panels being movable into substantially parallel positions.

25 9. A protective device comprising a chassis, pivotal means supporting said chassis in a doorway, a lock for retaining said chassis in said doorway, panels carried by said chassis and forming a vestibule having two pivotally mounted doors selectively swingable away from said vestibule, and interlocking connections between said doors whereby when either is swung from vestibule closing position the other is positively locked against motion.

30 10. A protective device comprising a chassis, pivotal means supporting said chassis in a doorway, a lock for retaining said chassis in said doorway,

way, panels carried by said chassis and forming a vestibule having two pivotally mounted doors selectively swingable away from said vestibule, interlocking connections between said doors whereby when either is swung from vestibule closing position the other is positively locked against motion, and floor and ceiling members carried by said chassis and closing the top and bottom of said vestibule.

35 11. A protective device comprising a chassis arranged to be positioned in a doorway, a plurality of panels carried by said chassis and movable into two positions, in one of which they lie substantially in the plane of the chassis and in the other of which they surround a space sufficient to accommodate one person, and interlocking connections between two of said panels.

40 12. A protective device comprising three vertical panels surrounding a generally triangular space and pivotally supported, one of said panels being movable only into said triangular space and two of said panels being arranged to swing outwardly from said space, locking means for said first mentioned panel, and interlocking means between said two last mentioned panels, whereby only one may be swung outwardly at a time, said panels being movable into substantially parallel positions.

45 13. A protective device comprising a chassis, pivotal supporting means therefor arranged in a doorway, a lock maintaining said chassis across the doorway, three vertical panels surrounding a generally triangular space and pivotally supported, one of said panels being movable into only said triangular space and two of said panels being arranged to swing outwardly from said space, locking means for said first mentioned panel, and interlocking means between said two last mentioned panels, whereby only one may be swung outwardly at a time.

50 14. A protective device comprising walls defining a vestibule having two doorways and outwardly opening doors arranged to close said doorways, a rigid member positively connected with one of said doors and movable therewith, an abutment carried by the other door capable of being interposed in the path of said member whenever said last mentioned door is moved from its closed position, and when in the path of said member preventing movement of said member.

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