May 26, 1931. W. SACHS 1,806,953

BURGLARY PROTECTION SYSTEM

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FIG. II.

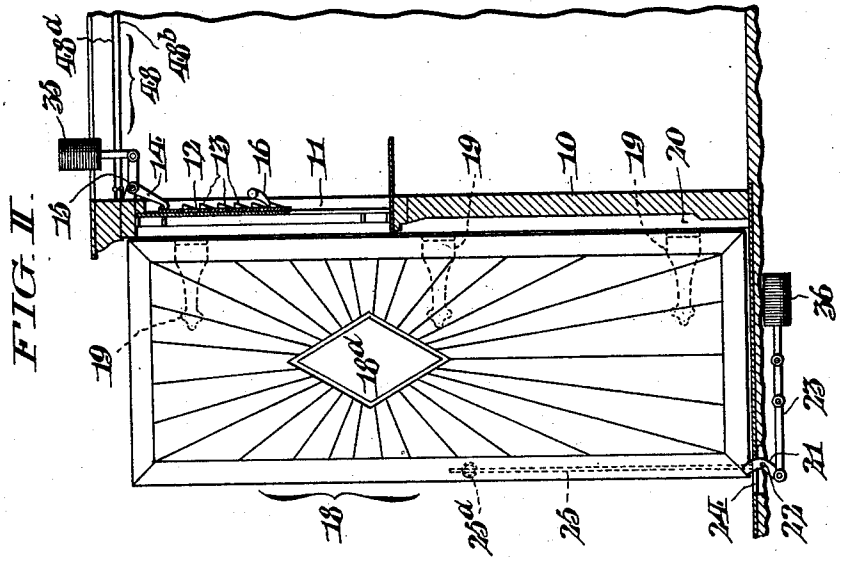
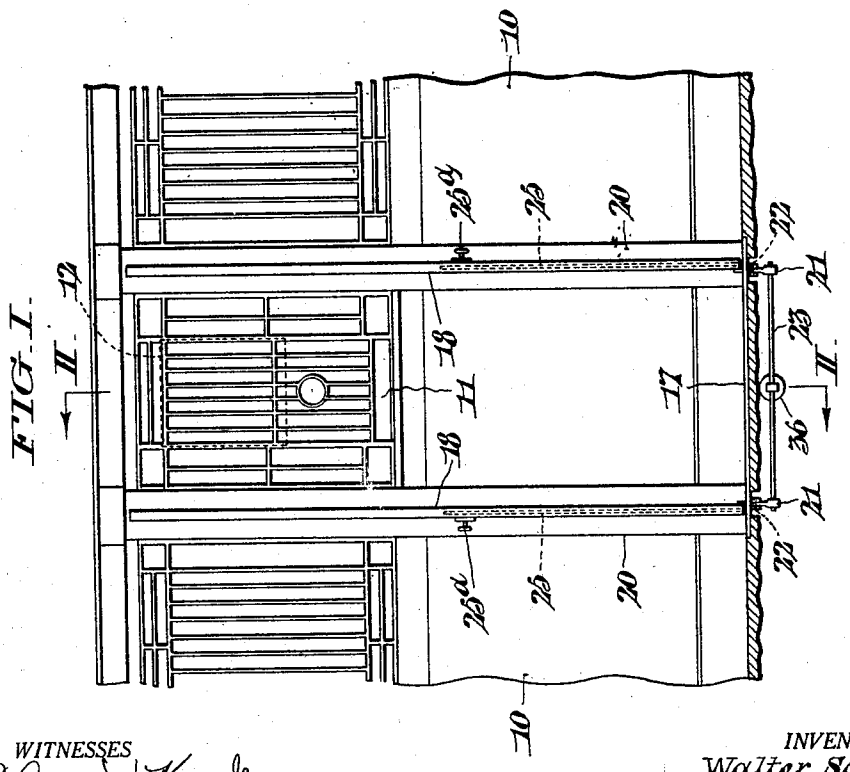


FIG. I.



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BURGLARY PROTECTION SYSTEM

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FIG. III.

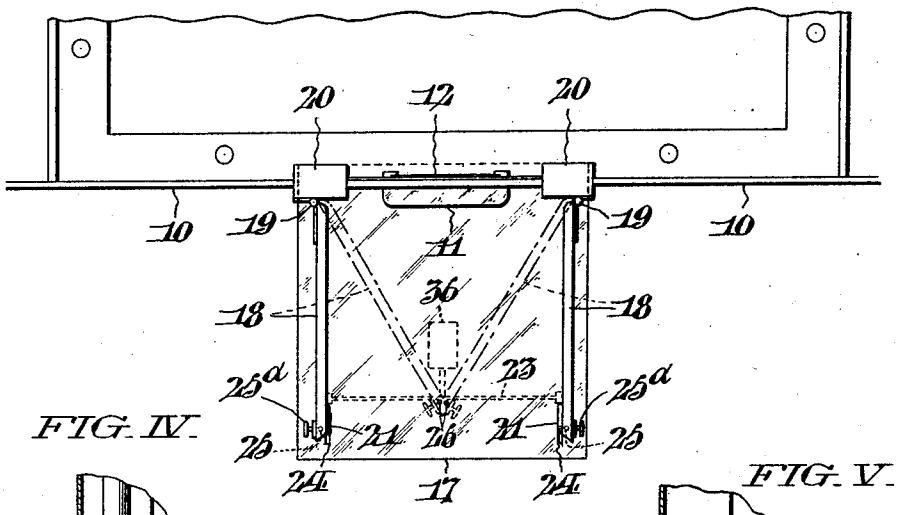


FIG. IV.

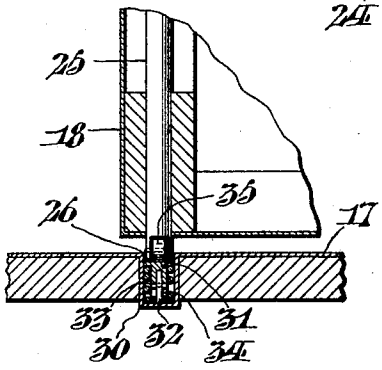


FIG. VII.

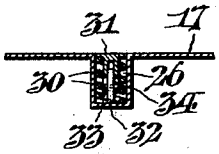


FIG. V.

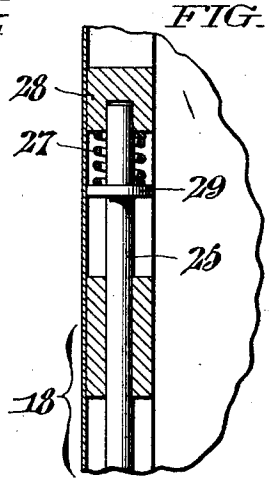


FIG. VIII.

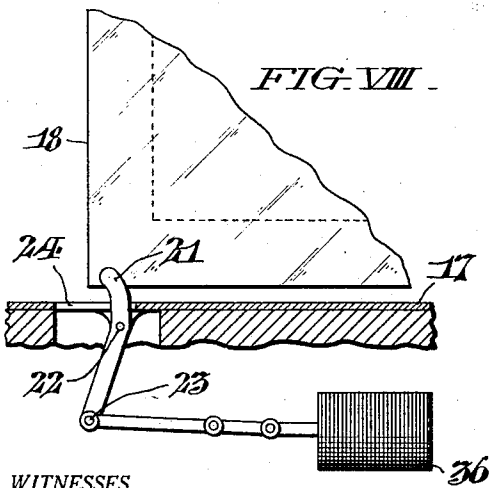
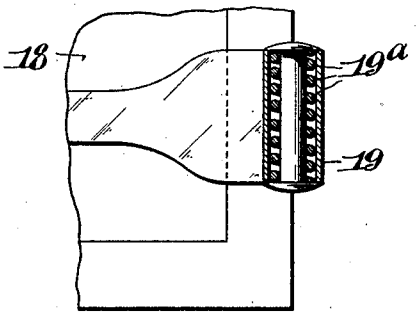


FIG. VI.



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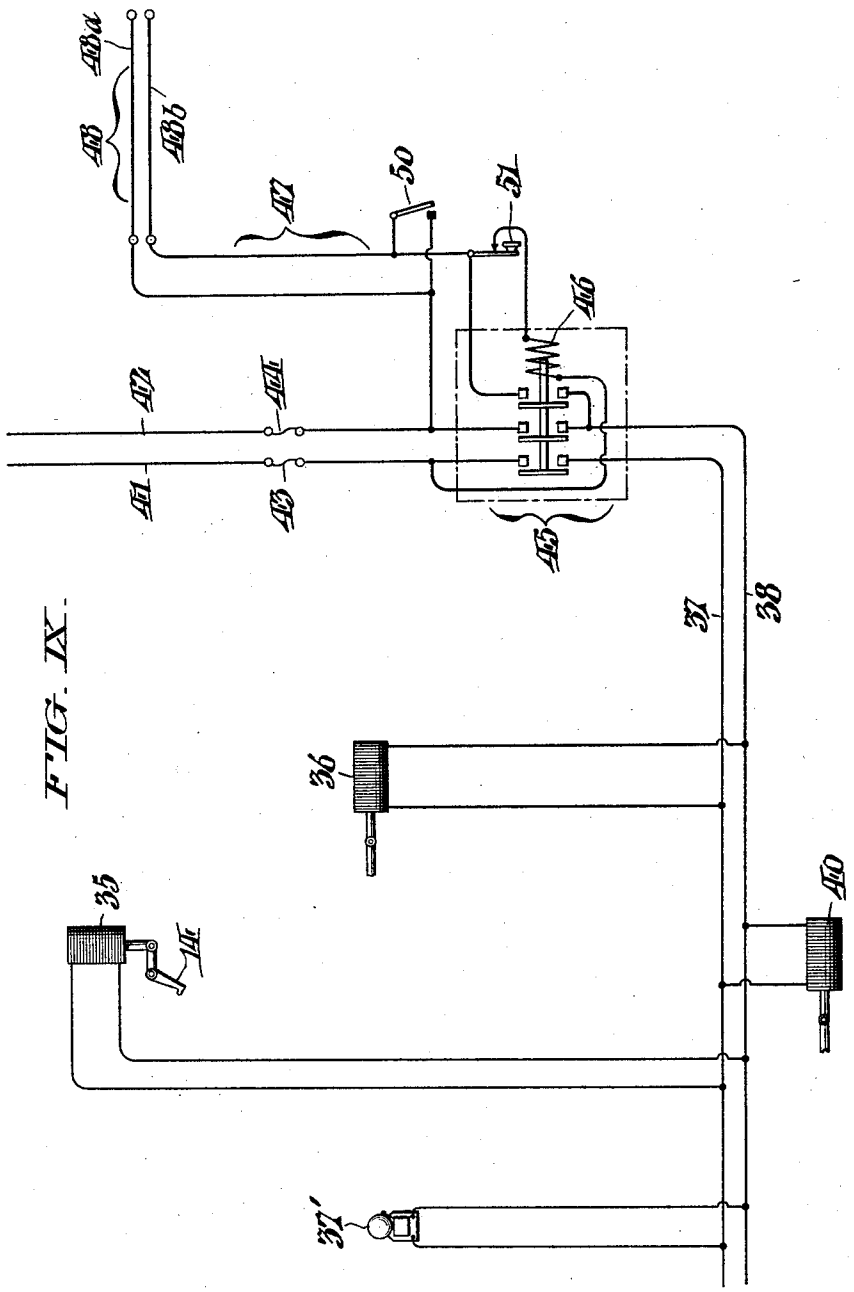


FIG. IX.

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UNITED STATES PATENT OFFICE

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BURGLARY PROTECTION SYSTEM

Application filed April 10, 1928. Serial No. 268,924.

This invention relates to systems for prevention of burglary, and more particularly to a type useful in banks or other monetary institutions.

The purpose of my invention is to enable, in the event of a burglary attempt, to care for all possible contingencies attendant upon such a situation: in other words, I aim to provide a safety system whereby the culprit is trapped, rendered harmless as regards use of fire arms or other offensive weapons, and whereby the doors of the building are closed and a general alarm sounded in the institution.

How the above desiderata may be conveniently attained in practice will be apparent from the detailed description which follows of the typical embodiment of this invention shown in the drawings, whereof Fig. I is a fragmentary view of the approach to a teller's window in a bank equipped with my improved protection system.

Fig. II is a transverse sectional view, taken as indicated by the arrows II—II in Fig. I.

Fig. III is a plan view of the various parts delineated in Fig I.

Figs. IV, V, VI and VII, are fragmentary sectional views showing certain details associated with burglar trapping doors featured in my invention.

Fig. VIII is a fragmentary detail view showing the means for releasing the doors for automatic closure to trap the burglar; and,

Fig. IX shows a wiring diagram and the various electrically controlled elements embodied in the system.

With reference first more particularly to Figs. I, II and III, 10 indicates a partition such as ordinarily employed in banks to set apart the space occupied by tellers, clerks, etc. Each teller's window, one of which is shown at 11, is equipped with a vertically sliding sash 12 embodying a metal frame with a bullet proof glass pane. As shown in Fig. II, the sash is provided at the back with a series of teeth 13, and is normally held in raised position by a hook catch 14 engaging the uppermost tooth, said catch being fulcrumed on a fixed stud 15. A spring pressed detent 16 also cooperates with the teeth 13 to lock the sash 12 in down position upon being released from the catch 14 as hereinafter described. A small area of the floor space immediately in front of the teller's window 11 is occupied by a metallic mat 17 which is overhung by a pair of doors 18, which are swingable on hinges 19 secured to columns 20 of the partitioning 10, said hinges having incorporated springs 19*a*, see Fig. VI, tending to move the doors 18 inward or toward each other. The doors 18 are constructed from armor plate with comparatively small bullet proof sight glasses 18*a*, and are normally held in the parallel open relation—shown in full lines in Figs. I, II and III—against the action of the springs 19*a* in their hinges 19, by stop fingers 21. These stop fingers 21 are respectively pivoted, as shown at 22 in Fig. VIII, beneath the plate 17 and joined at points below their pivots by a rod 23 for the purposes of simultaneous actuation; while their upper ends protrude through openings 24 in said plate to intercept the doors 18. When released to the hinge springs 19*a* through retraction of the stop fingers 21, it will be seen that the doors 18 will automatically swing to the angular positions shown in dotted lines in Fig. III with their free edges contacting and forming a triangular trap before the teller's window 11. Incidental to such inward movement, bolts 25 concealed in the doors 18 adjacent their frontal edges, automatically drop into sockets 26 in the floor plate 17, see Fig. IV. The drop of the bolts 25 as just explained is insured through helical springs 27 (Fig. V) in compression between abutments 28 in the door structures, and circumferential projections or collars 29 on said bolts. The springs 27 are sufficiently powerful to overcome the resistance of smaller springs 30 within the sockets 26 (Fig. IV), the latter being effective to normally hold plungers 31 with their tops flush with the upper surface of the floor plate 17, as shown in Fig. VII. The plungers 31 are held to true vertical movement by axial guide studs 32 secured in the bottoms of the sockets 26 and provided with transverse pins 33 which extend into motion limiting slots 34 in the plungers 31. Travel of

the bolts 25 over the top of the floor plate 17 is facilitated through provision of rollers 35 at their lower ends, see Fig. IV. To enable subsequent disengagement from the sockets 26, the locking bolts 25 are equipped with lifting knobs 25*a* which are accessible from the out sides of the trap doors 18.

As a convenient means to control release of the window sash 12 and the trap doors 18 in the event of a burglary attempt, I preferably employ electric means herein shown as having the form of solenoids 35, 36. By reference to the wiring diagram of Fig. XI, it will be observed that the solenoids 35, 36 are connected in parallel with conductors 37, 38 together with a general alarm means in the form of a bell 37′, and an electrically controlled tripping means 40 for the entrance doors (not shown) to the bank building, which doors may be of the same construction and operative in the same manner as the trap doors 18. There may of course be additional bells connected to the conductors 37, 38 if desired or required. Interposed between conductors 37, 38 and the power or line wires shown at 41, 42 having inserted fuses 43, 44 is a three plate magnetic switch 45, the magnet coil 46 of this switch connected in a separate circuit 47 receiving current from the line wires 41, 42, said circuit being normally open as a consequence of its termination in an overhead separated contact means 48 located in the teller's enclosure, see Fig. II. This contact means may be in the form of a false ceiling consisting, for example, of two spaced bare wire screens conventionally indicated at 48*a*, 48*b* in Figs. II, IX. I may also provide in the teller's enclosure a push button switch 50 (Fig. IX) as an auxiliary means to close the circuit 47, and also a normally closed cancelling switch 51 functional in a manner later on explained.

The operation of my protective system is as follows: In the event that a hold-up man presents himself at the front of the teller's window 11 with the demand that the teller hold up his hands, the latter complying, touches the false ceiling 48 within his enclosure, thereby bringing the screens 48*a* 48*b* into contact and closing the circuit 47. As a consequence, the magnet 46 of the switch 45 is energized to effect closure of the switch contacts for supply of current from the line wires 41, 42 to the conductors 37, 38. This action results in sounding of the alarm 37′, and energization of the solenoids 35, 36 and 40 with attendant release of the teller's window sash 12, which is thereafter held locked by the detent 16, release of the trap doors 18 to automatically close in upon the burglar and release of the bank doors to close in a like manner. The hold-up man is thereby made a prisoner and rendered absolutely helpless against the use of fire arms or other weapons due to the armored construction of the trap doors 18, while the teller is protected by the bullet proof glass sash 12 now down over his window 11. With the arrival of help summoned through sounding of the signal 37, the prisoner may be subdued in any suitable manner, for example by throwing of a tear bomb into the trap. To enable subsequent removal of the prisoner, the cancelling switch 51 is opened with consequent de-energization of the magnet coil 46 to permit the bridging contacts of the switch 45 to move back to the position illustrated. Upon lifting of the locking bolts 25 from the sockets 26 in the floor plate 17 by means of the knobs 25*a*, the trap doors 18 may be swung open to the normal position, and the prisoner apprehended.

Having thus described my invention I claim:—

1. The combination in a burglary protection system for banks and the like of oppositely-swingable bullet-proof doors at opposite sides of the front of a teller's enclosure, means tending to swing the doors toward each other, means to normally hold the doors in open position, trip devices controlling the door holding means, an associated trip normally retaining a bullet-proof sash elevated at the inner side of the teller's window, and overhead electric contact means within the teller's enclosure in circuit with the trips aforesaid and operative to release both doors so as to form a triangular trap and concurrently release the sash for gravity closure.

2. The combination in a burglary protection system for banks and the like of oppositely-swingable bullet-proof doors at opposite sides of the front of a teller's enclosure, springs tending to swing the doors towards each other, means to normally hold the doors in open position, automatically actuated bolt means to arrest the doors in closed position, electric trips controlling the door holding means, an associated trip normally retaining a bullet-proof sash elevated at the inside of the teller's window, means to lock the sash in lowered position when released, and overhead contact means within the teller's enclosure in circuit with the trips aforesaid and operative to release both doors to form a triangular trap and concurrently release the sash for gravity closure.

3. The combination in a burglary protection system for banks and the like of oppositely swingable bullet-proof doors at opposite sides of the front of a teller's enclosure, springs tending to swing the doors towards each other, means to normally hold the doors in open position, automatically actuated bolt means to arrest the doors in closed position, electric trips controlling the door holding means, an associated trip normally retaining a bullet-proof sash elevated at the inside of the teller's window, means to lock the sash in lowered position when released, overhead contact means within the teller's enclosure in

circuit with the trips aforesaid and operative to release both doors to form a triangular trap and concurrently release the sash for gravity closure, and a cancelling switch to enable restoration of the entire system to normal condition.

In testimony whereof, I have hereunto signed my name at Lancaster, Pa., this 4th day of April, 1928.

WALTER SACHS.