Jan. 15, 1929. 1,699,281

E. DABROWSKI

AUTOMATICALLY CLOSING DOOR FOR BANKS

Filed March 10, 1928

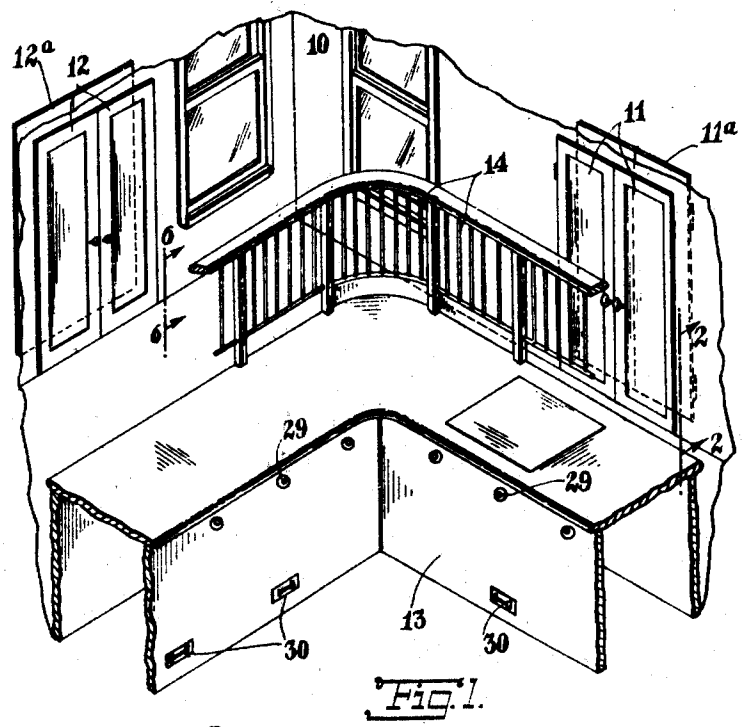


Fig. 1.

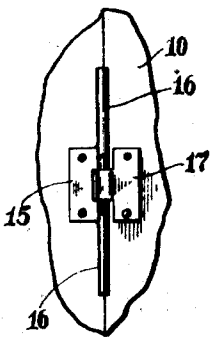


Fig. 8.

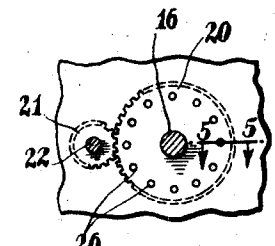


Fig. 4.

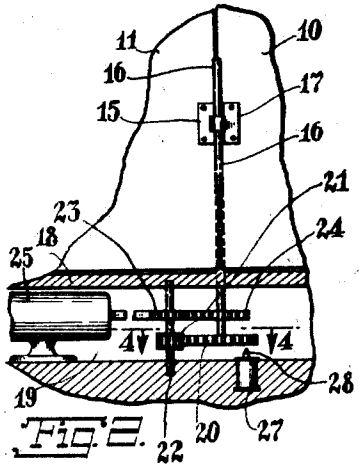


Fig. 2.

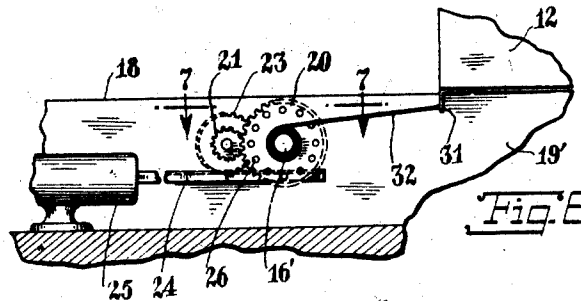


Fig. 6.

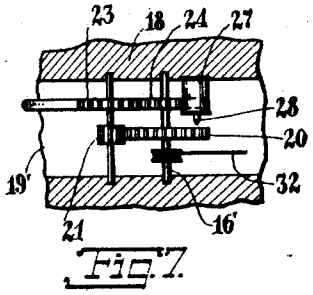


Fig. 7.

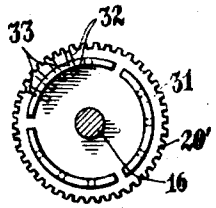


Fig. 8.

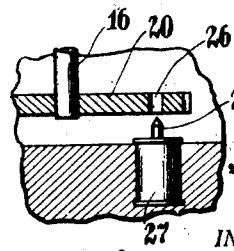


Fig. 5.

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UNITED STATES PATENT OFFICE.

EUGENE DABROWSKI, OF ST. JAMES, NEW YORK.

AUTOMATICALLY-CLOSING DOOR FOR BANKS.

Application filed March 10, 1928. Serial No. 260,717.

This invention relates generally to doors, and has more particular reference to automatically closing doors for banks and similar institutions.

The invention has for an object the provision of a device of the class mentioned which is of simple durable construction, desirable and efficient in action, and which can be manufactured and sold at a reasonable cost.

In banks and institutions dealing in valuables, the possibility of robbery and hold-up is always present. This invention is intended for such institutions, and consists of a means for automatically closing the doors of the institution upon the pressing of a button by any person within the building. Many of these buttons may be arranged at various places in easy reach of the employees and officials of the said premises. In case of hold-up and robbery any one of the buttons may be pressed to automatically close the doors, and prevent the escape of the bandits. The invention is applicable to both hinged and sliding doors.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Referring to the accompanying drawing, forming a material part of this disclosure:

Fig. 1 is a fragmentary perspective view of the interior of a bank having doors constructed according to this invention.

Fig. 2 is a fragmentary vertical view, partly shown in section, of one of the doors, looking in the direction of the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical front detail view of the hinge construction of the door.

Fig. 4 is a fragmentary horizontal sectional view, taken on the line 4—4 of Fig. 2.

Fig. 5 is a fragmentary vertical sectional view, taken on the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary vertical front view, partly shown in section of another door, this door being a sliding type door, with the same device applied thereto, looking in the direction of the line 6—6 of Fig. 1.

Fig. 7 is a fragmentary horizontal sectional view, taken on the line 7—7 of Fig. 6.

Fig. 8 is a detail face view of a modified form of gear, similar to the large gear shown in Fig. 4.

The reference numeral 10 indicates the walls of a bank provided with hinged type doors 11, and outer doors 11^a and sliding type doors 12 and outer doors 12^a. Within the walls there is a counter 13 provided with customary protecting bars 14.

Each door member 11 and 11^a has one of its edges hingedly connected with the wall 10 or other support by means of a flange 15 integral with shafts 16 and pivotally connected to a second flange 17 attached to the wall 10.

The shaft 16 adjacent the floor 18, extends into a cavity 19 within the floor. A gear 20 is attached to the rod, and meshes with a pinion 21 on a shaft 22 rotatively mounted and provided with a second gear 23 meshing with a rack 24 connected with the core of solenoid 25. The gear 20 is formed with a plurality of apertures 26 on one of its circular elements, and a second solenoid 27 is fixedly mounted and has a pointed core 28 aligned with one of the apertures 26. The solenoid 25 is wired in a circuit including push buttons 29 so that upon depression of any one of the buttons 29 the solenoid will be energized to draw its core inwards. The solenoid 27 is wired in a circuit including switches 30 so that upon closing of any one of the switches the solenoid 27 will be energized to thrust its core outwards.

Each door member 12 is provided with a lug 31 connected with a flexible member 32 wound about shaft 16′ mounted in a cavity 19′ within the floor. A gear 20 is attached to the shaft 16′, and connects with a pinion 21, gear 23, rack 24 and a solenoid 25 as before described also a solenoid 27 is similarly related to gear 20 as before described, and solenoids 25 and 27 are wired as before described.

In operation, the doors 11, 11^a and 12, 12^a being assumed in completely opened condition, one of the buttons 29 is manually pressed inwards to close the circuit of the solenoids 25. The solenoids 25 upon being energized move their cores inwards, thus moving the racks 24, which motion is communicated to gears 23, pinion 21, and finally to gear 20 and shafts 16 and 16′. As the shaft 16 turns towards the left referring to Fig. 2, the door 11 turns to close, and like-

wise as the shaft 16′ turns counterclockwise referring to Fig. 6, the door 12 slidably moves to close.

When the doors are closed to an extent so that it is impossible for a person to squeeze thru, one of the switches 30 is manually closed. This causes the solenoids 27 to become energized, and moves cores 28 outwards into one of the apertures 26 of the gear 20, as a means for locking the doors against further opening. Thus persons or policemen can shoot thru the slightly opened doors at the bandits.

In Fig. 8 a modified form of gear 20 has been shown, referred to on the drawing by numeral 20′. The gear has a plurality of arcuate slots 31 and radial apertures 32 extending from the periphery across the slots. Slots 33 may be placed in the apertures 32 so as to divide the slots into sections. These pins may be placed in each aperture, or may be removed and placed in every other aperture as a means for changing the number of sections the slots are divided in, as a means for allowing the gear 20′ to slightly turn when locked by core 28, so that the door 11 may also be similarly moved. The door 12 may be manually completely closed, but can not be opened further than determined by the gear 20 and core 28.

While I have shown and described a preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention what I claim as new and desire to secure by United States Letters Patent is:—

1. In combination with a closable door, a shaft connected to close the door upon rotation, a gear formed with a plurality of apertures and attached on the shaft, means for rotating the said gear, and a means for engaging a core within one of the apertures of the said gear for locking the door in partially closed condition against further opening.

2. In combination with a closable door, a shaft connected to close the door upon rotation, a gear formed with a plurality of apertures, attached to the shaft, a second shaft provided with a pinion meshing with the gear, and with a second gear, a solenoid having its core connected with a rack meshing with the second gear, and a second solenoid having its core engageable with one of the apertures of the first mentioned gears, for locking the door in partially closed condition against further opening.

In testimony whereof I have affixed my signature.

EUGENE DABROWSKI.