Nov. 25, 1924.

1,517,136

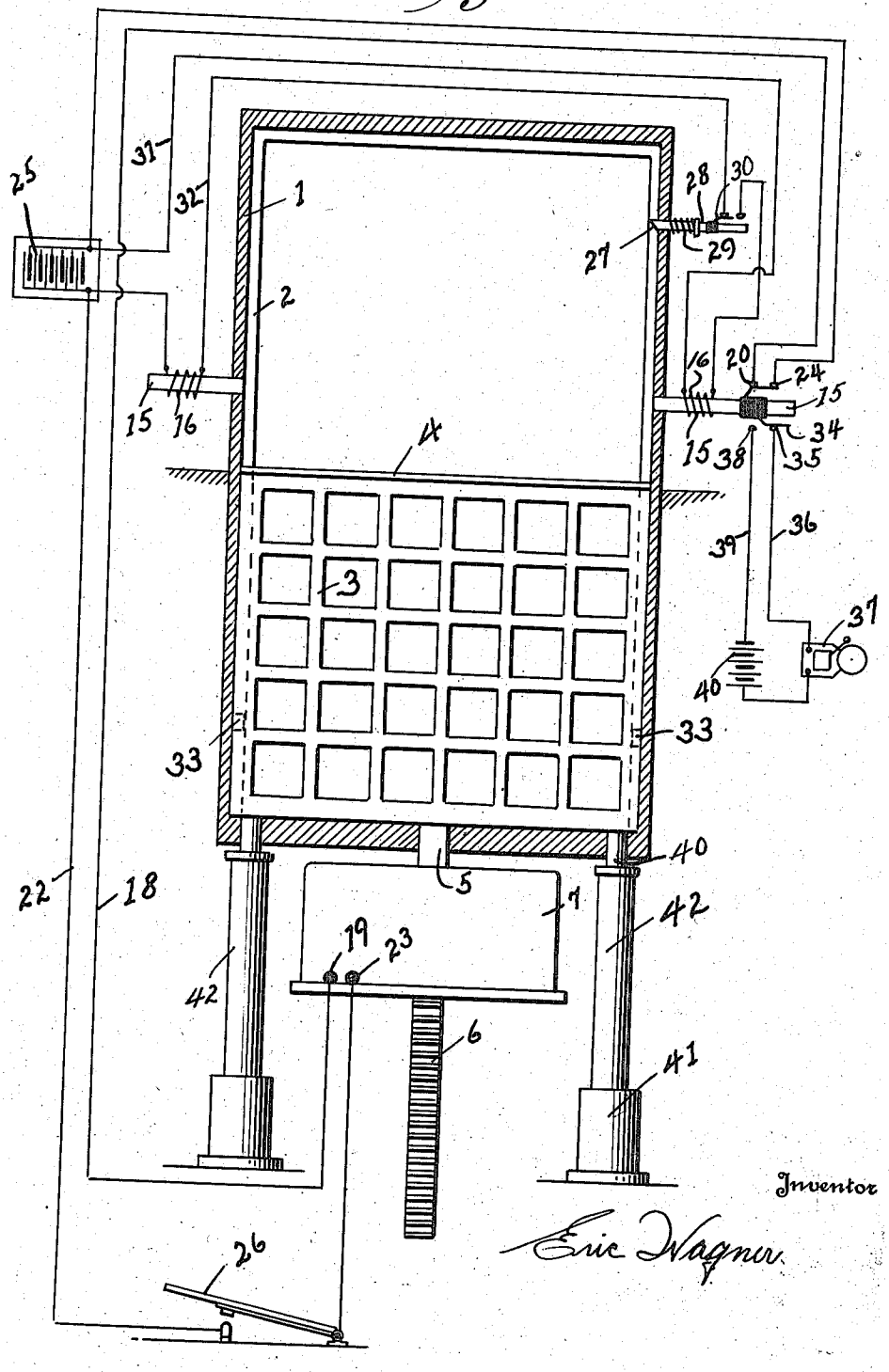
E. WAGNER

BANK PROTECTING DEVICE

Filed March 12, 1923

2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

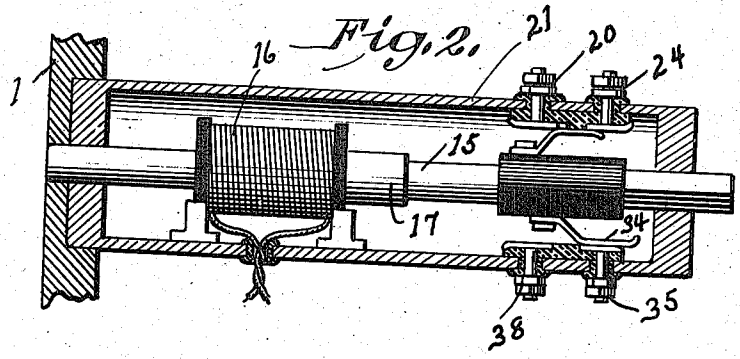


Fig. 3.

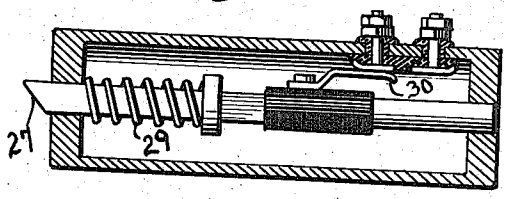


Fig. 5.

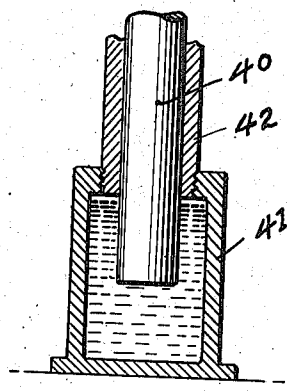


Fig. 4.

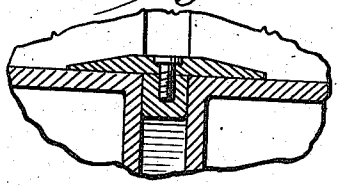


Fig. 6.

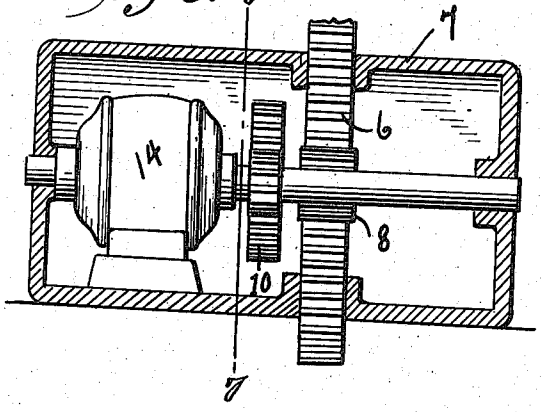
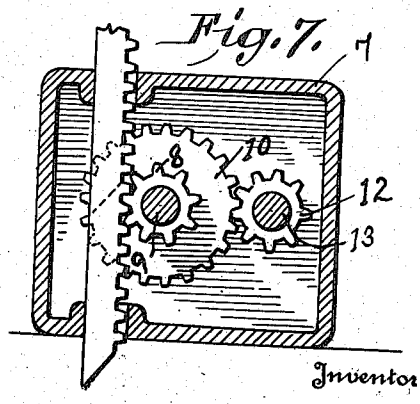


Fig. 7.



Inventor

Eric Wagner

Patented Nov. 25, 1924. 1,517,136

UNITED STATES PATENT OFFICE.

ERIC WAGNER, OF MILWAUKEE, WISCONSIN.

BANK-PROTECTING DEVICE.

Application filed March 12, 1923. Serial No. 624,592.

To all whom it may concern:

Be it known that I, ERIC WAGNER, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in a Bank-Protecting Device, of which the following is a specification.

This invention relates to a bank protecting device and has for its prime object to provide a simple and effective mechanism for raising the grating and closing the doorway leading out of a bank building.

A further object of my invention is to provide an electrically operated door closing device adapted to be operated by the closing of an electric switch positioned at any convenient point within reach of one of the employees of the bank, so that if an attempt is made to hold up the bank, the bank employee can instantly close the passageway leading from the bank by stepping on the electric switch, thus starting a motor for raising a grating within the doorway and trapping the bank robber within the bank.

A still further object of my invention is to provide a device of the above indicated character wherein an electric circuit will be closed by raising of the grating and an alarm will be sounded at any desired point, such as a police station, and the alarm will continue to sound as long as the grating forms a closure for the doorway.

And a still further object of my invention is to provide means positioned beneath the doorway comprising cylinders in which a fluid of any desired nature is contained to act as a shock absorber for the grating when same is being lowered to open the doorway leading into and from the bank building.

These and like objects of the invention will be better understood as the description follows and as is specifically pointed out in the appended claims.

Referring to the accompanying drawings which form a part of this specification and which clearly illustrate the construction and operation of my invention,

Figure 1 indicates a passage-way leading to a bank building, showing same equipped with my improved bank protecting device and signal alarm.

Figure 2 is a longitudinal section, showing the lock bolts for the grating.

Figure 3 is a longitudinal section, showing the circuit closing mechanism for the sounding of an alarm.

Figure 4 is an enlarged fragmentary section of the sliding grating and guide-way therefor.

Figure 5 is an enlarged fragmentary view of one of the shock absorbing cylinders and pistons positioned therein.

Figure 6 is a longitudinal section through the motor casing, showing the sliding means therein for elevating the grating, and

Figure 7 is a vertical section taken on line 7—7 of Figure 6.

Referring to the accompanying drawings in detail, like characters will be used to designate like parts in the different views.

In the drawings, the numeral 1 indicates a doorway leading to a bank or other building, having a track 2 adapted to act as a guide for movement of a grating 3, which is positioned below the floor of the bank building, the top 4 of the grating 3 adapted to lie flush with the floor when the grating 3 is concealed in the lower pocket of the doorway. It is to be understood that in the construction and installation of my bank protecting device, that same is to be so mounted in the doorway that no evidence of the sliding grating is to be visible to a would-be bank robber.

The grating 3 has formed integral on the lower end of same a shaft 5 which is provided with a rack bar on one side of same as indicated by the numeral 6, the rack bar extending approximately the entire length of the shaft. The rack bar 6 of the shaft 5 is adapted to pass through a casing 7 and to mesh with a gear 8 keyed on a shaft 9. A second gear 10 is also keyed to the shaft 9 and is adapted to mesh with a gear 12 keyed on a drive shaft 13, which is in turn operated by a motor 14. Both of the shafts 9 and 13 are journalled in the ends of the casing 7, as is clearly indicated in Figure 7.

Magnetic locking bolts 15 are positioned on opposite sides of the doorway 1 and are adapted to pass through the sides of the casing, as is clearly indicated in Figure 1. A magnetic coil 16 is positioned over each of the bolts 15 and each of the bolts are also provided with an iron cylinder fitting tightly over same as indicated by the numeral 17.

A lead wire 18 is connected at one end to the motor as at 19 while the opposite end of the wire is connected to a terminal 20 car-

ried by a casing 21 in which the magnetic bolt 15 is positioned. The wire 18 is only connected to the magnetic bolt 15 on the right hand side of the doorway. A second wire 22 is connected to the motor as at 23 while the opposite end is connected to a terminal 24 also carried by the casing 21. A battery 25 and a switch 26 are positioned in the wire 22. Thus it will be seen that upon any attempt to hold up and rob a bank, that the grating 3 can be elevated to close the passage-way from the building by one of the employees of the bank stepping on the switch 26, which will start the motor 14 and through the arrangement of gears operated on the rack face 6 of the shaft 5 to elevate the grating. As the grating moves upwardly on the guide track 2, one side of same engages a cam 27 of a bolt 28 which extends through one side of the casing of the doorway above one of the magnetic bolts 15. As the door strikes against the cam face of the bolt 28, the same is moved outwardly against tension of the spring 29, thus causing the switch 30 to close a circuit between the lead wires 31 and 32, thus energizing the magnets 16 and causing the magnetic bolts 15 to move inwardly until the ends of same engage recesses 33 formed in the side edges of the grating 3.

From the foregoing description of my invention, it will be seen that upon stepping on the switch 26 that the grate is elevated to close the passage-way and just before the grate reaches its upmost position, the bolt 28 is moved outwardly to bring the magnetic bolts 15 into engagement with the recesses 33 and thus hold the grating in a closed position relative to the doorway, regardless of the fact as to whether or not the switch 26 is open after the grating reaches its upmost position.

One of the magnetic bolts 15 is provided with a switch 34, which engages a terminal 35 of a wire 36 which connects at the opposite end to a bell or other suitable alarm 37, which can be positioned at a desirable point, preferably at a police station. When the bolt 15 moves inwardly to engage the recess 33, the switch 34 closes a circuit to terminal 38 and wire 39 which is connected to the bell 37. A battery 40 is positioned within the wire 39. It will therefore be seen that as long as the grating is up that the circuit will be closed between the wires 36 and 39, thus causing the bell to continually ring.

When it is desired to lower the grating to its concealed position beneath the floor, the bolts 15 are pulled outwardly until the ends of same disengage the recesses 33, and the weight of the grating automatically causes same to return to its concealed position. It is to be understood that when the bolts 15 are pulled outwardly the circuit is also broken between the wires 36 and 39 and that as soon as the grating has passed the cam 27 of the bolt 28, the circuit between wires 31 and 32 is also broken.

In order to prevent the grating from descending too rapidly, pistons 40 are formed on the bottom edge of the grate and are adapted to enter cylinders 41 through connecting pipes 42. The cylinders 41 are each filled with shock absorbing fluid, so that the downward movement of the grating 3 is prevented from descending too rapidly, the pistons 40 being of sufficient length to reach the cylinders 41 and to bring the grating to its lowermost position, as indicated in Figure 1. The upper end of each of the connecting pipes 42 is beveled so as to easily receive the pistons 40 therein.

While I have shown the foot lever 26 connected at one end to the floor, it is to be understood that any means for fastening the lever to the floor may be employed, such as having the axis of the lever resting in the center so that the current of the motor may be released by toe pressure and closed by heel pressure. It is also to be understood that a lever 26 is to be positioned within reach of all the employees of the bank.

While I have shown a battery system for operating the motor, it may also be operated by means of a direct or alternating current from some other source with a magnetic rectifier installed in the circuit feeding the coils.

In view of the foregoing description of my invention, it is thought that any further explanation as to the construction, operation, and objects of same are unnecessary.

From the foregoing, it can be readily seen that I have not only provided a bank protecting device which is simple in construction and operation, durable and efficient, but one that can be manufactured and installed within a bank building at a relatively low cost.

While I have shown and described the preferred form of the invention, I realize that various minor changes may be resorted to, without departing from the spirit and scope of the invention as claimed, and therefore, I do not wish to limit myself to the exact details of construction shown, nor to the combination and arrangement of parts.

What I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, the combination of a doorway, a sliding grating positioned beneath the doorway, means for raising said grating to close said doorway, a switch member adapted to be engaged by said grating when raised, and means to be operated by the movement of said switch member for locking said grating in a raised position.

2. In a device of the character described, the combination of a doorway, a sliding

grating positioned beneath the doorway, means for raising said grating to close said doorway, a switch member adapted to be engaged by said grating when raised, and a pair of locking bars arranged upon both sides of said grating to be operated by the engagement of said grating with said switch member for locking said grating in raised position.

3. In a device of the character described, the combination of a doorway, a sliding grating positioned beneath the doorway, means for raising said grating to close said doorway, a switch member adapted to be engaged by said grating when raised, a locking bar upon the side of said grating, and an electric magnet arranged about said locking bar adapted to be energized when the grating engages said switch member to slide said locking bar to hold said grating in raised position.

4. In a device of the character described, the combination of a doorway, a sliding grating positioned beneath the doorway, means for raising said grating to close said doorway, a switch member adapted to be engaged by said grating when raised, a casing positioned at the side of said doorway, a locking bar arranged in said casing, an electric magnet arranged about said bar and adapted to be energized when the grating engages the switch member to slide the locking bar for holding the grating in raised position, said locking bar adapted to extend beyond said casing so that the same may be withdrawn from engagement with said grating to allow the same to be lowered.

5. In a device of the character described, the combination of a doorway, a sliding grating positioned beneath the doorway, means for raising said grating to close said doorway, a yieldable switch member adapted to be engaged by said grating when raised, a locking bar upon the side of said grating, an electric magnet arranged about said bar adapted to be energized when said grating engages said switch member to slide said locking bar for holding the grating in raised position, said locking bar so arranged that the same may be held out of engagement with said grating to allow the same to be lowered until said grating has come out of engagement with said yieldable switch member to deenergize said electric magnet.

In testimony whereof, I have affixed my signature in the presence of two witnesses.

ERIC WAGNER.

Witnesses:
SIMON SZOHR,
JOS. REITER.