No. 649,933. Patented May 22, 1900.

J. HUESTON.

ELECTRIC RELEASING DEVICE FOR SHUTTERS.

(Application filed Aug. 19, 1899.)

(No Model.) 2 Sheets—Sheet 1.

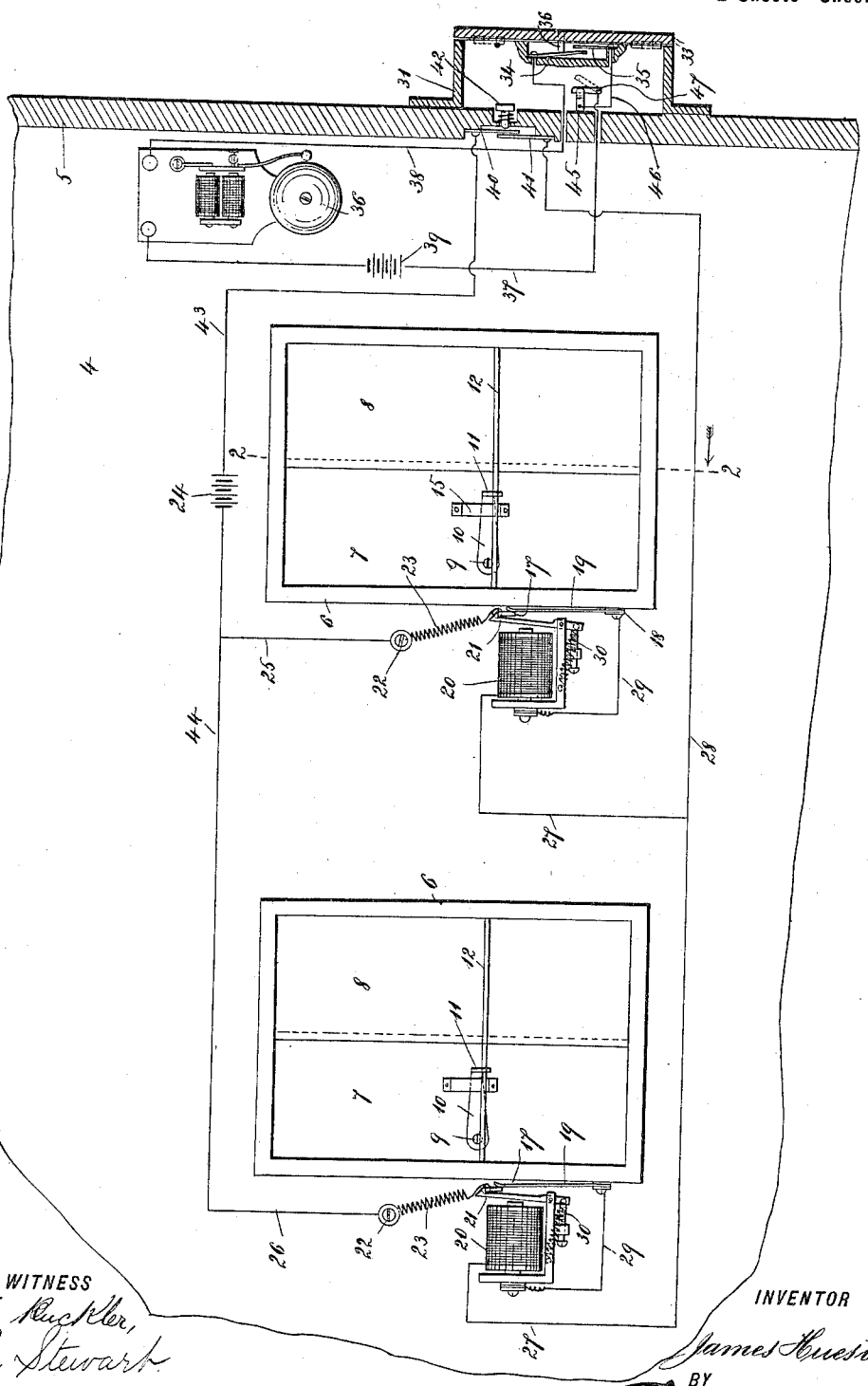

FIG. 1.

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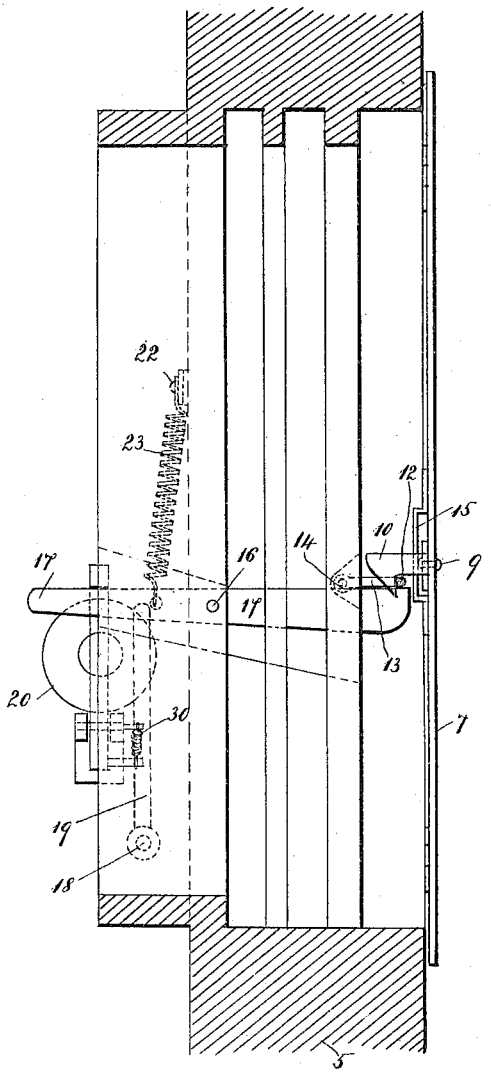
Fig. 2.



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ELECTRIC RELEASING DEVICE FOR SHUTTERS.

SPECIFICATION forming part of Letters Patent No. 649,933, dated May 22, 1900.

Application filed August 19, 1899. Serial No. 727,755. (No model.)

To all whom it may concern:

Be it known that I, JAMES HUESTON, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric Releasing Devices for Shutters, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for unlocking the window-shutters of warehouses and similar structures; and the object thereof is to provide an improved electrical apparatus of this class and also an alarm which may be operated when the shutters are unlocked.

In large warehouses and similar structures it is frequently necessary and desirable in case of fire to be able to unlock all the shutters at once, so that the said shutters and windows may be conveniently opened; and one of the objects of this invention is to provide a simple and effective apparatus for this purpose which may be operated at any time by a party in possession of the key of the door which controls the operative mechanism, a further object being to provide an apparatus of the class described by means of which an alarm device may be operated when said door is opened either by a party having the right to open said door or by any other person or persons.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side elevation of the apparatus I employ and showing in vertical section the wall of a building to which the apparatus is applied, and Fig. 2 a partial section on the line 2 2 of Fig. 1.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in said drawings, reference being made to Fig. 1, I have shown at 4 and 5 the walls of a warehouse or similar structure, and at 6 two windows therein.

The windows 6 are provided with shutters 7 and 8, which in practice are hinged in the usual manner, and the free edge of the shutter 7 overlaps the free edge of the shutter 8, and pivoted to the inner side of the shutter 7, as shown at 9, is a latch 10, provided with an inwardly-directed angular extension 11, which when the shutters are closed is adapted to engage with a transverse rod or bar 12, provided with angular end extensions 13, pivoted to the window-frame at 14, as shown in Fig. 2.

The transverse rod 12 is adapted to move vertically within certain limits, as is also the free end of the latch 10, which passes through the keeper 15, secured to the shutter 7.

Supported transversely of one side of the window-frame and pivotally supported at 16 is a lever 17, the outer end of which projects beneath the rod or bar 12 and the front end of which projects into the building, as shown in Fig. 2, and secured to the window-frame at 18, below the lever 17, is a spring 19, the upper end of which is adapted to come in contact with the inner end of the lever 17.

An electromagnet 20 is supported adjacent to the lever 17 or the inner end thereof, and said magnet is provided with a pivoted armature 21, which is also adapted to make contact with the inner end of the lever 17 and to hold said inner end of said lever in the position shown in the drawings, said armature being provided at its upper end with a catch-head for this purpose, and secured above the lever 17, as shown at 22, is a spiral spring 23, the lower end of which is connected with said lever, as shown in Fig. 2.

In the drawings forming part of this specification I have shown two of the windows with the operative apparatus hereinbefore described connected therewith, and in practice I provide and locate at any desired point a battery 24, which is connected with the supports 22 of the springs 23 by wires 25 and 26, and the magnets 20 are also provided with wires 27, which connect with a main circuit-wire 28, and said magnets are also in electrical connection with the springs 19 by means of wires 29, and the pivotally-supported armature 21 of each magnet is held in the normal position shown in Fig. 1 by a spring 30.

Secured to the outer surface of the wall 5 is a box or casing 31, having a hinged door 33, and within said box or casing are supported two contact-springs 34 and 35, and the door

33 is provided with a pin 36, which is adapted to bear on the spring 34 when said door is closed and to break the connection between the springs 34 and 35. The spring 35 is in connection with an alarm device 36 by means of a wire 37, and the spring 34 is also in connection with said alarm device by means of a wire 38, and the circuit thus formed is provided with a battery 39, which forms a part thereof.

Within the building or secured to the inner surface of the wall 5 are two contact-springs 40 and 41, which are normally separated, but which are adapted to be forced into contact by a push-button 42, and the spring 41 is in connection with the main circuit-wire 28 and the spring 40 with a corresponding main circuit-wire 43, which connects with the battery 24, and said battery is also provided with a corresponding main circuit-wire 44, with which the wires 25 and 26 are connected.

From the foregoing it will be seen that the alarm device 36 is in an open circuit, which is adapted to be closed by opening the door 33, and the locking devices for the shutter are in an open circuit, which is adapted to be closed by the button 42 after the door of the box or casing 31 has been opened.

If at any time the door should be opened, the spring contact devices 34 and 35 will be thrown into connection, and the circuit will be established through the wires 37 and 38, the battery 39, and the alarm device 36, and said alarm devices will be operated. After the door 33 is opened a push on the button 42 will throw the contact-springs 40 and 41 into connection, and the circuit will be established through the wires 28 and 42 through the battery 24, the wires 44, 25, 26, and 27, and through the magnet 20 and springs 23 and 19. The armatures 21 of said magnets will thus be operated and will be drawn outwardly and disconnected from the inner ends of the lever 17, and the springs 23 will draw the inner ends of said levers upwardly. The transverse rods or bars 12, thus being freed from their supports, drop downwardly and are disconnected from the latches 10 and the shutters are unlocked. It will thus be seen that the opening of the door 33 sounds the alarm, and pressure on the push-button 42, after said door has been opened, unlocks the shutters, and it will also be understood that this apparatus may be applied to any number of windows and shutters with which a building is provided. The wire 37, which connects the spring 35 and the battery 39, accomplishes this result through the agency of a binding-post 45 and a wire 46, which is directly connected with the spring 35 and with said binding-post, and the wire 37 is directly connected with a pivoted switch 47, which is adapted to be turned into or out of connection with the binding-post 45, and when the door 33 has been opened and the alarm device 36 operated, as hereinbefore described, said alarm device may be thrown out of operation by turning the switch 47 outwardly, as shown in dotted lines in Fig. 1.

The entire apparatus is simple in construction and operation and is well adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In an apparatus of the class described, a building provided with a movable window-shutter, electrically-operated devices for locking said shutters, a box or casing suitably arranged, means mounted in said box or casing for closing an electrical circuit through said electrically-operated devices, an electrically-operated alarm device, means mounted in said casing for operating the same, and a closure for said box or casing, the relative arrangement and construction being such that when said closure is operated to allow access to said box or casing, said alarm device will be operated, substantially as shown and described.

2. In an apparatus of the class described, a building provided with window-shutters, electrically-operated devices for locking said shutters, a box or casing secured to the wall of the building and provided with a hinged door, and a push-button located in said box or casing and adapted to be operated to close an electric circuit in which said electrically-operated devices are placed, said building being also provided with an electrical alarm device which is operated by the opening of the door of said box or casing, substantially as shown and described.

3. In an apparatus of the class described, a building provided with a movable window-shutter, locking devices for said shutter, a tensionally-retracted lever for maintaining said locking device in operative position, an electromagnet provided with a movable armature arranged to maintain said lever in position to maintain said locking devices in operative position, and means for closing an electric circuit through said electromagnet, substantially as shown and described.

4. In an apparatus of the class described, a building provided with shutters, devices for locking said shutters, a lever for operating said locking devices, a spring connected with said lever and adapted to operate it to unlock the shutters, an electromagnet provided with a pivoted armature for holding said lever in position to lock said shutters, said magnet being in an open electric circuit, and a box or casing secured to a wall of the building and provided with a hinged door, said box or casing being provided with a push-button for closing said circuit, substantially as shown and described.

5. In an apparatus of the class described,

a building provided with shutters, devices for locking said shutters, a lever for operating said locking devices, a spring connected with said lever and adapted to operate it to unlock the shutters, an electromagnet provided with a pivoted armature for holding said lever in position to lock said shutters, said magnet being in an open electric circuit, and a box or casing secured to a wall of the building and provided with a hinged door, said box or casing being provided with a push-button for closing said circuit, and said building being also provided with an electrical alarm device which is operated by the opening of said door, substantially as shown and described.

6. A building provided with hinged shutters, electrically-operated devices for operating said shutters, a box or casing secured to the wall of a building and provided with a hinged door, an electrical alarm device operated by the opening of said door, and a push-button located in said box or casing and adapted to close an open circuit in which said electrically-operated devices are located, substantially as shown and described.

7. The herein-described apparatus for releasing shutters, comprising a pivoted bar arranged transversely of the closed shutters, the free edge of one of which overlaps the free edge of the other of which, a latch pivoted to one shutter and arranged to engage said bar, a pivoted spring-retracted lever arranged to support said bar in elevated position, an electromagnet provided with a movable armature which operates in connection with said lever to maintain the same in engagement with said bar, and means for closing an electrical circuit through said electromagnet to release said lever, substantially as shown and described.

8. The herein-described shutter-releasing apparatus and alarm device arranged to operate in connection therewith, comprising electrically-operated locking devices which operate in connection with said shutter, an electrical alarm, a first electric circuit in which said electrically-operated locking devices are included, a second electrical circuit in which said electrical alarm is included, a circuit-maker for said first electrical circuit, and a circuit-maker for said second electrical circuit, said circuit-makers being so relatively arranged that said circuit-maker for said second electrical circuit must be operated before said circuit-maker for said first electrical circuit, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 25th day of July, 1899.

JAMES HUESTON.

Witnesses:
V. M. VOSLER,
K. E. LANGTRY.