

(No Model.)

2 Sheets—Sheet 1.

E. J. M. SCHEEREN.
ELECTROMAGNETIC LOCKING DEVICE.

No. 580,820.

Patented Apr. 13, 1897.

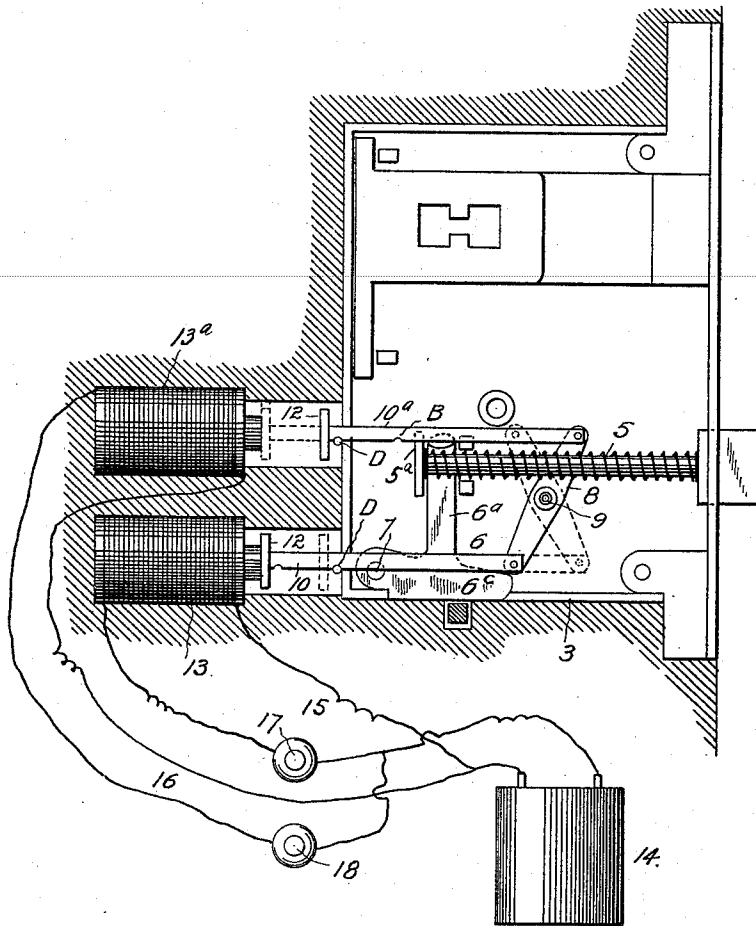


FIG. 1

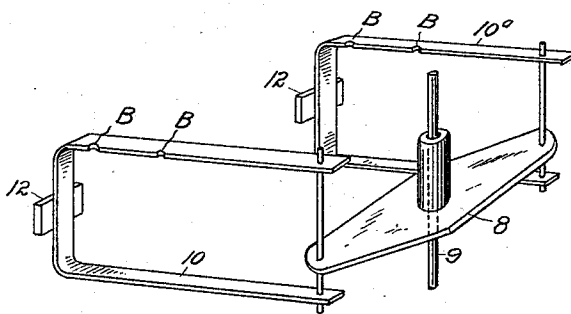


FIG. 2

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By his Attorney *J. B. Brien*

(No Model.)

2 Sheets—Sheet 2.

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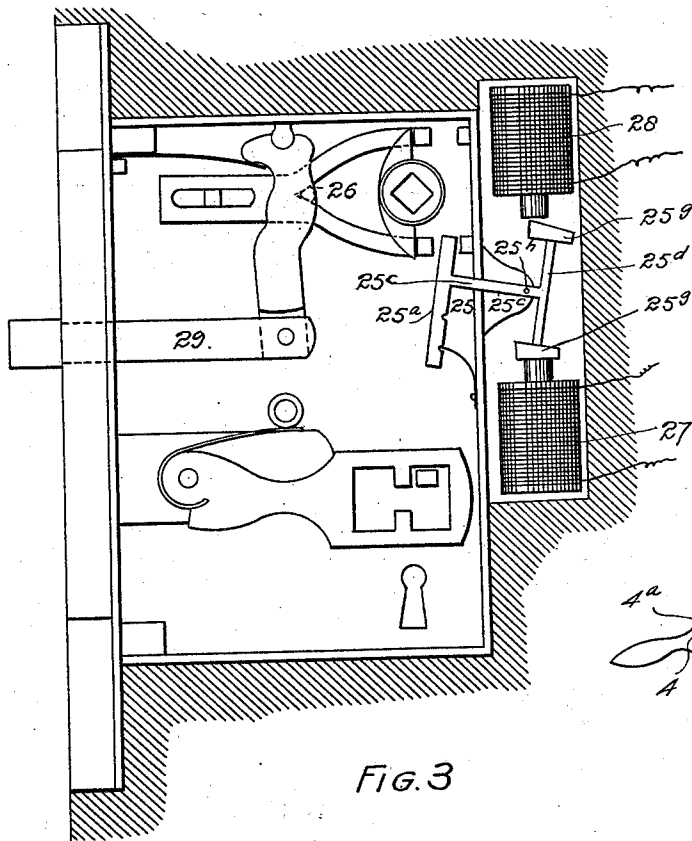


FIG. 3

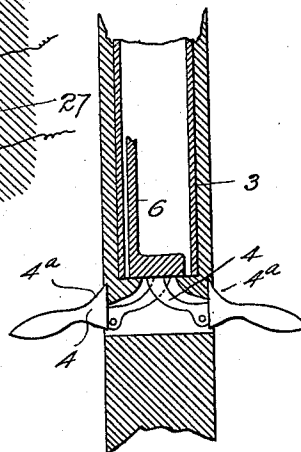


FIG. 5.

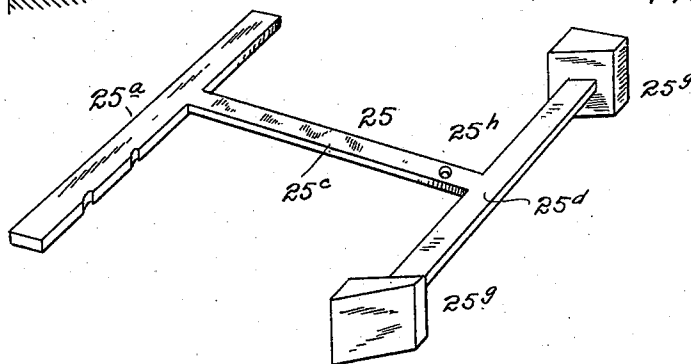


FIG. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

EGIDIUS JULIUS M. SCHEEREN, OF DENVER, COLORADO.

ELECTROMAGNETIC LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 580,820, dated April 13, 1897.

Application filed October 13, 1896. Serial No. 608,758. (No model.)

To all whom it may concern:

Be it known that I, EGIDIUS JULIUS M. SCHEEREN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Electromagnetic Locking Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in electromagnetic appliances for locking doors, whereby the movement of the spring-held bolt by the knob or other actuating device is prevented by pressing a push-button.

The invention consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 shows my improvements connected with or applied to a lock for an outside door, one plate of the lock-casing being removed. Fig. 2 is a perspective view in detail of the device shown detached from the lock. Figs. 3 and 4 illustrate another form of construction applied to a lock for an inside door and operated on the same principle. Fig. 5 is a section taken through the lock-casing, illustrating the construction of the thumb-levers.

Referring first to Figs. 1, 2, and 5, let the numeral 5 designate the spring-held bolt, normally adapted to be withdrawn by pressing either of two thumb-levers 4, (see Fig. 5,) which engage and actuate a bell-crank lever 6, fulcrumed at 7. The levers 4 are fulcrumed in the door just below the lock-casing, which is provided with an opening to allow the thumb-levers to act on the lever 6. The levers 4 are provided with guard-flanges 4^a to prevent the insertion of anything from the outside that might interfere with the working of the levers. The arm 6^a of the lever 6 engages a stop 5^a, attached to the inner extremity of a bolt 5. If the bell-crank lever is actuated or turned on its fulcrum, the arm 6^a thereof will

press against the stop 5^a and withdraw the bolt from the locking position. To enable me to prevent this withdrawal of the bolt, I employ an arm 8, pivoted on a post 9, attached to the lock-casing. To the extremities of the arm 8 are movably attached two yokes 10 and 10^a, respectively. The outer extremities of these yokes project beyond the lock-casing and carry pole-pieces 12, composed of soft iron or other magnetic material, located in suitable proximity to two electromagnets 13 and 13^a. These magnets are electrically connected with or placed in the circuits 15 and 16, respectively, of a battery 14 or other suitable source of electricity. These circuits are normally open, but may be closed by pressing the push-buttons 17 and 18, respectively. If the push-button 17 is pressed, the magnet 13 is energized and acts on the yoke 10 through the soft-iron pole-piece 12 and shifts the arm 8 to the position shown in the drawings. (See Fig. 1.) When the arm 8 is in this position, one of its extremities lies in the path of the arm 6^a of the bell-crank lever 6 and prevents the movement of said lever. Hence the bolt 5 cannot be withdrawn when the arm 8 is in this position.

When it is desired to open the door, the button 18 is pressed, momentarily closing the circuit 16 and energizing the magnet 13^a, which, acting on the pole-piece 12 and the yoke 10^a, reverses the position of the arm 8 or shifts it to the position shown by dotted lines in Fig. 1. When in this last-named position, the arm 8 presents no obstacle to the withdrawal of the bolt 5, which may be operated at will.

The yokes 10 and 10^a are provided with shallow recesses B, adapted to engage stop-pins D when the yokes have reached their limit of movement in either direction. These pins temporarily lock the yokes in either position of adjustment, but do not interfere with their movement when acted on by the magnets. This construction allows the owner or person in charge of a store to lock the door or doors leading from the establishment into the street by simply pressing a button. A thief or other evilly disposed person may thus be locked in and prevented from escaping.

In the construction shown in Figs. 3 and 4 the device 25 is employed. This device is

composed of the parts 25^a, 25^c, 25^d, and 25^g. The part 25^a is located within the lock-casing, while the part 25^d is exteriorly located and provided with the pole-pieces 25^g, composed of magnetic material, as soft iron. The parts 25^a and 25^d are rigidly connected by the part 25^c, which is pivoted to the casing at a point 25^h. One arm of the part 25^a is adapted to lie in the path of the device 26, which must be actuated in order to withdraw the bolt 29. The device 26 is connected with the bolt 29 by an arm 30. This is an ordinary lock mechanism and therefore need not be illustrated or explained in detail.

15 The two magnets 27 and 28 are energized by closing the push-button circuit and are adapted to act upon the device 25. If the magnet 28 is energized, the part 25^a is projected into the path of the device 26, whereby the latter cannot be actuated by turning the knob of the door or in the ordinary manner. On the other hand, if the magnet 27 is energized the device 25 is actuated in such a manner as to withdraw the part 25^a from the path of the device 26, leaving the bolt 29 free to be withdrawn in the usual manner.

25 Having thus described my invention, what I claim is—

30 1. The combination with the lock-casing, of an arm pivoted on the casing and inclosed

thereby, said arm being adapted to move into the path of the bolt-withdrawing device, yokes respectively attached to the arm extremities and carrying pole-pieces projecting beyond the lock-casing, two distinct electromagnets located in suitable proximity to these pole-pieces respectively, circuits normally open, in which the magnets respectively lie, and suitable means, as push-buttons, for alternately and momentarily closing the circuits, substantially as described.

2. The combination with a locking mechanism, of a suitable device movably attached to the casing and adapted to be projected into the path of the bolt-withdrawing instrumentality, two electromagnets adapted, when energized, to act respectively on two oppositely-located parts of the said device, and two push-button circuits in which the magnets respectively lie, whereby when one magnet is energized, the device is shifted in one direction, and when the other magnet is energized a reverse movement is imparted to the said device.

In testimony whereof I affix my signature in presence of two witnesses.

EGIDIUS JULIUS M. SCHEEREN.

Witnesses:

G. E. MCCARN,

G. J. ROLLANDET.