

(No Model.)

F. APITZ.  
ELECTRIC LOCK.

No. 525,400.

Patented Sept. 4, 1894.

Fig. 1.

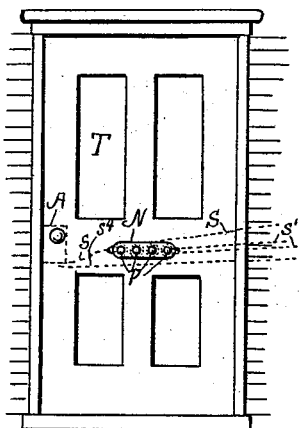


Fig. 3.

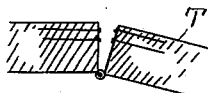


Fig. 2.

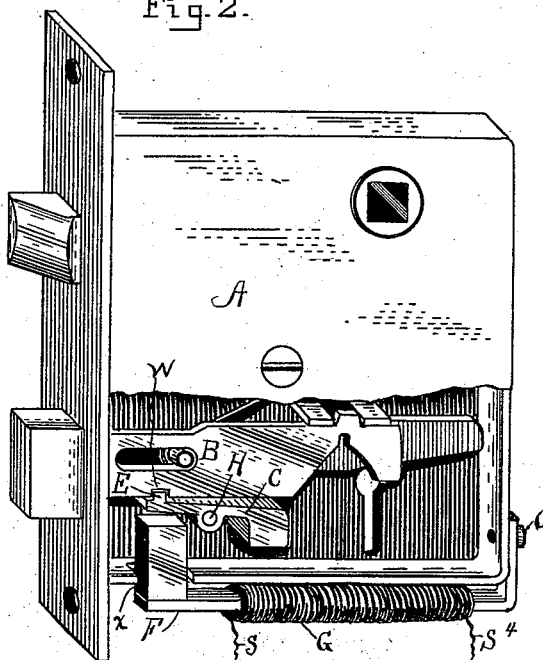


Fig. 4.

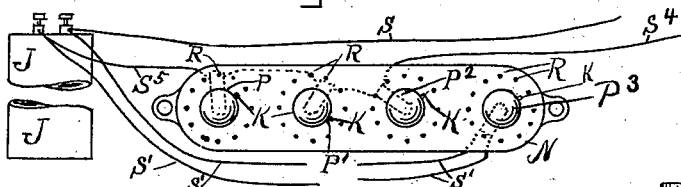


Fig. 6.

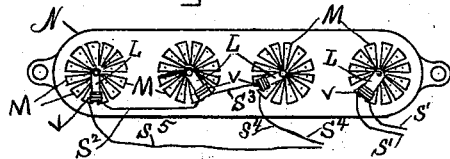


Fig. 5.

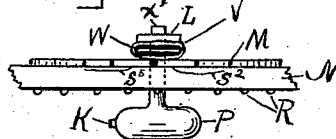
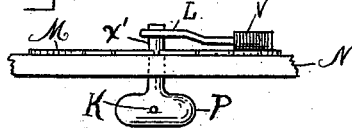


Fig. 7.



Witnesses:

Ray Hutchins.  
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Inventor:

Frederick Apitz

By Thos Hutchins - Attorney.

# UNITED STATES PATENT OFFICE.

FREDERICK APITZ, OF LOCKPORT, ILLINOIS.

## ELECTRIC LOCK.

SPECIFICATION forming part of Letters Patent No. 525,400, dated September 4, 1894.

Application filed May 31, 1894. Serial No. 512,990. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK APITZ, a citizen of the United States of America, residing at Lockport, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Electric Attachments for Door-Locks, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a side view of an ordinary door, showing the lock and electric wires in broken lines, and the plate to which the circuit breakers are attached in full lines. Fig. 2 is a perspective view of an ordinary door lock having a portion of one of its sides broken away exposing to view the bolt, tumbler armature and electro magnet. Fig. 3 is a cross section of a portion of a door and its jamb, showing the manner in which the electric wires may come in contact when the door is closed. Fig. 4 is a face view of the door plate for carrying the circuit breakers, and a side elevation of the battery, and the electric wires connected thereto. Fig. 5 represents a portion of the door plate showing the edge of one of its switch boards or circuit breakers, and knob for turning the switch. Fig. 6 is a back view of the door plate showing its switches or circuit breakers and wires connected thereto and Fig. 7 represents a portion of the door plate showing the edge of one of its switch boards or circuit breakers and knob for turning the switch.

This invention relates to certain improvements in electric attachments for door locks by means of which the lock bolt is prevented from being moved backward by the key until released by means of the electric apparatus, which improvements are fully set forth and explained in the following specification and claims.

The object of this invention is to apply to an ordinary door lock an electro magnet arranged in such manner that its armature may engage the lock bolt when the electric current is broken, and to release the said bolt when the electric current is established, which current is broken or established by means of a switch or a series of switches located at any convenient place in the wire

line, said switch being connected to the shank of a knob having an index point moving over a dial, so that the operator must have knowledge of the means of setting said index to the proper point on the dial or dials so as to turn the switches to form a current by making the wire continuous.

Referring to the drawings A represents an ordinary mortise lock having a lock bolt B provided with a notch *n* in its under side for receiving the lug E on the upper side of the oscillating armature C of the electro magnet *x* which may be located in or adjacent to the lock; but is shown in this device as being attached to the soft iron arm F attached at O to the lock case, and having the line wire S, S<sup>4</sup> wound on it to form the coil G. The armature is pivoted near its center on the pin H, and is weighted at its outer end so as to bring its opposite end in contact with the lock bolt when the electric current is broken.

N is a plate that may be secured to the side of the door T as shown in Fig. 1. or at any other desirable place. This plate is provided with a series of knobs K having their shanks *x'* journaled in suitable boxes in said plate, which shanks have secured on their inner ends arms L, having wound on their outer ends a coil of wire *v*, but insulated from arms L by means of some insulating material W placed between said arm and coil as shown in Fig. 5.

M are a series of radially arranged brass arm plates surrounding each knob shank *x'* and secured to the back of plate N by being screwed or tacked thereto, and over the ends of which the coil *v* moves and in contact therewith. The ends of the wires are connected with said radially arranged plates M by means of having their ends passed under said plates, and held in contact therewith by means of said plates being screwed or nailed to plate N. It is intended to have the wires connected to two adjacent plates M as shown in Fig. 6 so that when coil *v* is moved so as to be in contact with said two adjacent plates M it will close the electric circuit.

J is an ordinary battery for generating the electric current which may be located at any convenient place near the door. S is a line wire connecting said battery with the coil G of the magnet. S<sup>5</sup> is a line wire connecting

said battery with one of the radial plates at the shank of knob P as shown in Fig. 6.

S<sup>2</sup> is a wire for connecting one of the radial plates M of knob P adjacent to the one connected with wire S<sup>5</sup>, with one of said radial plates of knob P'.

Wire S<sup>3</sup> is a wire for connecting one of the radial plates M of knob P', adjacent to the one connected with wire S<sup>2</sup>, with one of said radial plates of knob P<sup>2</sup>, and wire S<sup>4</sup> connects coil G of the magnet with a radial plate of knob P<sup>2</sup> adjacent to the one connected with wire S<sup>3</sup>. When the arms L of the shanks x' of the knobs P, P', P<sup>2</sup> are turned as shown in Fig. 6 so as to cause their coils v to be severally in contact with the two radial plates of each series that are connected with the wires as aforesaid the circuit is closed and armature C will be attracted by the magnet x and withdrawn from contact with the bolt B so it may be moved by a key. To break the circuit all that is necessary is to turn one of said knobs to a different position from that shown in Fig. 6, so that the coils v of the arm L of the knob turned will not connect the two wires, when the magnet x will cease to attract the armature, and it will then engage the lock bolt as shown in Fig. 2, so it cannot be moved by a key. The face of the plate N has dials with each knob, but instead of having numbers on the dials similar to a clock, pins or studs R are used in their place corresponding in number with the numbers on a clock dial, and the knobs have laterally projecting studs K for being turned to point to any particular stud R. Fig. 3 shows how the wires may be arranged to permit the door to be opened and closed. The wires may enter the door through holes leading to the electro magnet, the portion in the door being in contact with the remaining portion only when the door is closed. The wires S' are intended to connect the battery J with two adjacent radial plates M. of the knob P<sup>3</sup>, one of which wires is intended to have an ordinary call bell located somewhere within its length and located in some room in the house and used as an alarm, and not connected with the lock bolt or magnet.

In operation, supposing the door to be closed and locked and the armature in the position shown in Fig. 2, so the lock bolt cannot be moved backward by a key, caused by the electric circuit being broken. The person desiring to enter and unlock the door must turn the several knobs P, P', P<sup>2</sup> until an electric current is established as hereinbefore set forth. By having the knowledge of what stud R it is necessary to have stud K on the

knob point at, he can easily turn all three of the knobs to the proper position to cause the circuit to be closed as before stated, when the armature will release the bolt B so a key will move it. As the wires may be changed so as to connect with any others of the radial plates M. than those shown, the combination can be thus changed quickly so as to cause it to be necessary to leave stud K stand opposite a different stud R. As the studs or pins R are not numbered, it is intended that the operator will understand that each one represents the number corresponding to that position on a clock dial, so it is unnecessary to number these studs R. When locking the door to go away the said knobs are intended to be turned in order to break the circuit in order to cause the armature to engage the lock bolt as stated. Should a stranger undertake to turn the knobs to establish the circuit without previous knowledge of where to turn them, or how to turn them, he would no doubt not be able to turn them to their proper position, and would likely also turn the alarm knob P<sup>3</sup> and alarm the inmates of the house. Of course any number of circuit breakers like those shown may be used, the more used making it more difficult for a stranger to use the device.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of the lock bolt B, having notch W, armature C pivoted on stud H and having its outer end weighted, electro magnet x, F having the coil G, battery J, wire S for connecting said coil and battery, knobs P, P', P<sup>2</sup>, each having index studs K and shanks x', arms L connected to said shanks at the end opposite the knob, and insulated coils v on the outer ends of said arms, radial plates M, plate N having studs R, wires S<sup>3</sup>, S<sup>4</sup>, S<sup>5</sup> for connecting coil G with battery J through the medium of said radial plates, all arranged to operate substantially as and for the purpose set forth.

2. In an electric attachment for door locks a circuit breaker comprising the combination of the plate N having the dial pins or studs R, knob having the index stud K and shank x', arm L secured on said shank and having the insulated coil v on its outer end radial plates M, and the wires for connecting said radial plates with an electro magnet and a battery all arranged to operate substantially as and for the purpose set forth.

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Witnesses:

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