

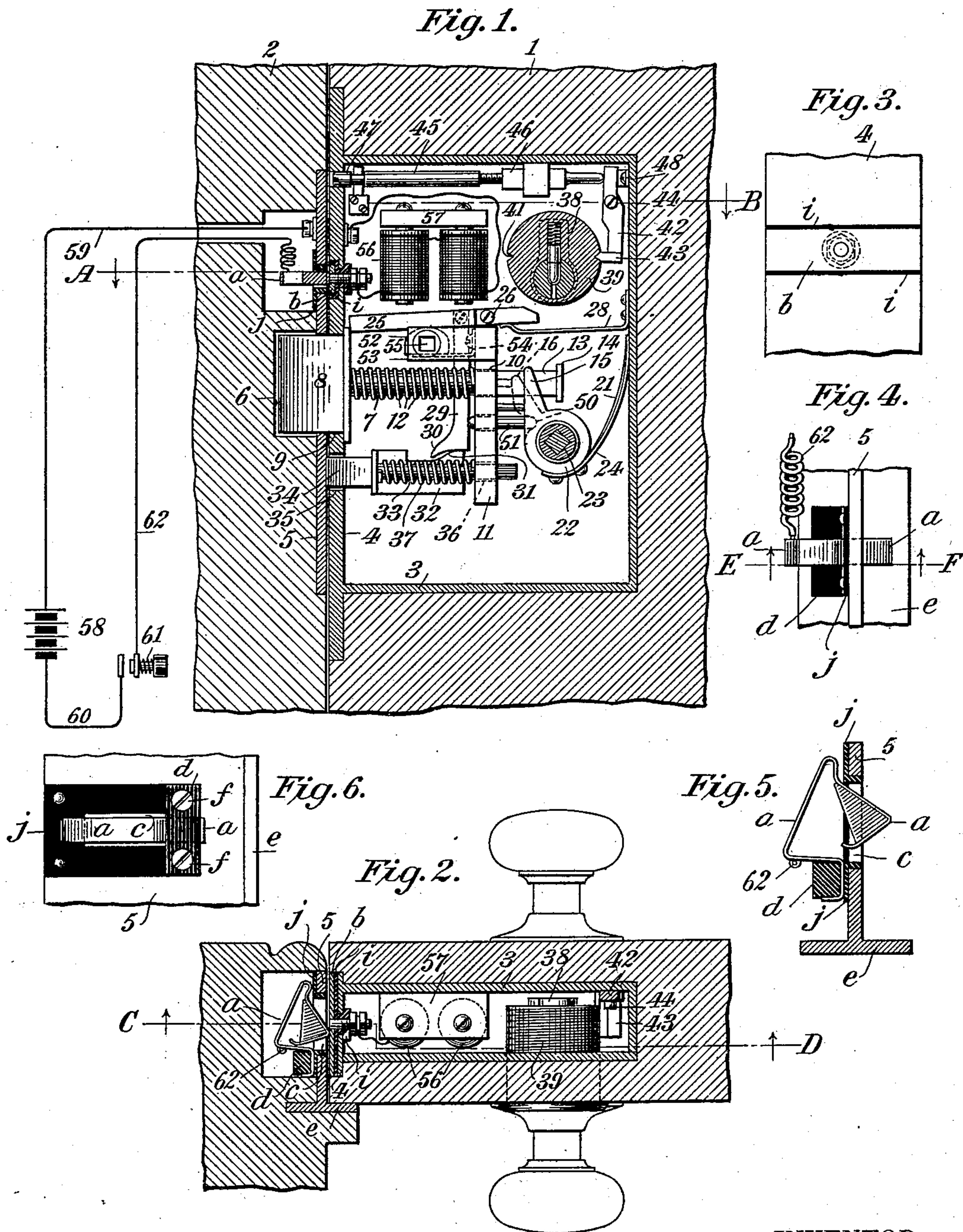
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H. G. CARLETON.
LOCK.

(Application filed Mar. 18, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 698,811, dated April 29, 1902.

Application filed March 18, 1901. Serial No. 51,580. (No model.)

To all whom it may concern:

Be it known that I, HENRY GUY CARLETON, a citizen of the United States, residing in the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks, fully described and represented in the following specification and the drawings forming a part of the same.

10 This invention relates to electrically-controlled locks.

The object of the invention is to provide means for connecting the electromagnetic device or devices in the lock with the circuit-
15 terminals and connections extending to a distant point.

It is frequently desired in locks of the class to which this invention relates to provide means by which the lock may be placed in condition to be opened from a distance. Thus, for instance, in apartment houses and in other similar places the lock which controls the entrance-door is arranged so that it may be operated from any apartment in the house. In
20 order to adapt the lock for use in such locations, there are preferably provided electromagnetic devices by which the locking member may be operated. I provide for electrically connecting the terminals of the electromagnet in the lock with the terminals of the
25 circuit across the opening, and for this purpose I arrange registering insulated contacts on the face-plate and on the striker-plate for the terminals of one side of the circuit, and
30 I arrange a series of separable contact-points to connect the face-plate and the striker-plate for the terminals of the other side of the circuit. These multiple contacts provide a safe and sure means for establishing continuity of the circuit. I also provide a guard-
35 plate located at right angles with the striker-plate projecting from each side thereof and preferably connected to it electrically and mechanically, so that the unauthorized introduction of battery-terminals cannot be made effective to operate the magnet and will only result in short-circuiting the battery attempted to be employed.

The accompanying drawings illustrate my
50 invention.

Figure 1 is a sectional side elevation of a

lock constructed in accordance with the invention, said lock being shown in position on a door or other movable part. The section is on the line C D, Fig. 2. Fig. 2 is a cross-section on the line A B, Fig. 1. Fig. 3 is a section of the face-plate, showing the insulated contact. Fig. 4 is a section of the striker-plate, showing the insulated spring-contact. Fig. 5 is a cross-section of the striker-plate on the line E F, Fig. 4, showing the guard-plate. Fig. 6 is a detail of the striker-plate, showing the means for retaining the contact-spring in position.

In the lock there is a sliding bolt 7, the enlarged head portion 8 of which projects through an opening 9 in the face-plate 4. The stem portion 7 passes through an opening 10 in block 11, secured to the lock-case. The stem 7 is surrounded by spring 12, said spring bearing at one end against block 11 and at its other end against the head 8. The head portion 8 where it engages with the striker-plate is beveled off, so that the bolt is readily forced back against the stress of spring 12 as the door is closed. The rear portion 13 of bolt 7 is flattened and carries a plate 14. Plate 14 projects on each side of 13 and into the path of two cams 15 and 16. Cam 16 is carried on a collar having a projecting portion which extends through an opening in the side of the lock-casing. The projecting portion has a squared opening to receive a knob-shaft. The collar has connected to it a bearing-spring 21, which normally holds cam 16 away from plate 14. Cam 15 is mounted on collar 22, which has a projecting portion taking into a recess in the collar. The two collars turn independently of each other. Collar 22 has a squared opening 23 to receive a knob-shaft and is held away from plate 14 by spring 24. Cams 15 and 16 are separately operated to withdraw the locking-bolt. The locking member consists of lever 25, pivoted on screw 26. Lever 25 when in its locking position takes behind head 8 of bolt 7. The spring 28 tends to force lever 25 into locking position. Lever 25 is provided with an arm 29, provided with a cam-face 30. This lies in the path of the cam 31, connected to cam-slide 32. Cam-slide 32 is carried on stem 33, having a head 34, which projects through opening 35 in face-

plate 4. The rear portion of 33 passes through opening 36 in block 11. The stem is thrown forward by spring 37, which bears against head 34 and block 11. When cam 31 is in contact with cam-face 30, arm 29 is rocked forward and lever 25 is rocked upward, so that its end is above the head 8 of bolt 7. When stem 33 is pushed inward, as shown in Fig. 1, door closed, and bolt 8 is in engagement with the opening in the striker-plate, cam 31 will be out of contact with cam-face 30, lever 25 will be rocked downward, and its forward end will lie behind head 8 of the bolt.

The rear end of lever 25 lies in the path of cam 38, mounted in cylinder 39 of an ordinary pin-lock. Cylinder 39 has longitudinal grooves 41 on its sides. There is a pivoted lever 42 with projecting edge 43, arranged to take into one of the grooves 41. Lever 42 is pivoted at 44 to the lock-casing and is operated by screw-rod 45 in bearing 46. The end of screw-rod 45 has a slotted head 47 countersunk in the face-plate. A bearing-spring 48 is arranged to give lever 42 a movement in opposition to that produced by the screw-rod, so that 43 will be moved out of 41 to allow removal of the cylinder.

There is a cam 50, operating on a releasing-pin 51, passing through block 11. Its end lies in proximity to the arm 29. When cam 50 is rotated, it strikes the head of pin 51 and pushes 51 against 29. This causes a forward movement of arm 29 and rocks lever 25 upward from behind the shoulder formed by head 8 of bolt 7.

There is a rotating cam 52 beneath lever 25, which has one end journaled in the side of the lock-casing and its other end in a plate 53, fixed to block 11. Spring 54 bears against the flattened side of the cam. The journal of the cam has a square opening 55, in which is a small knob-shaft. When it is desired to suspend operation of locking member 25, cam 52 is given a quarter-turn to raise lever 25 from its position behind head 8 of bolt 7.

The electromagnet 56 is supported on a bracket 57, secured to the lock-casing, and the lever 25 is arranged to form the armature for electromagnet 56. It is obvious that when the magnet is energized lever 25 will be moved out of its locking position. Any suitable circuit may be employed to energize the magnet. There is shown a battery 58 and circuit-closer 61, located at a distant point and included in the circuit 59 60 62. For the purpose of connecting this circuit with the electromagnet in the lock I arrange in the face-plate 4 a metallic strip *b*, insulated from the face-plate by a suitable insulating-bushing *i*. The striker-plate 5 is provided with an aperture *c*, the walls of which are covered with an insulating-bushing *j*. I provide an angular contact-spring *a*, which projects through the aperture *c* in position to register with the conducting-strip *b* in the face-plate 4. I prefer to

make the strip *b* two or more times as wide as the contact-springs *a* to guard against failure in alinement by displacement of the door or any other cause. The spring *a* is clamped in position by a block of insulating material *d* and screws *f*. The circuit-terminal 62 is connected to the spring *a*, and the strip *i* is connected to one magnet-terminal. The opposite magnet-terminal is connected to the face-plate 4, and the circuit-terminal 59 is connected to the striker-plate, both connections being made by screws, substantially as shown. For the purpose of connecting the last-named circuit-terminals I employ the multiple contacts occurring at the bolt-head 8, which electrically unites face-plate 4 and striker-plate 5 through the sliding contact-points 6 and 9 and the enlarged head 34, which connects striker-plate 5 with the case of the lock and the face-plate 4. These two contacts in parallel I have found to invariably produce a good and sufficient electrical connection between the separated points. The complete circuit passes from battery 58 via 59, striker-plate 5, bolt-head 8 to face-plate 4, a parallel connection being from 59 and striker-plate 5 via bolt-head 34 to face-plate 4, thence to the terminal of magnet 56, the return-circuit being via insulated contact-strip *b*, insulated spring *a*, wire 62, circuit-closer 61, and wire 60 to the battery.

To prevent the possible unauthorized use of a drill and the insertion of battery-terminals to complete a circuit through magnet 56 from a separate source of electricity, I provide a guard-plate *e*, which I prefer to connect mechanically and electrically with the striker-plate 5, as shown in Figs. 2 and 5. The guard-plate *e* is let into the jamb of the door, and while it would operate to prevent the use of an ordinary drill it would short-circuit the terminals of any battery sought to be introduced to operate the magnet.

What I claim, and desire to secure by Letters Patent, is—

The combination with an electrical lock of an electromagnet having one terminal electrically connected to an insulated point in the face-plate, the second terminal of said magnet being electrically connected to the lock-case and face-plate; a movable electrical contact on the striker-plate, registering with said insulated contact, to complete one side of the circuit, and two or more movable contacts in the lock-case, electrically connected in parallel or multiple to engage the striker-plate and complete the second side of said circuit with a metal guard-plate upon the outside of the opening, to prevent interference with said contacts.

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Witnesses:

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