

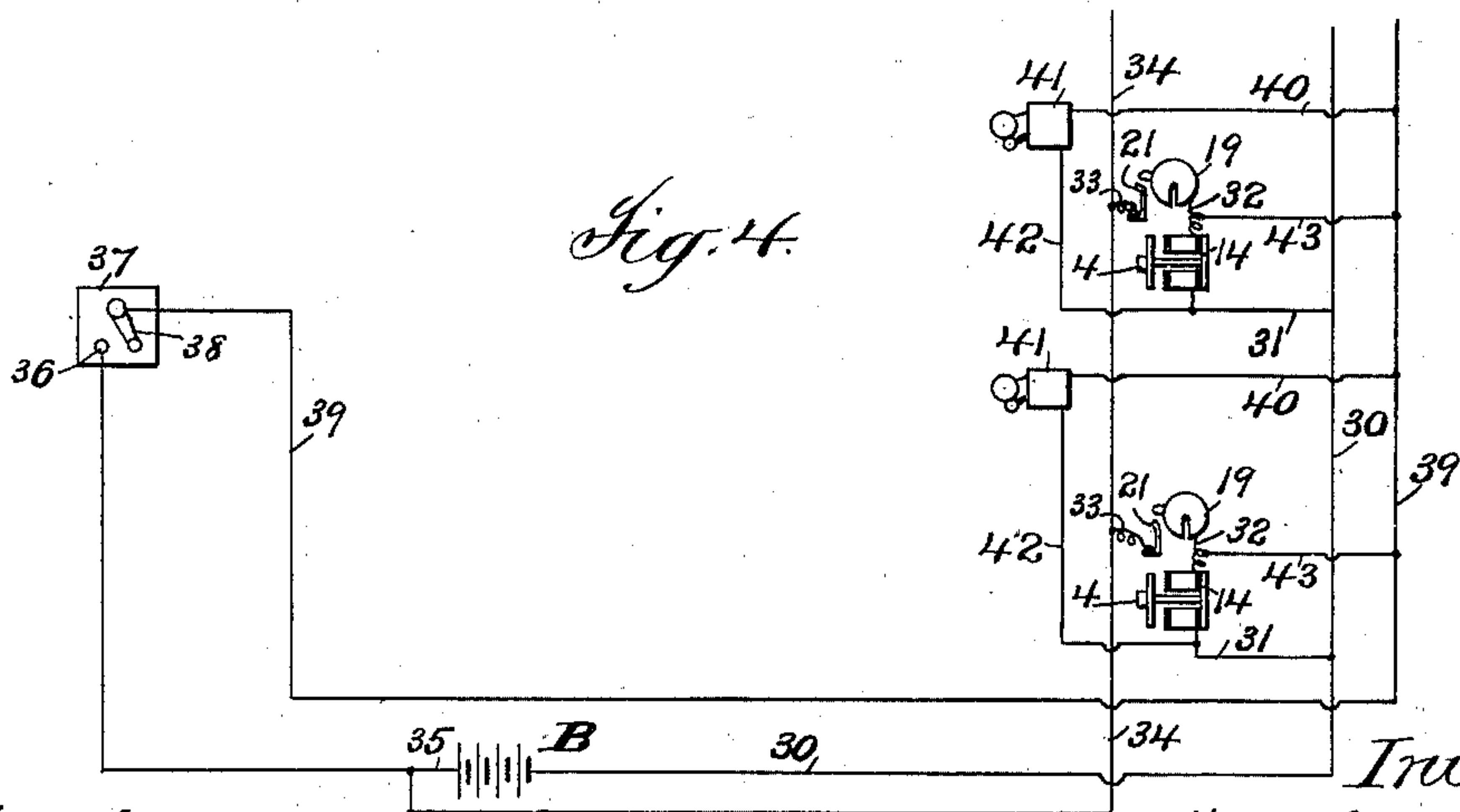
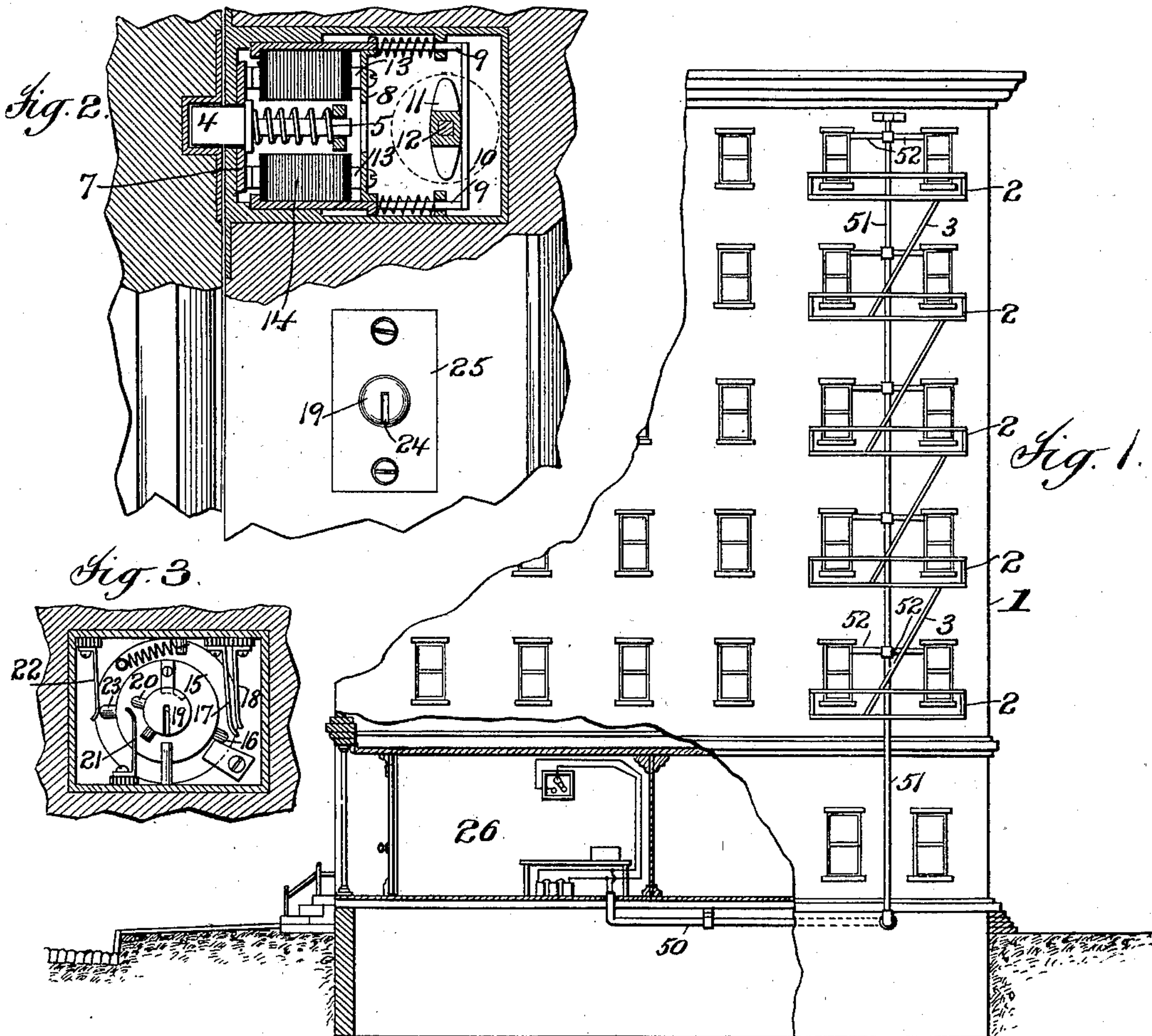
No. 656,341.

Patented Aug. 21, 1900.

H. G. CARLETON.
LOCK CONTROLLING DEVICE.

(Application filed Nov. 9, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HENRY GUY CARLETON, OF NEW YORK, N. Y., ASSIGNOR TO THE CARLETON ELECTRIC COMPANY, OF SAME PLACE.

LOCK-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 656,341, dated August 21, 1900.

Application filed November 9, 1899. Serial No. 736,367. (No model.)

To all whom it may concern:

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

10 This invention relates to certain improvements in lock-controlling devices, and is intended more particularly for use in connection with a series of locks which control the means of access to fire-escapes in hotels and
15 apartment-houses. The invention is, however, adapted for use in relations other than that indicated and is not therefore to be limited to the particular use stated.

20 In hotels, apartment-houses, and other similar buildings as now usually constructed the fire-escapes are accessible on the different floors through a room or rooms which are intended to be occupied by guests or residents. The doors are provided with the usual locks,
25 of which the occupants of the rooms hold the keys, and in case of fire the doors are supposed to be opened by a hall attendant who has the pass-key or by the occupants themselves. It often happens, however, that an
30 occupant of a room is out or, if in, fails to notice the sounding of a fire-alarm or goes down the fire-escape without having opened the door, or that the fire breaks out in such a place as to render the door inaccessible to
35 the attendant, or in the alarm and confusion caused by the fire the attendant fails to perform his duty and unlock the doors, so that the fire-escapes when needed are not accessible.

40 It is one of the objects of this invention to provide a series of locks, which are preferably, though not necessarily, electrically operated, with a common controlling means by which all the locks may be opened simultaneously, and at the same time to so construct the locks that each lock may be independently operated without interfering with the operation of the other locks.

50 A further object of the invention is to so arrange a system of electrically-controlled locks that all the locks may be operated si-

multaneously and each lock may be operated independently, and also to provide for so locating or running the circuits that they shall remain undamaged for as long a time as possible in case of fire. 55

A further object of the invention is to provide a system of electrically-controlled locks, each of which may be independently operated and all of which may be simultaneously
60 operated from a central point, and to arrange in connection with said locks a series of signals or alarms which may, when all the locks are simultaneously operated, notify the occupant of each room that his lock has been operated and which may also, if desired, act as
65 a general alarm for the rooms in the vicinity of the one in which the lock is located.

With these and other objects in view the invention consists in certain constructions
70 and in certain parts, improvements, and combinations, which will be hereinafter described, and fully pointed out in the claims hereunto appended.

In the accompanying drawings, which form
75 part of this specification, and in which like characters of reference indicate like parts, Figure 1 is a view, partly in section, illustrating a portion of a building equipped with a fire-escape and showing the preferred manner of protecting the circuits. Fig. 2 is a detail sectional view of a form of electric lock
80 which may be employed. Fig. 3 is a detail view illustrating a form of circuit-controller for each lock which may be employed. Fig.
85 4 is a diagrammatic view illustrating an arrangement of circuits which may be employed.

Referring to the drawings, 1 indicates a building the several floors of which are provided with fire-escape landings 2 of any usual or approved construction. These landings are or may be connected in any suitable way, as by ladders 3. The fire-escapes are shown, as is usual in such cases, as accessible through
95 windows, which may be located in one or more of the apartments of the building. Each of the doors of the apartments will be provided, as is usual, with a lock. While the lock employed may be of any suitable form or description, it will preferably be of the construction shown in my United States Patent 100

No. 608,321, granted August 2, 1898, the lock being generally of the construction shown in Fig. 2. Reference is made to the said patent for a full description of the lock. For the purposes of this application it is sufficient to say that the lock consists of a sliding bolt 4, held to its duty by a suitable spring 5. The lock is provided with a suitable cross-bar 8, to which are connected rods 9, the rods being in turn connected by a cross-bar 10, which lies in the path of and is operated by a suitable cam 11, fixed on the shaft 12 of the door-knob. To the bar 8 are fixed movable pole-pieces 13, extending through stationary magnet-coils 14 and resting against the armature 7, before referred to. It will be understood that when the magnets 14 are energized by closing the circuit through them the pole-pieces 14 will attract the armature 7. If now the pole-pieces be drawn back by rotating the shaft 12 and causing the cam 11 to operate against the cross-bar 10, the bolt 4 will be drawn backward and the door can be opened. If, however, the knob be turned when the magnets are deenergized, the pole-pieces 13 will be drawn back without attracting their armature, and the locking-bolt 4 will remain in position.

Any suitable form of circuit-controller for the circuit for the magnets may be provided by which the persons entitled to access to the room may close the circuit, so that the bolt may be slid and the door opened. Preferably, however, the circuit-controller will be of the form and construction shown in my copending application, Serial No. 731,391, filed September 23, 1899. A detailed description of this circuit-controller is not necessary, and for the purposes of this application it is sufficient to say that the circuit-controller consists of a key-operated revolving barrel 15, carrying a circuit-closing projection 16. This circuit-closing projection when the barrel 15 is rotated strikes a pair of terminals 17 18, forcing them together, and thus closing a circuit, which is preferably an alarm-circuit. Mounted in the revolving barrel 15 is another barrel 19, which is preferably locked to the barrel 15 by a series of pins, (not shown,) the lock being in this respect of the ordinary pin-lock type. This barrel 19 is provided with a circuit-closing projection 20, which when the barrel is rotated strikes a terminal 21, the circuits being so arranged that the projection 20 is one terminal of the lock-circuit and the projection 21 is the other terminal of the lock-circuit. The lock-circuit also includes a terminal 22, which, as shown, is a spring-terminal, and a projection 23 on the barrel 15. From this description it will be seen that when the barrels 15 and 19 are rotated together, as they will be in case any attempt is made to open the lock by inserting in the keyhole 24 (shown in the key escutcheon 25, Fig. 2) a key which does not release the pin connection between the two barrels, the lock-circuit will be broken by the

separation of the terminals 22 23, and an alarm-circuit will be closed by the projection 16 striking the terminals 17 18. When, however, the barrel 19 is rotated alone, as it will be when a proper key is inserted which releases the pin connection between the two barrels, the lock-circuit will be closed by the contact of the projections 23 and 21, it being remembered, as before stated, that the lock-circuit includes the contact 20.

The circuits employed are preferably arranged as generally indicated in the diagram in Fig. 4. B indicates any suitable source of electric energy—as, for instance, an ordinary battery. From the battery is led a wire 30, and from the wire 30 are led branch wires 31, said wires leading to the lock-magnets 14 controlling the bolts 4. From the other side of the magnets 14 are led wires 32, said wires leading to the barrel 19 of the controller before described. From the contact 21 is led a wire 33, said wire joining a wire 34, which in turn joins a wire 35, leading to the battery. The wire 35 runs from the battery to a contact-point 36 in a suitable switch 37, this switch being located in any suitable position, as in the hotel-office 26. Leading from the arm 38 of the switch is another wire 39. From this wire are led a series of wires 40, which wires communicate with any suitable alarm—as, for instance, bells 41. From the other side of the bells 41 are led wires 42, which communicate with the wires 31, which, as has been before said, are connected to the wire 34. Wires 43 connect the wire 32 with the wire 39. With the circuits arranged as described it will be seen that when any one of the cylinders 19 is operated by the proper key the circuit will be closed from the battery through the wires 30 31 to the lock-magnets, from the lock-magnets through the wires 32, the cylinder 19, the contact 20, the contact 21, and the wires 33, 34, and 35 to the battery. It is apparent, therefore, that each of the locks can be independently operated by persons holding the keys or other means of opening the locks without disturbing the rest of the locks. In case of fire, however, when it is desired to render the fire-escapes accessible through the rooms, the clerk in the hotel-office or any other person at any other suitable point turns the switch-arm 38. A circuit is now established from the battery through the wire 35, switch 36 38, the wire 39, and the wires 43 and 32 to the lock-magnets. From these magnets the current goes through the wires 31 and 30 back to the battery. At the same time the circuit is also established through the branch wires 42, the bell-magnets, and the wires 40 to the wire 39, and thence through the various connections described to the battery. When this circuit is established, all the locks in the several apartments are placed in condition to be operated, and at the same time the bells are sounded. This notifies the occupants of the several rooms that their locks have been placed in condition to be operated, and if the

bells also act as a general alarm the occupants of the adjoining rooms are notified that fire has broken out and that the doors leading to the fire-escapes are unlocked. If the bells 41 do not act as a general alarm, a general alarm will of course be sounded from the office or in any other suitable manner and the occupants of the several rooms are notified of the fire and from a previous understanding will be aware that the doors leading to the fire-escapes are unlocked.

It is of course important that the circuit-wires controlling the several locks be protected from fire as far as possible. In order to effect this, the wires are led either from the office or from the central operating-point through a protected conduit 50, the protection for which may consist of asbestos or any other suitable material. This conduit 50 is led outside the building at any suitable point, preferably as near a point as possible to the office or other central controlling-point. It then joins an iron or other suitable conduit 51, which, if desired and as shown, may be a part of the supporting structure for the fire-escape. From this conduit 51 are led short conduits 52, these conduits running to the several rooms in which the locks are located. By thus running the wires through a protected conduit in the building and locating them outside the building in an iron or other suitable conduit they are protected as far as possible from the action of the fire and the circuits therefore remain undisturbed, so that they are operable for as long a period of time as possible after the fire breaks out. It will be further seen that by the arrangement of circuits and alarms shown should any attempt be made to operate any of the locks by short-circuiting them through the main connections the alarms which are in circuit with the locks will be sounded and the occupants of the rooms notified that an attempt is made to open the locks.

It is to be understood that the system which has been before described, while particularly applicable to hotels or apartment-houses, can be used in any place where it is desired to control a series of locks from a central point and at the same time to have the locks independently operable.

It is to be further understood that the various connections and constructions by which the invention is carried into effect may be widely varied. Any suitable form of lock may be used and any suitable form of circuit-controllers for the locks may be used. The invention is not, therefore, to be limited to the specific constructions and connections which have been shown and described.

What I claim is—

1. The combination with a series of electrically-operated locks, of suitable circuit connections, a circuit-controlling device by which all the locks may be operated simultaneously, suitable circuit connections and a circuit-controlling device located near each lock

whereby any lock may be operated independently of the other locks, substantially as described.

2. The combination with a series of locks, of an electrically-operated controlling mechanism for each lock, circuit connections including all the controlling mechanisms, a circuit-controller for said circuit connections, whereby all the locks may be operated simultaneously, independent circuit connections for each lock, and a circuit-controller for each of said connections located near each lock whereby it may be operated independently, substantially as described.

3. The combination with a series of locking-bolts, of a series of lock-controlling magnets, one for each bolt, means controlled from a common point for energizing all the magnets simultaneously, and means located near each magnet for energizing it separately, substantially as described.

4. The combination with a series of locks, of means whereby all the locks may be operated simultaneously, means whereby any lock may be operated independently of the other locks, a series of alarm mechanisms, and means whereby the alarm mechanisms are operated when all the locks are operated simultaneously, substantially as described.

5. The combination with a series of electrically-operated locks, of suitable circuit connections and devices whereby all the locks may be operated simultaneously, a series of alarm mechanisms in said circuit, and suitable circuit connections and devices whereby any lock may be operated independently of the other locks, substantially as described.

6. The combination with a series of locks, of an electrically-operated controlling mechanism for each lock, circuit connections including all the controlling mechanisms, a series of alarms in said circuit connections, a circuit-controller for said circuit connections, whereby all the locks may be operated simultaneously, independent circuit connections for the controlling mechanism of each lock, and a circuit-controller for said connections whereby each lock may be operated independently, substantially as described.

7. The combination with a series of bolts, of a series of controlling-magnets one for each bolt, said magnets operating to place the bolts in condition for movement when energized, a circuit connection for energizing all the magnets simultaneously, a series of alarm mechanisms in said circuit connections, and circuit connections for controlling each magnet independently of the other magnets, substantially as described.

8. The combination with a series of electric locks, of suitable circuit connections, whereby all the locks may be simultaneously operated, and a series of alarm mechanisms located in said connections, substantially as described.

9. The combination with a series of locks, each lock including a controlling-magnet, cir-

cuit connections including magnets of all the locks, a common controlling circuit device for these circuit connections, circuit connections for each of the locks, and a key-operated circuit-controlling device for each of these connections, substantially as described.

10. In a hotel or other similar building having a fire-escape accessible from different rooms thereof, the combination with the doors of the rooms, of a series of locks, one for each door, electric controlling devices for the locks, suitable circuits and a circuit-closing device whereby all the controlling devices may be operated from a common point, and a suitable circuit and a circuit-closing device near each lock whereby each of the controlling devices may be separately operated, substantially as described.

11. In a hotel or other similar building having a fire-escape accessible through different rooms thereof, the combination with the doors of the rooms, of a series of electric locks, circuit connections including all the locks, means for controlling the circuit connections

from a common point, alarm mechanisms in said circuit connections whereby the locks may be all operated and the alarms sounded from a common point, and means for operating each of the locks independently of the other locks and the alarm mechanisms, substantially as described.

12. In a hotel or other similar building having a fire-escape accessible from different rooms, the combination with the doors of the rooms, of a series of electric locks, circuit connections including all the locks, a circuit-controller for these connections, a series of alarm mechanisms in the circuit connections, circuit connections for each of the locks, and a key-operated controlling device for each of said circuit connections, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY GUY CARLETON.

Witnesses:

A. A. V. BOURKE,
BENJ. C. VAN COTT.