

J. L. BEERS.
ELECTRIC HOTEL CALL BELL SYSTEM.

No. 338,697.

Patented Mar. 30, 1886.

Fig. 1.

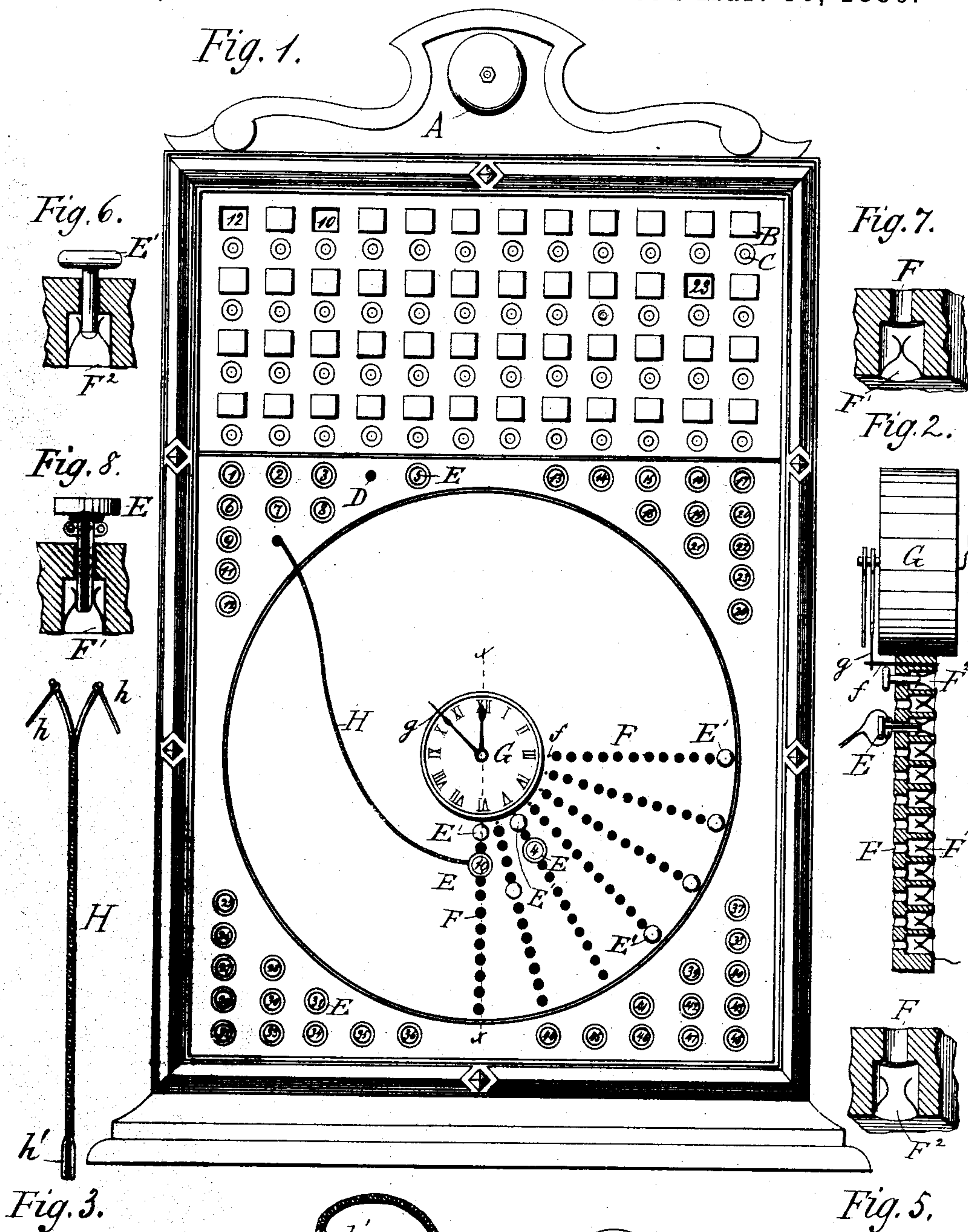


Fig. 6.

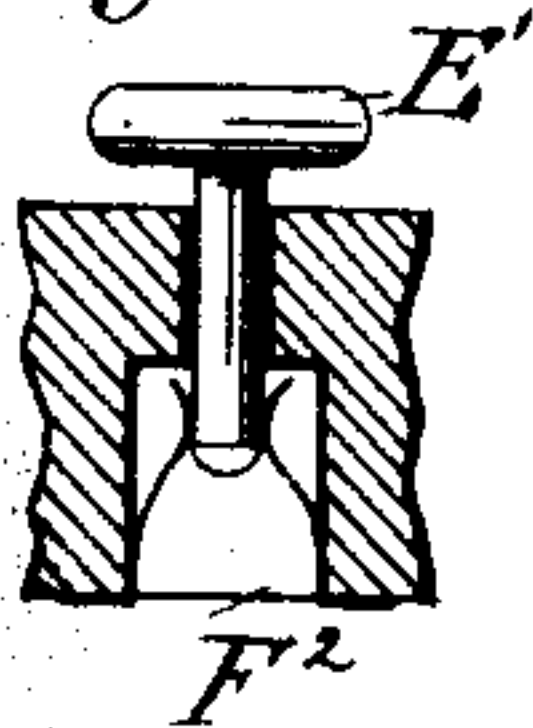


Fig. 8.



Fig. 7.

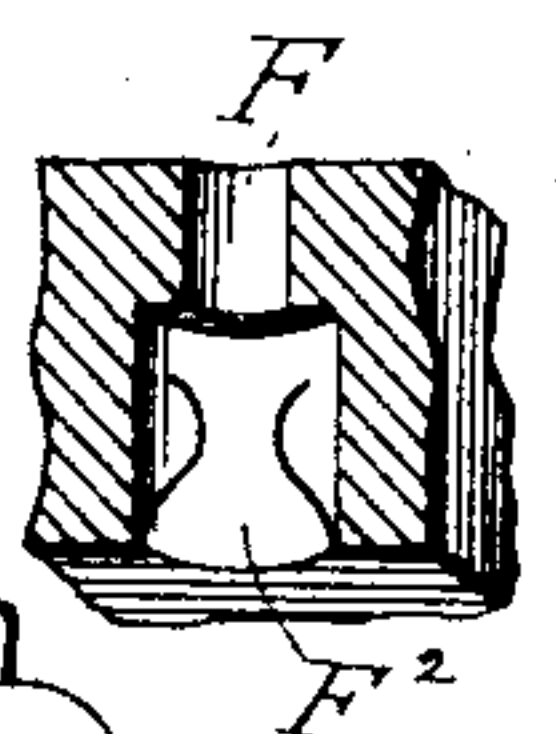
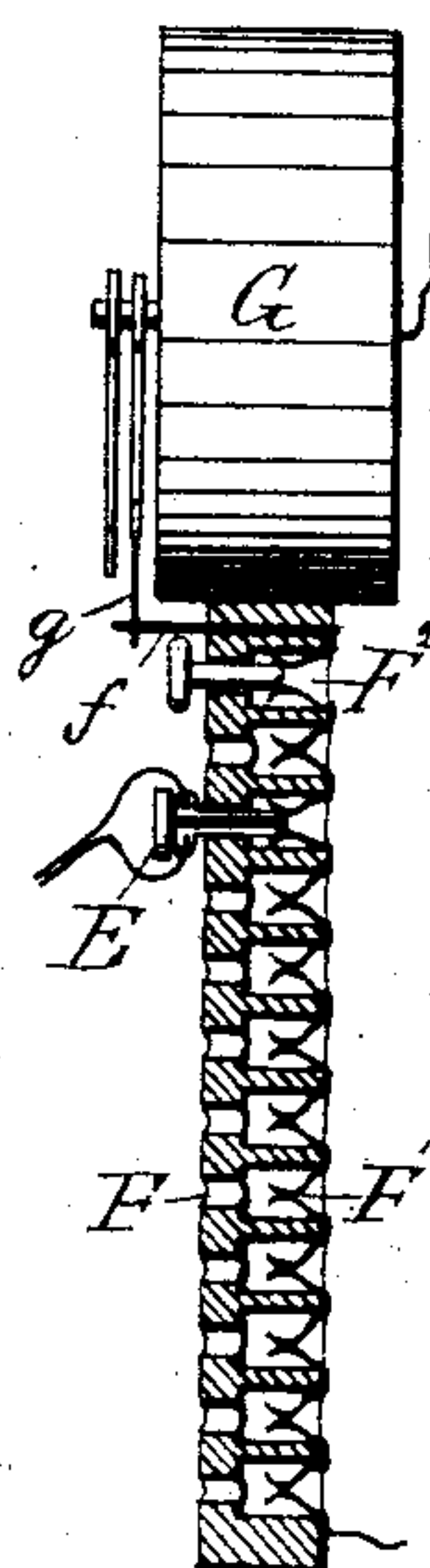
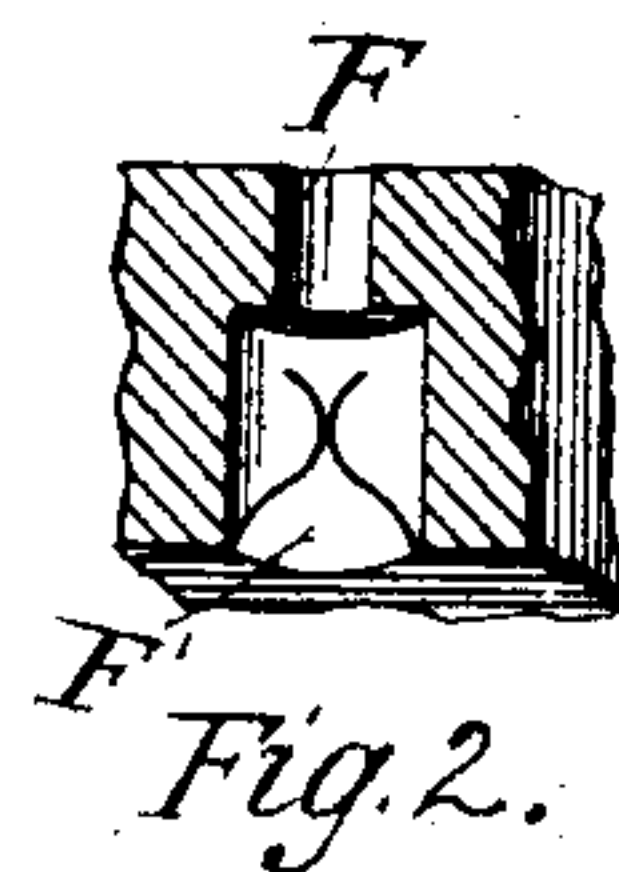


Fig. 3.

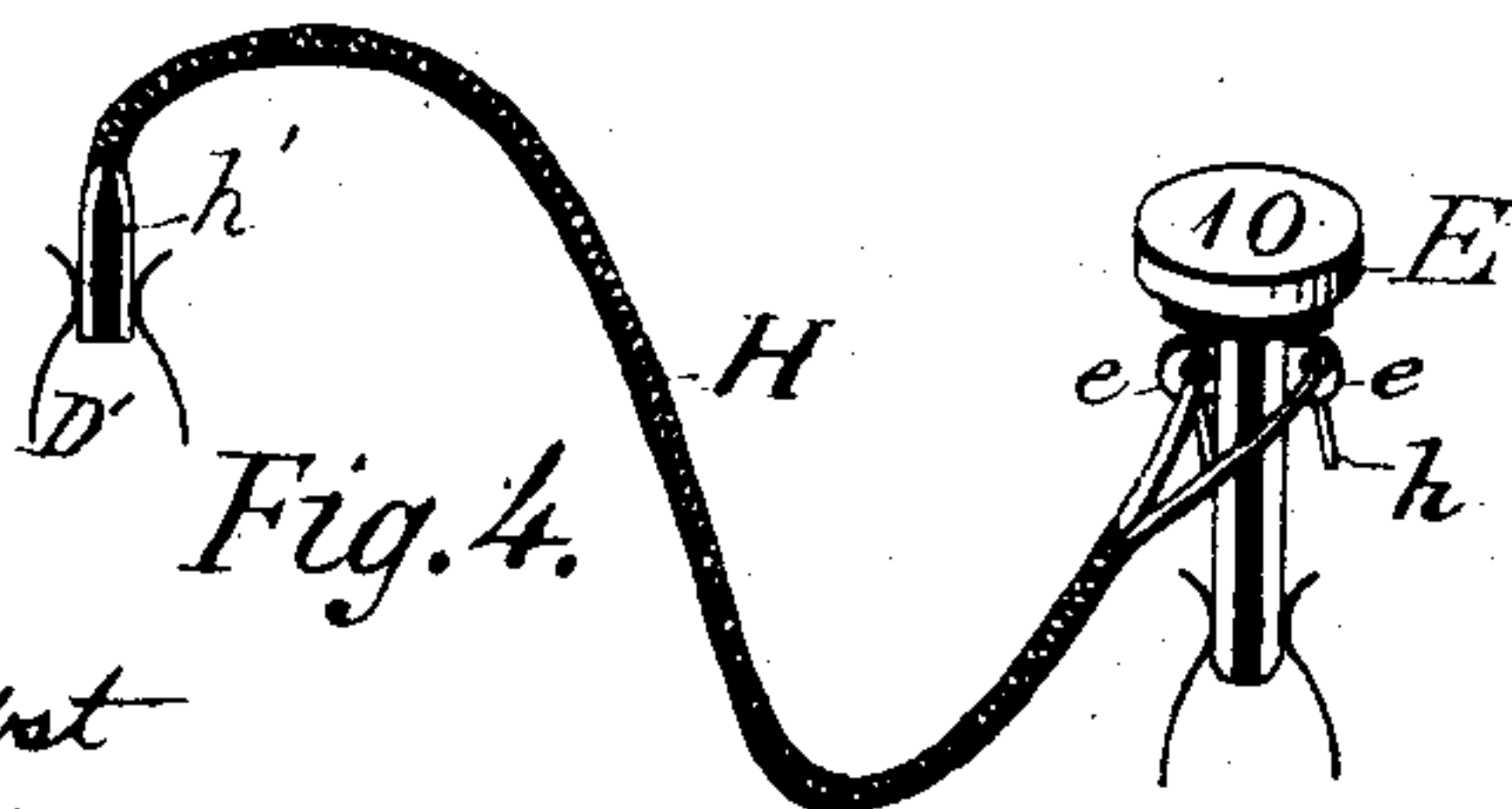


Fig. 5.

WITNESSES

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Abraham R. DeMott

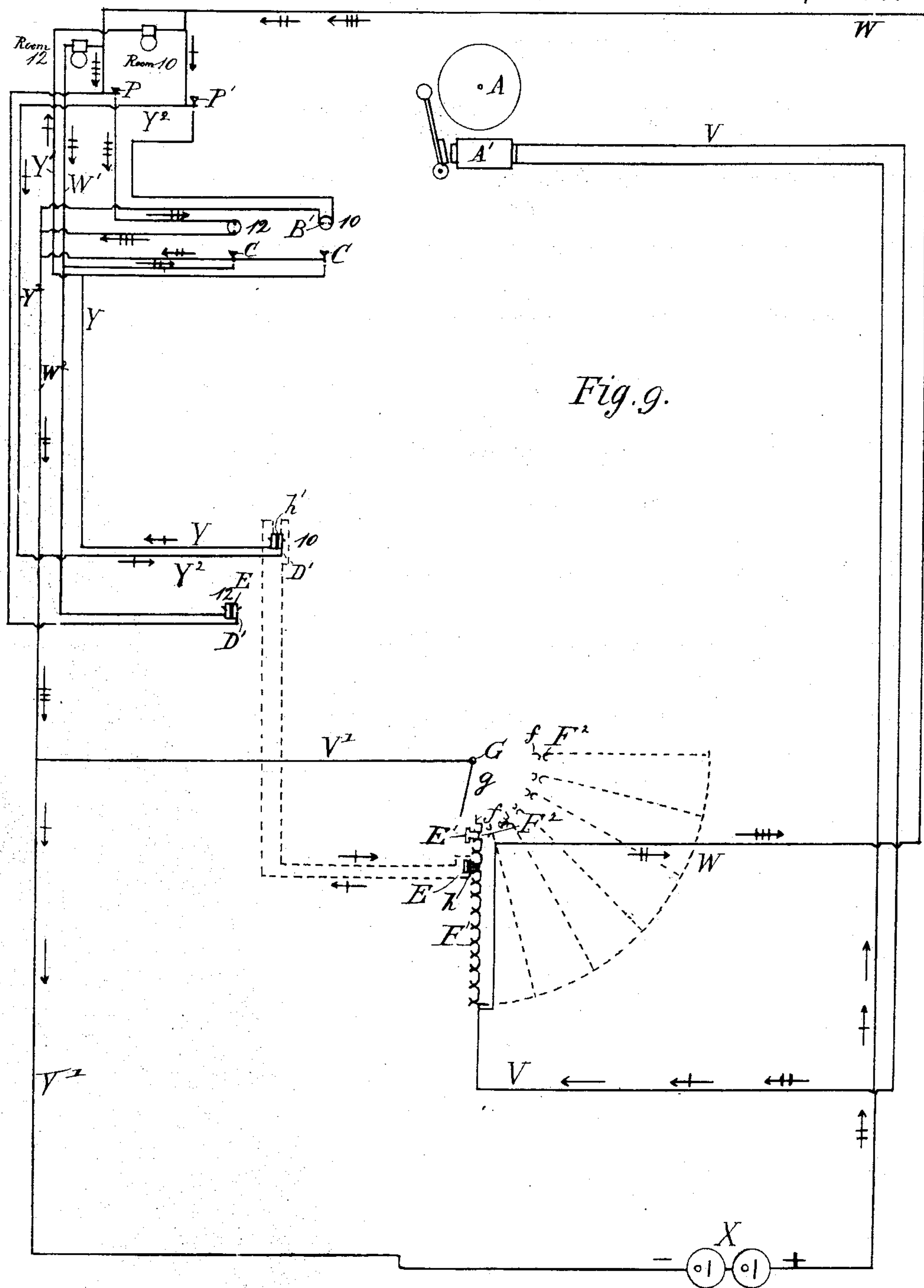
INVENTOR

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ELECTRIC HOTEL CALL-BELL SYSTEM.

SPECIFICATION forming part of Letters Patent No. 338,697, dated March 30, 1885.

Application filed February 4, 1885. Serial No. 154,929. (No model.)

To all whom it may concern:

Be it known that I, JAMES LEMUEL BEERS, of New York, in the county of New York and State of New York, have invented certain Improvements in Electric Hotel Call-Bell Systems, of which the following is a specification.

My invention relates to hotel call-bell systems in which provision is made, together with the ordinary call-bell and annunciator-circuits, for automatically sounding a call at a predetermined time at the hotel-office, and also, if desired, at a particularly-designated distant point; and to that end it consists in the particulars hereinafter fully set forth.

Figure 1 represents a front elevation of the case containing my apparatus; Fig. 2, an enlarged vertical section of the same on the line *x x*, Fig. 1; Figs. 3 and 4, views of my flexible conducting-cord; Figs. 5, 6, 7, and 8, views in detail of my circuit-changing pins and springs; and Fig. 9 is a diagram of my electric circuits.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, Fig. 1 represents the exterior of the case or office-register containing my apparatus, which is ordinarily placed in the hotel-office. The upper part of the case contains, besides a bell or gong, A, a number of ordinary automatic annunciator-drops, B, adapted to be actuated by electro-magnets B', two of which (numbered 10 and 12) are shown in Fig. 2, and also push-buttons C, by means of which the occupants of any room may be summoned at will. In the lower portion of the case are a number of round holes, D, each normally filled by an indicator-pin, E, upon the head of which is the number of a room, as shown in Fig. 4, and which is adapted also to fit into any one of a number of half-hour series of sets of perforations, F, radiating from an ordinary clock-movement time-piece, G, as a center.

In order to more clearly designate the functions of these various parts, I will refer to the diagram of the circuits, Fig. 9, where from the battery X the electric current flows through the electro-magnet A' of the office-gong A, thence through the wire V, thence through the eleven pairs of closed-circuit spring-fingers F', thence through the pair of open-circuit

spring-fingers F², (if closed, as represented, by means of the metallic pin E', as shown in Fig. 6,) thence through the spring switch-wire *f*, projecting from the face of the case and adapted to be impinged once every twelve hours by the flexible spring attached to the extremity of the hour-hand *g* of the time-piece G, electrically connected with the wire V', back to the battery by means of the clock G, and wires V and X'.

It is necessary, in order to complete the above circuit, that the hour-hand *g* and one of the spring wires or switches *f* of one of the branch circuits V, electrically connected with the springs F², which switches *f* are adapted to be automatically operated by the hour-hand *g* of the time-movement G, should be in contact, and also that in one of the radial series of perforations F the manual circuit-closing device F² E' must be operated, and the pair of open-circuit springs F² should be closed by means of the pin E'. Thus when the hour-hand *g* passes over the spring switch-wires *f* of branch circuits V, electrically connected with the wires F² of the radial series of perforations adjacent to the figures 3, 3:30, 4, 4:30, of the dial in Fig. 1, the electro-magnet A' will not be energized and the gong A struck, because the pairs of open-circuit springs F² beneath the perforations F nearest the dial of those series will be apart from each other, as shown in Figs. 5 and 9. If, however, the clerk of the hotel wishes to be reminded that a guest occupying, say, room No. 4, wishes to be aroused at any particular hour, as at five o'clock, he simply has to place a pin E' in the perforation nearest the figure 5 of the dial, and then to remove a pin E, with the figure 4 on its head, from its hole D, and to place it in one of the same radial series of perforations F, as is represented in Fig. 1, care being taken not to press in the pin E far enough to open the closed-circuit springs F', when the office-gong A will be loudly sounded at the hour designated, and on looking at the apparatus the clerk sees that room 4 is to be called at five o'clock, as shown in Fig. 1, the electric current going from the battery X through the magnet A', wire V, springs F', springs F², and circuit-closing pin E', as shown in Fig. 6, switch *f*, hour-hand *g*, wires V' and X' back to the battery, as before

described, the course of the current being indicated by the plain arrows.

If desired, the pins E' may be dispensed with and the indicator-pins E substituted therefor. In this case, however, the insulated plates ee of the pin E must be electrically connected with each other by means of a wire.

Besides indicating numbers, or in lieu thereof, it is obvious that some of the heads of the pins E may have letters or memoranda imprinted thereon. In addition, however, to sounding automatically the office-gong A at any predetermined time, I also make provision for ringing at one and the same time a bell in the apartment of the guest to be aroused, in the following manner:

Suppose, for the sake of example, that a person occupying room No. 10 wishes to be called at six o'clock. In this instance, as before, a pin E' is placed in one of the perforations nearest the dial; but now it must be put in the one nearest the clock-figure 6. Then a pin E , with the figure 10 upon its head, is removed from its normal position in a hole D , and placed in one of the radial series of perforations F , as is shown in Figs. 1 and 2. Now, however, the pin E is pushed in the perforation F far enough to open the closed-circuit springs F' , (represented in their normal position in Fig. 7,) and to cause them to assume the position shown in Fig. 8. A flexible cord, H , composed of two insulated wires, serves to connect each one of the pair of closed-circuit springs F' with a relatively-placed spring of the pair of springs D' situated under one of the perforations D , as is clearly shown in Figs. 1, 4, and 9. Now, when the hour-hand g passes over the projecting switch-wire f of one of the branch circuits V , electrically connected with the springs F^2 of the radial series now under consideration, not only will the office-gong A be sounded, but a bell will also be rung in room No. 10, the room-circuit having been incorporated, after the manner of a loop, into the main-office circuit, and the electric current taking the following course: Starting from the battery X , the current passes through the electro-magnet A' of the gong A ; thence goes through the wire V ; thence through nine pairs of closed-circuit springs F' ; thence through one disconnected spring F' ; thence through one of the wires of the flexible cord H ; thence through one disconnected spring D' ; thence through wires Y and Y' ; thence through bell in room 10; thence through wire Y^2 ; thence through the remaining spring D' and wire of cord H and spring F' ; thence through one pair of closed-circuit springs F' ; thence through springs F^2 and circuit-closing pin E' and projecting switch-wire f , and thence through the hour-hand g , wires V' and X' back to the battery, as is indicated in Fig. 9 by the single crossed arrows.

It is obvious that a number of other auxiliary room open circuits and the bells connected therewith and placed in a number of other apartments may be successively incorporated

by a series of loops into and included in the above circuit, if desired, in a manner similar to that and by devices equivalent to those described and shown. The radial perforations F may also, if preferred, be arranged so as to adapt the time-piece to sound the alarm at intervals of ten or fifteen minutes. Although I prefer to place the series of sets of radial perforations F , arranged to represent hours, and electrical connections appertaining thereto, near the time-piece G , yet I do not desire to confine myself to that particular position, as they may obviously be placed elsewhere, if desired, and still arranged to be operated in the manner described.

It will be observed that the device consisting of the manual circuit-closing means, consisting of the springs F^2 , pin E' , and the automatically-operated switch consisting of the hour-hand g and the wire f , constitute a switching mechanism adapted to be manually operated by means of the circuit-closing pin E' , and also automatically operated at a certain designated time by the hour-hand g , and therefore its construction may be varied, and in lieu of the springs F^2 and pin E' any ordinary switch or circuit-closing mechanism may be used. Further provision is also made in my organization for manually ringing the bell in any room (whether or not it is switched into the main circuit) by means of the office push-buttons C , the course of the current, in order to call room No. 12, being from the battery X through the magnet A' , wires V W , bell in room No. 12, wire W' , push-button C , wires W^2 and X' back to the battery, as is signified in Fig. 9 by the double crossed arrows. On the other hand, should the occupant of room No. 12 wish to call the office, he has simply to press the button P in his room, when the electric current will start from the battery and pass through the magnet A' , wires V W , push-button P , office annunciator-magnet B , adapted to operate the annunciator-drop B , and which is marked in the diagram No. 12, wires W^2 and X' back to the battery, as indicated by the triple crossed arrows.

The construction of the mechanism, and also of the circuits shown, may be varied in minor particulars, provided there is no essential departure from the mode of action shown and described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a hotel-register placed in a main electric circuit, said register containing an electric bell, A , and being provided with perforations F , adapted to receive circuit-closing pins E' and indicator-pins E , and also provided with a time-movement, G , adapted and arranged to automatically operate a number of electric switches, f , of the branch circuits V , of the manually-operated indicator-pins E , and the independent manual circuit-closing device consisting of springs F^2 and pins E' , whereby the circuit may be com-

pleted both manually by the pins E' and automatically by the time-movement G, and the alarm-bell A sounded at any predetermined time, substantially as shown and described.

5 2. The combination, with the circuit of an office-bell, A, and with a time-movement, G, adapted to automatically operate a number of switches, *f*, of branches V of said circuit, and with the manual circuit-closing devices consisting of the springs F² and pins E', whereby
10 the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and also with a number of auxiliary room open circuits, each provided with
15 a bell, of the springs F', pins E, and flexible cord H, whereby one or more of said loop room-bell circuits may be successively incorporated into the main-office circuit, substantially as and for the uses and purpose shown
20 and described.

3. The combination, with the circuit of an office-bell, A, and with a time-movement, G, adapted to automatically operate a number of switches, *f*, of branches V of said circuit, and
25 with the manual circuit-closing devices consisting of the springs F² and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and also with a number of auxiliary
30 room open circuits, each provided with a bell, of the springs F', pins E, and flexible cord H, whereby one or more of said loop room-bell circuits may be successively incorporated into the main-office circuit, and the office manual
35 push-buttons C, adapted and arranged to operate the room-bell circuits, substantially as shown and described.

4. The combination, with the circuit of an office-bell, A, and with a time-movement, G,
40 adapted to automatically operate a number of switches, *f*, of branches V of said circuit,

and with the manual circuit-closing devices consisting of the springs F² and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the
45 time-movement G, and also with a number of auxiliary room open circuits, each provided with a bell, and with the springs F', pins E, and flexible cord H, whereby one or more of said loop bell-circuits may be successively incorporated into the main-office circuit, of the
50 push-buttons P, adapted and arranged to operate the circuit of the bell A and annunciator-magnet B, substantially as shown and described.

5. The combination, with the time-movement G, radial series of perforations F, circuit spring-fingers F', pins E', and hour-hand *g*, of the projecting wire *f* and circuit-wires V, V', and X'.
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6. The combination, with the time-movement G, radial series of perforations F, circuit spring-fingers F', pins E', hour-hand *g*, projecting wire *f*, and circuit-wires V V', of the double flexible cord H and auxiliary circuit Y Y² and alarm mechanism located thereon, substantially as described.
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7. In an electric call-bell system of the character herein specified, the combination, with a main electric circuit, and with a case
70 or register containing a bell, A, time-movement G, a half-hour series of radial perforations, F, contiguous to the time-movement, perforations D, pins E and E', automatic drops B, and push-buttons C, of the auxiliary electric connections and circuits connected therewith, and arranged substantially as shown and
75 described.

JAMES LEMUEL BEERS.

Witnesses:

JOHN HENRY PROBST,
ABRAM ROSEVELT DE MATT.