(No Model.)

R. H. WELDEN.

ELECTRIC SWITCH BOARD.

No. 381,303. Patented Apr. 17, 1888.

Fig. 1.

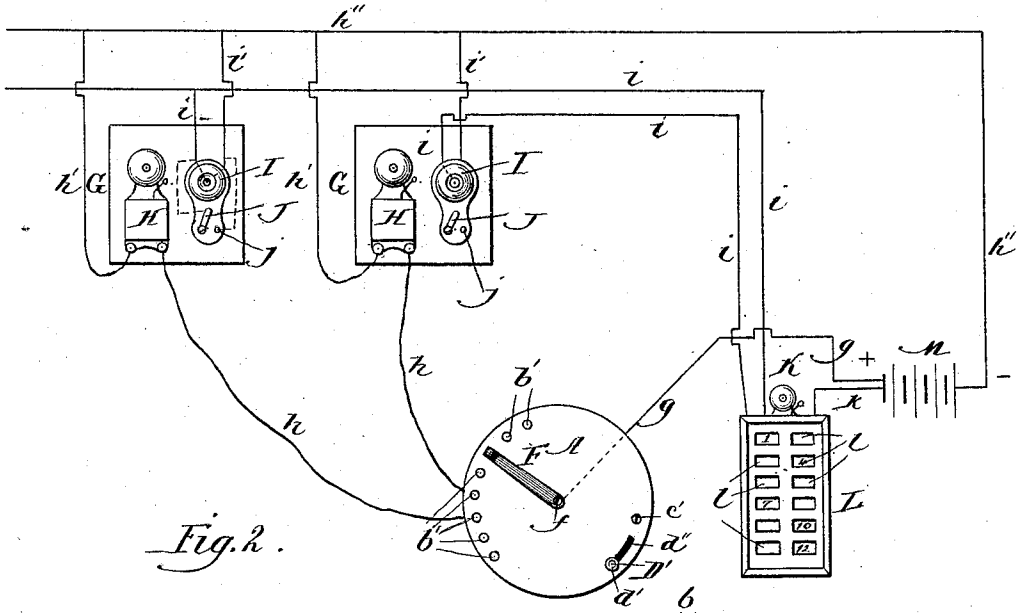


Fig. 2.

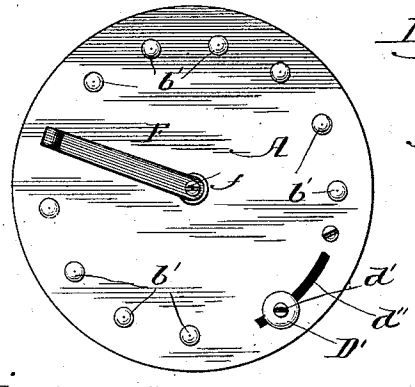


Fig. 3.

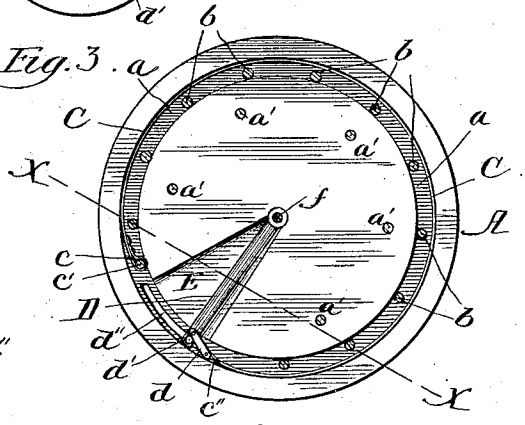


Fig. 4.

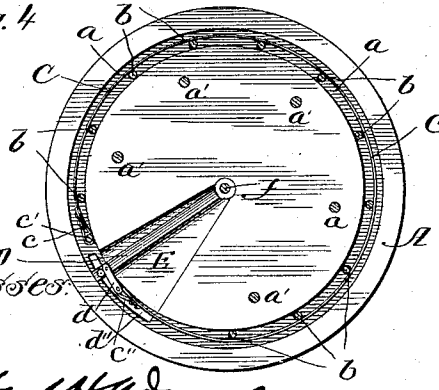
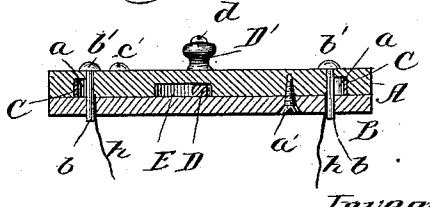


Fig. 5.



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UNITED STATES PATENT OFFICE.

RICHARD H. WELDEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND JOSEPH CALMEYN, OF SAME PLACE.

ELECTRIC SWITCH-BOARD.

SPECIFICATION forming part of Letters Patent No. 381,303, dated April 17, 1888.

Application filed September 6, 1887. Serial No. 248,921. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. WELDEN, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Electric Switch-Boards, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an illustrative view showing the connection between the switch-board, room-bells, annunciator, and the battery. Fig. 2 is a top or plan view of the switch-board. Fig. 3 is an under face view with the bottom removed, showing the board for use in ringing a single bell. Fig. 4 is an under side view with the bottom removed, showing the board arranged for use in ringing all the bells connected therewith. Fig. 5 is a section on line *x x* of Fig. 3.

This invention relates to a switch-board primarily designed for use in connection with a hotel, factory, or other building having a bell in the separate rooms which can be rung from the main office, as required, to call any particular room or party; and the object of the invention is to construct a switch-board by which any desired bell of a number of bells can be rung singly or all of the bells can be rung simultaneously—as, for instance, in giving an alarm of fire to the inmates of the various rooms or in case of other danger, and also to enable the occupant of a room to signal the main office in case of fire or other danger—so that a general alarm can be sent from the main office to all the rooms; and the invention is further applicable to other uses where it is desired to send a call or alarm to a single point, or a general call or alarm to several points; and its nature consists in providing a switch-board having a series of pins or posts for connection with electric wires, and with each of which a key can be brought into engagement to complete the circuit, or with all of which a band can be brought into engagement to complete the circuit for all the wires, and in the several parts and combinations of parts, hereinafter described, and pointed out in the claims as new.

In the drawings, A represents a bed or plate of wood, vulcanized rubber, or other suitable non-conducting material, either of a circular form, as shown, or otherwise formed. This bed or plate A on its under side is provided with a groove, *a*, and running from the bottom of this groove through the plate or bed is a series of holes to receive connecting pins or posts *b*.

B is a bottom corresponding in shape to that of the bed or plate A, and also made of wood, vulcanized rubber, or other non-conducting material, and connected to the bed or plate A by suitable screws, *a'*, or otherwise, and through which and the bed-plate the connecting-pins *b* pass, as shown in Fig. 5, each pin having a button or head, *b'*, for contact with the key or switch.

C is a band of sheet-brass or other conducting material located within the groove *a* and connected at one end by a loop, *c*, to a pin or screw, *c'*, as shown in Figs. 3 and 4.

D is an arm or lever the inner end of which is pivotally connected to the plate A and the outer end of which is connected by links *d* with a loop, *c''*, at the end of the band C, and at the outer end of the arm D is a pin, *d'*, which passes up through a slot, *d''*, in the bed or plate A and is provided with a head or button, D', of non conducting material. This lever B operates the band so that when the arm is turned as shown in Fig. 3 the band will lie against the outer wall of the recess *a* and out of contact with the pins or posts *b*, and when turned to the position shown in Fig. 4 the band will be drawn in and brought into contact with all of the pins or posts *b*, as shown in Fig. 4.

E is a recess in the under face of the bed or plate A, in which the arm D swings.

F is a switch arm or key pivoted at its inner end by a pin or pivot, *f*, to the plate A, and, as shown, this pivot *f* also forms the connection for the arm D to the plate A, and the outer end of the arm F swings in a circle over the heads *b'*, so that such end can be brought into contact with any desired head or button *b'*.

The connection between the battery M and pin *f* for the current is had by a wire, *g*, and this current passes from the pin *f* to the switch-arm F and to the arm D and band C, and from each pin *b* leads a wire, *h*, running to a bell, H, mounted on a board, G, as shown, or otherwise supported, and from each bell H a

wire, h', leads to the return-wire h'', running back to the battery. The connection is only shown to two independent bells H; but as many connections are to be had by the wires h as there are bells in the circuit. Each board G has mounted thereon an ordinary push-button, I, on the base of which is a two-way switch, J, and leading from the push-button and switch to the wire h'' is a connecting-wire, i', and from each push-button and switch is a wire, i, running to a bell, K, and an annunciator, L, having the usual display numbers, l, and the bell and annunciator are connected with the battery by a wire, k, to complete the circuit. The occupant of a room rings up his number on the annunciator by the push-button I, as usual, the release of the button stopping the ringing of the bell K; but when the occupant desires a continuous ringing of the bell K the switch J is moved onto the button or head j, producing a connection until the switch is moved back to the position shown in Fig. 1.

The operation of the switch-board is as follows: The board is located in the main office of a hotel, factory, or other building accessible to the one having charge of such office, and to call up any room the key F is brought over the button or head b' having a corresponding number to that of the room to be called, when, by pressing on the key, the connection is made and the bell H in the room rung. If the occupants of all of the rooms are to be notified simultaneously in case of a fire or other danger, the arm D is swung around into the position shown in Fig. 4, bringing the band C into contact with all of the pins or posts b and completing the circuit between the battery and all of the bells in the various rooms, producing a continuous ringing of such bells until the arm D is thrown back into the position shown in Fig. 3, carrying the band C out of contact with the pins b and breaking the circuit, and when in the position shown in Fig. 3, with the band out of contact, the board is for use by the switch key F on any desired head or button b.

The occupant of a room can ring up the annunciator by pressing on the push-button I, and in case the office is to be notified of a fire or other danger in any room the occupant turns the switch J onto the head or button j, notifying the office by the continuous ringing of the bell K of the danger, and the party in charge of the office can then notify all of the rooms by bringing the band C into contact with all of the pins or posts b.

The device is very simple in construction and can be applied and used with the ordinary annunciator, if so desired, or be used with a bell at the main office simply, and by its use any one room can be called or all of the rooms can be called simultaneously, and, although designed for use principally in a hotel or other building having a number of rooms and occupants, it will be found useful wherever it is desired to call up one party at a time or to ring up a number of parties, or to call a single station on a line or circuit or call up all of the stations on a line or circuit simultaneously, and it can also be used in a system of electric lighting for lighting one lamp at a time or in lighting all of the lamps in a circuit simultaneously.

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

1. The combination, with a base or bed, A, carrying a series of pins or posts, b, of the band C, for bringing all of the pins or posts into a circuit simultaneously, substantially as and for the purposes specified.

2. The base or plate A, having the groove a and a series of pins, b, in combination with the band C and swinging arm D, for drawing the band into contact with all of the pins or holding the band out of contact with the pins, substantially as and for the purposes specified.

3. The bed or base A, having the groove a and a series of pins or posts, b, in combination with the band C, swinging arm D, and switch-key F, for ringing all of the bells in a circuit or each bell singly, substantially as and for the purposes specified.

RICHARD H. WELDEN.

Witnesses:

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O. W. BOND.