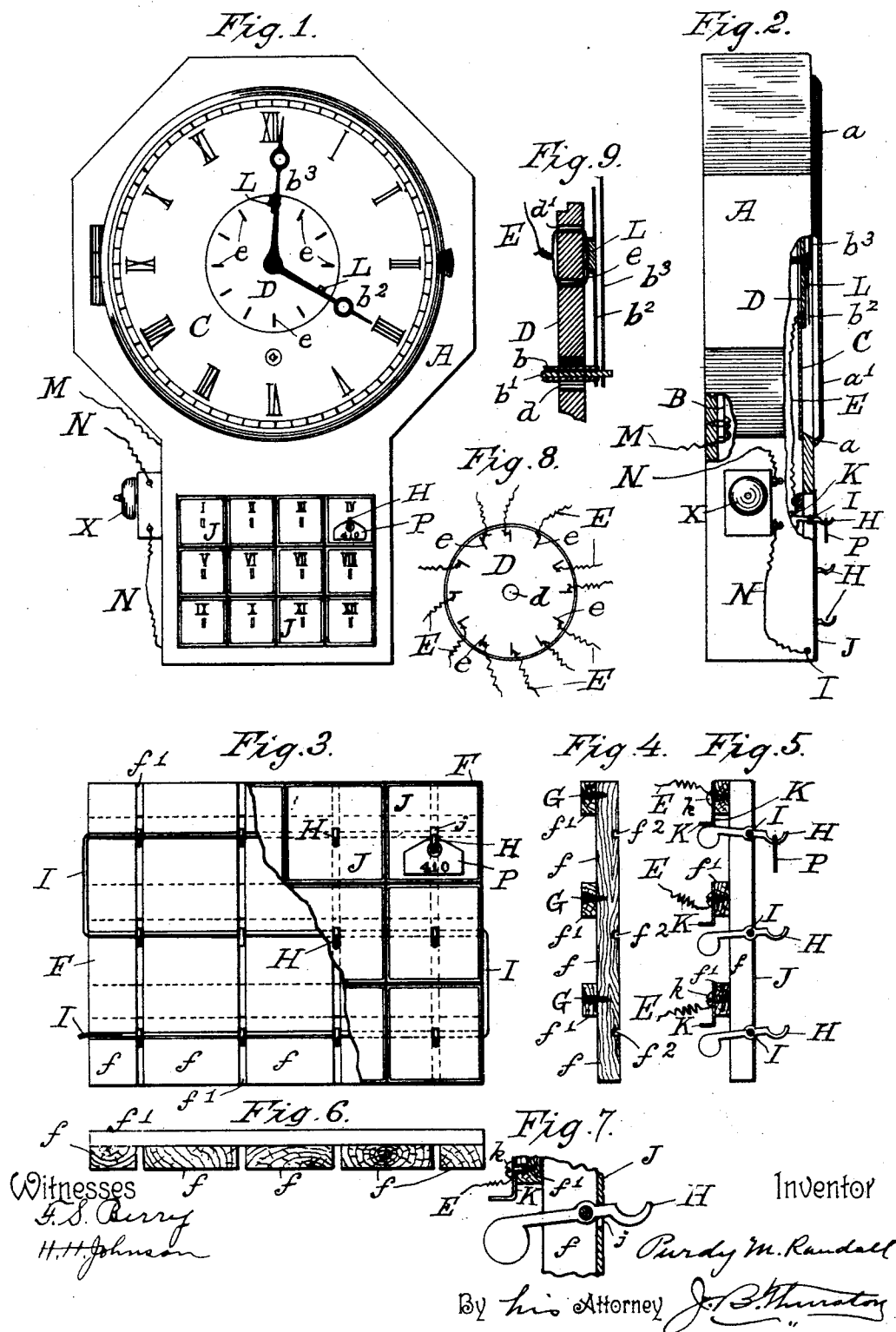


P. M. RANDALL.
ELECTRIC CALL.

Patented Jan. 2, 1894.



UNITED STATES PATENT OFFICE.

PURDY M. RANDALL, OF CONCORD, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF TO CHARLES A. HERBERT, OF SAME PLACE.

ELECTRIC CALL.

SPECIFICATION forming part of Letters Patent No. 512,217, dated January 2, 1894.

Application filed May 6, 1893. Serial No. 473,321. (No model.)

To all whom it may concern:

Be it known that I, PURDY M. RANDALL, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Electric Calls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to any devices calculated to aid the memory, or call any particular thing to mind, and may be used by business and professional men to aid in keeping an appointment, or in hotels as a means of reminding the clerk at what hour guests are to be called, as illustrated in the accompanying drawings forming a part of the following specification and claims.

The invention consists broadly in the electrical connection between the hour hand of a clock and a room check or key board representing any number of divisions of twelve hours, whereby a gong is rung at the required time a guest is to be called.

To carry my invention into practice a check or key board having levers or hooks for holding the check or key, each hook representing a certain hour or fraction in minutes thereof is employed, and each hook has a corresponding contact point for the hour hand on the dial of a clock, and to avoid intricacies in the drawings I have shown a board having but a small number of check hooks.

Referring now to the drawings, Figure 1, represents a front view of a clock to which my improvements are applied, Fig. 2, being a broken edge view of same. Fig. 3, is an enlarged broken elevation of my improved room check or key board. Fig. 4, is a vertical section of the same having the check hooks and electrical connections removed. Fig. 5, is a vertical sectional elevation of the room check board complete. Fig. 6, is a cross section of the board with all hooks and electrical connections removed. Fig. 7, is an enlarged elevation of one of my room check or key levers—with portions of the board and its immediate connections in sectional elevation. Fig. 8, is a reversed view of the commutator

disk, which I employ within the clock dial, and Fig. 9, is an enlarged sectional view of the same showing the hour and minute hands in their relative position.

Similar reference letters designate corresponding parts.

A, is the clock case or housing.

B, is a portion of the clock movement, but little of which is shown, as it has no bearing on the present invention aside from its necessary connection with one pole of the battery operating my improved device.

a, is the ordinary circular frame carrying the glass a', for covering the clock dial.

C, is the clock dial, which has a large concentric opening for mounting my improved commutator disk D, which is composed of any non-conducting material, and provided with a concentric perforation d for the reception of stems b—b', forming part of the clock-movement B, and mounting the hour and minute hands respectively b² b³, and with perforations d', arranged in circles near its outer edge.

E, are wires connecting the commutator D, with the room check or key board F, which for convenience in construction I form of the vertical and horizontal strips respectively f, and f', secured together by screws G. The key levers or hooks H, are arranged in tiers between the vertical strips f, and mounted upon wires I, which are passed across the face of said strips f, within the grooves f², which are shown best in Fig. 4.

In Fig. 3, one wire I, is arranged to carry all the levers H, and to one end of this wire is attached one of the battery wires as shown.

On the front of the board F, is provided a disk J, which may be divided up into circles, or squares as may be preferred, each square being marked either an even hour or a fraction thereof in minutes, to be hereinafter explained, and each square has a central perforation j, of proper size to admit a lever H, and sufficiently long to permit of the necessary vertical movement of said lever; which normally bears against the upper edge of said opening j.

K, are contact plates which may be fastened to the strips f', by a screw k, as shown best in Figs. 5 to 7, and to each of said plates is

attached an end of one of the commutator wires E, the opposite end of which may be attached to the commutator D, by being passed through one of the perforations d' , from back to front and then back through its adjacent hole from front to back, and then twisted as shown best in Figs. 8 and 9, forming loops e , on the front of the commutator.

The hour hand b^2 , is provided with a "brush" L, which forms contact with the loops e , as said hand b^2 passes around the dial C, thus opening and closing an electrical circuit under the following circumstances: the battery wire M, may be connected to some portion of the clock movement B, as shown in Fig. 2, and the battery wire N, connected direct to the wire I, which carries the key hooks H, and when either of said hooks is tipped down by the weight of a key or room check P, as seen in Figs. 1, 2, 3, and 5, the brush L, of the hour hand causes a current of electricity to pass on the wire E, to the plate K, which is thence conducted by means of the key hook H, (then in contact with said plate K) wires I, and N, back to the battery.

An electric call bell X, may be cut into either of the wires M—N, which, will be rung when the electric current passes through either of the wires E. In the drawings the bell is shown connected with the wire N.

The drawings show but twelve of the wires E, and the same number of loops e , arranged equidistant around the face of the commutator disk D, so as to be in alignment each with one of the twelve figures of the clock dial C, the opposite end of each wire E, being connected with one of the contact plates K, arranged each above a room check or key hook H, on the back of the room check or key board F; and in this case the squares of the disk J, should be marked 1, 2, 3, 4, &c., corresponding with each hourly division of the clock dial C,—the wires E attached to the loops e , connecting with those squares of the disk J, bearing a figure corresponding to that with which said loop is in alignment upon the clock dial. For instance:—the loop e , which is opposite the figure 1 on the clock dial, is connected by a wire E, with that square of the disk J, on which appears the figure 1;—that loop e , which is opposite figure 2 on the clock dial, is connected by a wire E, with that square of the disk J, on which appears the figure 2, and so on.

The manipulation of my improved device is very simple;—a guest at a hotel occupying room 410 wishes to be called at four o'clock, and before retiring he leaves his order with the clerk who has simply to take the guest's room check P, which bears his number and

hang it upon that hook H, projecting from that square of the disk J, bearing the figure 4, and when the hour hand b^2 , reaches figure 4 on the clock dial C, the bell X commences at once to ring, reminding the clerk that he must go to call the guest in room 410.

By providing a greater number of wires E, and loops e , upon the commutator, and a greater number of squares containing the hooks H, upon the disk J, the device will do much better service.

In practice I find forty-eight wires E, with their loops e upon the commutator disk D, and forty-eight divisions of the disk J, with the same number of hooks H, is a good working number;—in this case the hooks H, would represent fifteen minutes of time instead of one hour, the squares being marked consecutively as follows: 1,—1:15,—1:30,—1:45, 2,—2:15,—2:30,—&c., and the room check or key board F, need not necessarily be contained in the clock cabinet as shown but may be in another room.

Having now described my invention and the manner of its operation, I do declare that what I claim is—

1. In an electric time call, the combination with a time piece provided with a commutator and brush for closing a gap in an electric circuit at pre-determined intervals, said circuit including an alarm, of a switch board interposed in said circuit and consisting of a suitable frame provided with a series of contact points, each of said contact points having electrical connections with its respective segment of the said commutator, and a corresponding series of vertically movable levers pivoted upon a common axle and arranged to make contact with the said fixed contact points, the said axle having electrical connections with the alarm, whereby the circuit may be completed through the medium of a lever and its respective contact point, as set forth.

2. In an electric time call, the combination with the regulating time piece thereof, of a circuit-closing commutator consisting of an insulating disk provided with an opening allowing the hand stems to protrude, and having a plurality of holes formed in radially arranged pairs, and a wire passed outwardly through one and then backwardly through the other of each pair of holes, to form commutator bars, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PURDY M. RANDALL.

Witnesses:

J. B. THURSTON,
H. J. CRIPPEN.