(No Model.) 2 Sheets—Sheet 1.

F. BENNER.

ELECTRIC GUEST CALL.

No. 481,919. Patented Aug. 30, 1892.

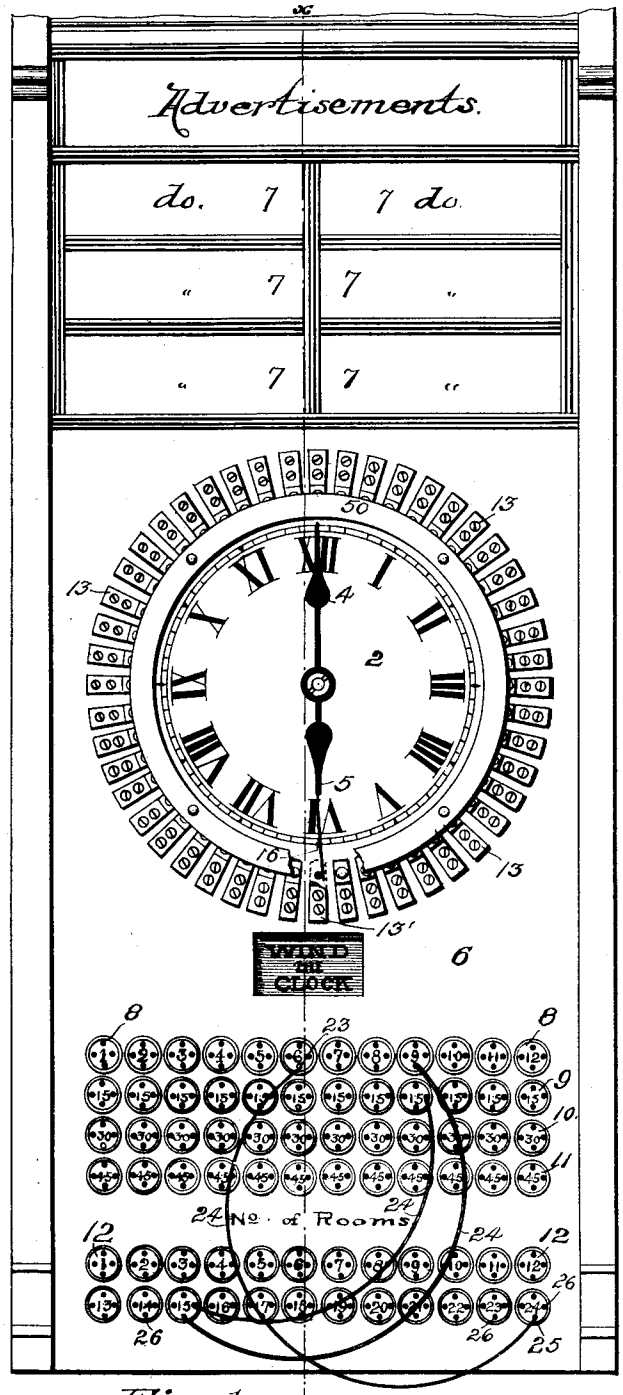

Fig. 1.

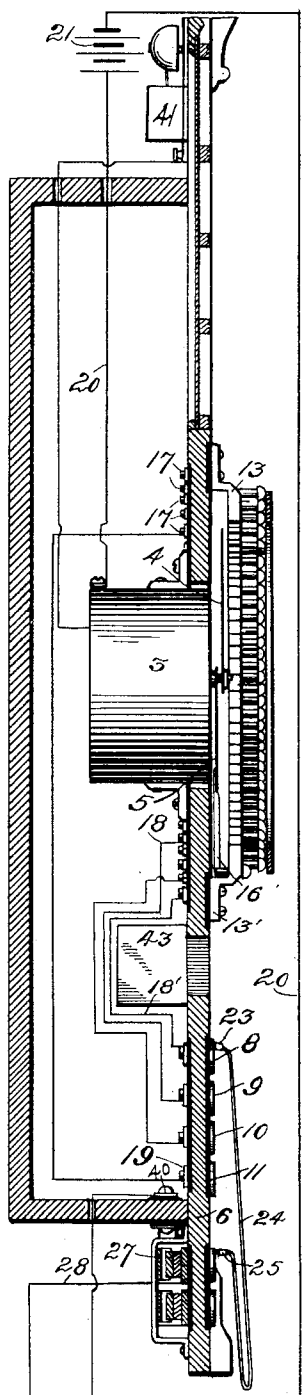

Fig. 2.

Witnesses.
C. E. Van Doren
O. G. Hawley.

Inventor
Franklin Benner
By Paul & Merwin
his Attorneys

(No Model.) 2 Sheets—Sheet 2.

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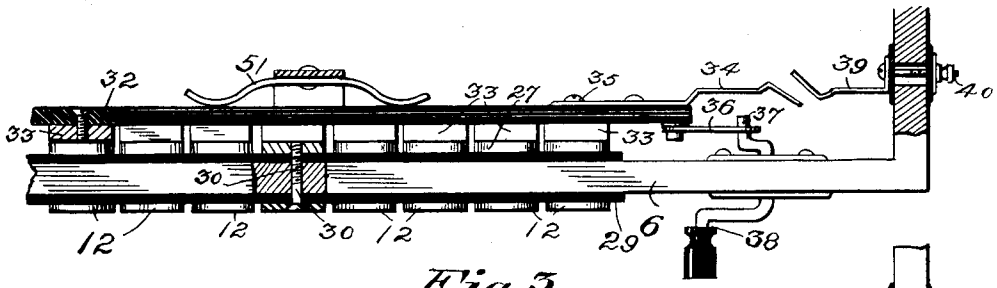

Fig. 3.

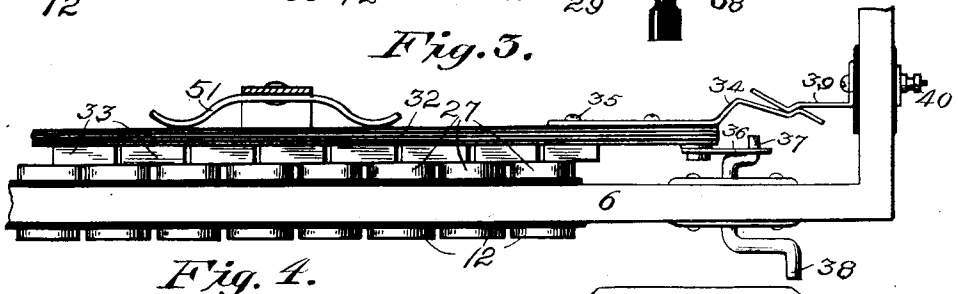

Fig. 4.

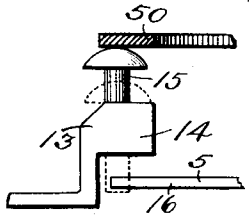

Fig. 5.

Fig. 6.

Witnesses.
C. E. Van Dorrn.
C. F. Hawley.

Inventor:
Franklin Benner
By Paul & Merwin
his Attorneys

UNITED STATES PATENT OFFICE.

FRANKLIN BENNER, OF MINNEAPOLIS, MINNESOTA.

ELECTRIC GUEST-CALL.

SPECIFICATION forming part of Letters Patent No. 481,919, dated August 30, 1892.

Application filed October 26, 1891. Serial No. 409,808. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN BENNER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Electric Guest-Calls, of which the following is a specification.

My invention relates to guest-calls for hotels, and especially to improvements in that class of guest-calls in which the hands of the clock are employed in making electric connections.

The object of my invention is to simplify and cheapen the construction of such devices and at the same time to render their use thoroughly efficient and reliable.

To this end my invention consists in the construction and combinations hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a front view of a guest-call embodying my invention. Fig. 2 is a vertical cross-section thereof on the line x x of Fig. 1. Figs. 3 and 4 are enlarged detail views showing the fire-alarm apparatus provided in connection with my device. Fig. 5 shows one of the contact segments or brackets employed on the face of the clock. Fig. 6 is a diagrammatic representation of an annunciator in connection with several other parts of the guest-calls.

As shown in the drawings, the clock face or dial 2 and the clock 3 are of the ordinary construction.

4 and 5 represent the minute and hour hands, respectively. The front 6 of the case is made of wood, so as to insulate the several parts. The upper part of the guest-call is devoted to the advertising-spaces 7 and the lower part to the number and socket plates. The upper sets of these plates indicate the twelve hours of the day and the quarter-sections thereof. The plates 8 in the upper row indicate the even hours from one to twelve, the next row 9 the first quarter or fifteen minutes, and the rows of plates 10 and 11 the thirty and forty five minute sections, respectively. At the bottom of the board I arrange the plates 12, each of which indicates a different room in the hotel. Arranged in a circle around the clock-dial are the contact-segments 13, made in the form of small brackets. (Shown clearly in Fig. 5.) The upper ends 14 of these brackets extend inward and are thick enough to form guides for the contact-pins 15. The insulated ring 50 is arranged to prevent the pulling out of the brackets. When these pins are pushed down into positions corresponding to the dotted position of Fig. 5, they come within the path of the contact brush or spring 16, arranged on the hour-hand. These segments are insulated from one another and each segment is represented on the inside of the guest-call by a small binding-post 17, thoroughly insulated from the others. A wire 18 or other electric connection extends from each binding-post, representing a particular point or time on the clock-dial 3, to a binding-post 19, belonging to a corresponding time-plate 8, 9, 10, or 11 on the face of the guest-call. Thus it will be seen that the pin 15 of a particular contact-segment being pushed in—as, for instance, the pin opposite "VI"—a connection is made with the plate marked 6 in the upper row of the time-plates. From the framework of the clock a line 20 extends through a battery 21 to an electric bell 22, situated in a specified room of the hotel. Suppose this room to be "No. 24," the circuit may be traced from the battery to the clock, from thence through the hour-hand and the spring 16 to the pin "six o'clock," contact-segment 13′, thence through the board to the binding-post thereof, and by the wire 18′ to the plate "No. 6" in the row of plates 8. From thence the circuit is traced through the plug 23 and the loop-cord 24 to a similar plug 25, inserted in one of the plug-sockets 26 of the room-plate 24. Current passes thence through to the back of the board and the plate 27 to the strand 28, leading to the bell 22 in the room "No. 24." From the bell the circuit is completed through the wire 20 to the battery 21 or through a ground connection, whereupon the bell will be caused to ring until by the movement of the hour-hand the spring 16 is carried past the pin of the segment 13′. If the pin of the segment next in advance has been

pushed in also, the spring 16 will strike it within fifteen minutes after six, and a loop-cord and plugs being connected with the "6.15" time-plate and the plate of a given room the call-bell therein will be rung at that time. In each of the plates or small disks on the board I provide four of the socket-holes 26, so that if necessary four connections may be made from a single plate. As a usual thing, however, only a single plug is provided in connection with each room-plate 12, and the end thereof is preferably permanently secured thereto, so that the cord may not be lost. The particular construction of these plates is shown best in Figs. 3 and 4, in which I also have a fire-alarm device common to all the rooms and by the operation of which the bells in all the rooms may be caused to ring simultaneously and continuously. In these figures the front wall is, for clearness, shown in full lines instead of being sectioned. The plates 12 are fastened directly on the board 6, or, if desired, upon a sheet of insulating material 29 by screws 30, passing through the board and fastened in the back plates 27, from which the wires extend to the several call-bells.

For ringing all the call-bells at once I provide the sliding fire-alarm device consisting in the strip 32 of insulating material, preferably hard rubber, and provided with sections 33, normally standing over the several sections 27 and practically forming a part thereof, being preferably insulated from all other parts. The spring 51 presses on the bar 32 and insures good contacts between the back plates and block 33. On the end of the bar 32 I secure the contact-spring 34, having a screw 35, electrically connecting the same with the end section 33. The link 36 is pivotally connected with the end of the bar 32 and the crank 37, which extends through the board 6 and is provided with the handle 38, by means of which the crank may be thrown over into the Fig. 4 position, thereby bridging the sections 33 over the plates 27 and making a continuous path for the current and at the same time snapping the spring 34 under the stationary contact-spring 39, connected with the binding-post 40, which is in turn connected with the battery. Thus it will be seen that the clock is short-circuited and a direct battery connection completed through all the lines and to all of the call-bells to sound the alarm.

One of the chief objections to guest-calls which depend upon the operation of a clock is that the attendants allow the clock to run down, thereby, of course, rendering the whole system inactive. To overcome this objection and compel attention, I provide the annunciator having a drop bearing a sign "Wind the clock," or the like, as shown in Figs. 1 and 7. This is adapted to show through an opening in the board 6, and the construction of the apparatus is that shown in Figs. 6 and 7, in which the bell 41 of Fig. 7 corresponds to the bell 41 of Fig. 2, while the annunciator is supposed to be contained in the box 43 of Fig. 2. A separate bell may be used in connection with this part of the apparatus or connections may be made with the main battery 21. The drop is arranged to fall when the clock runs down. To operate the annunciator at just this time, I provide the contact-bracket 44, insulated from the rest of the clock and provided with several of the lugs 45, with one or two of which the clock-spring 46 when it is fully expanded makes contact, thereby completing the circuit through the frame of the clock to the bell, thence through battery, through the coils 47 of the annunciator, and back to the clock-frame. It is obvious that either in this case or in the other connections of the guest-call grounded circuit might be employed instead of metallic. The annunciator best adapted for my use is shown in Fig. 6, where the electro-magnet, the armature, and the drop-shutter are of the well-known types.

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

1. The combination, in a guest-call, of a clock and an hour-hand for the same, provided with a contact brush or spring 16, with contact-bracket segments 13 arranged about the dial of said clock, movable pins 16, arranged in said bracket and adapted to be pushed through the same into the path of the end of said spring 16, said segments being insulated from one another, and means for connecting the same with call-bells arranged in the several rooms of the building, as described.

2. The combination, with the clock provided with the hour-hand having the contact-spring 16, of the contact-segments 13, having the form of brackets and provided with pins 16, binding-posts for said segments on the back of the insulating-board on which the same are placed, and means for preventing the removal of said pins from said brackets, substantially as and for the the purpose specified.

3. The combination, in a guest-call, of a clock having an hour-hand, with insulated contact-segments arranged about the same and representing the various time-divisions of the clock, contact-pins slidably arranged in said sections, a brush on said hour-hand to engage the same when pushed in, time-plates 8, 9, 10, and 11, arranged upon the face of the call, plug-sockets therein, room-number plates arranged thereon, plugs and cords connected therewith, said plugs adapted to be placed in said sockets, connection from said room-number plates to call-bells, and connections between the time-plates and corresponding contact-segments, substantially as described.

4. The combination, with the room-number

plate, of a bar 32, blocks 33, insularly arranged thereon, back plates 27, screws 30, connecting the same with said number-plates, means for holding said blocks or back plates in contact, springs 34 and 39, said spring 34 connected with one of said blocks, and means for moving said bar to bridge said blocks and plates, substantially as described.

In testimony whereof I have hereunto set my hand this 13th day of October, 1891.

FRANKLIN BENNER.

In presence of—
C. G. HAWLEY,
F. S. LYON.