No. 872,224. PATENTED NOV. 26, 1907.

R. C. DICK.

ELECTRIC GUEST CALLING CLOCK.

APPLICATION FILED JUNE 4, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

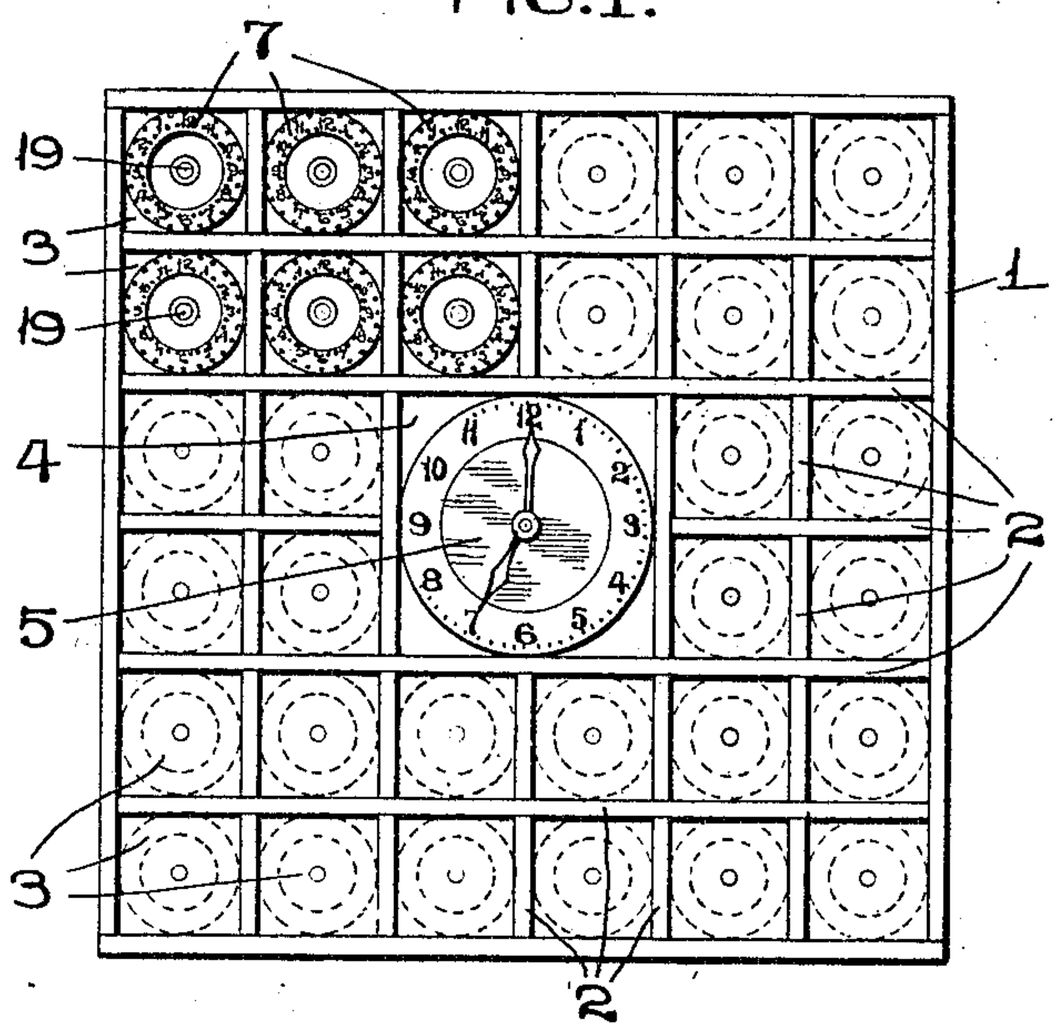
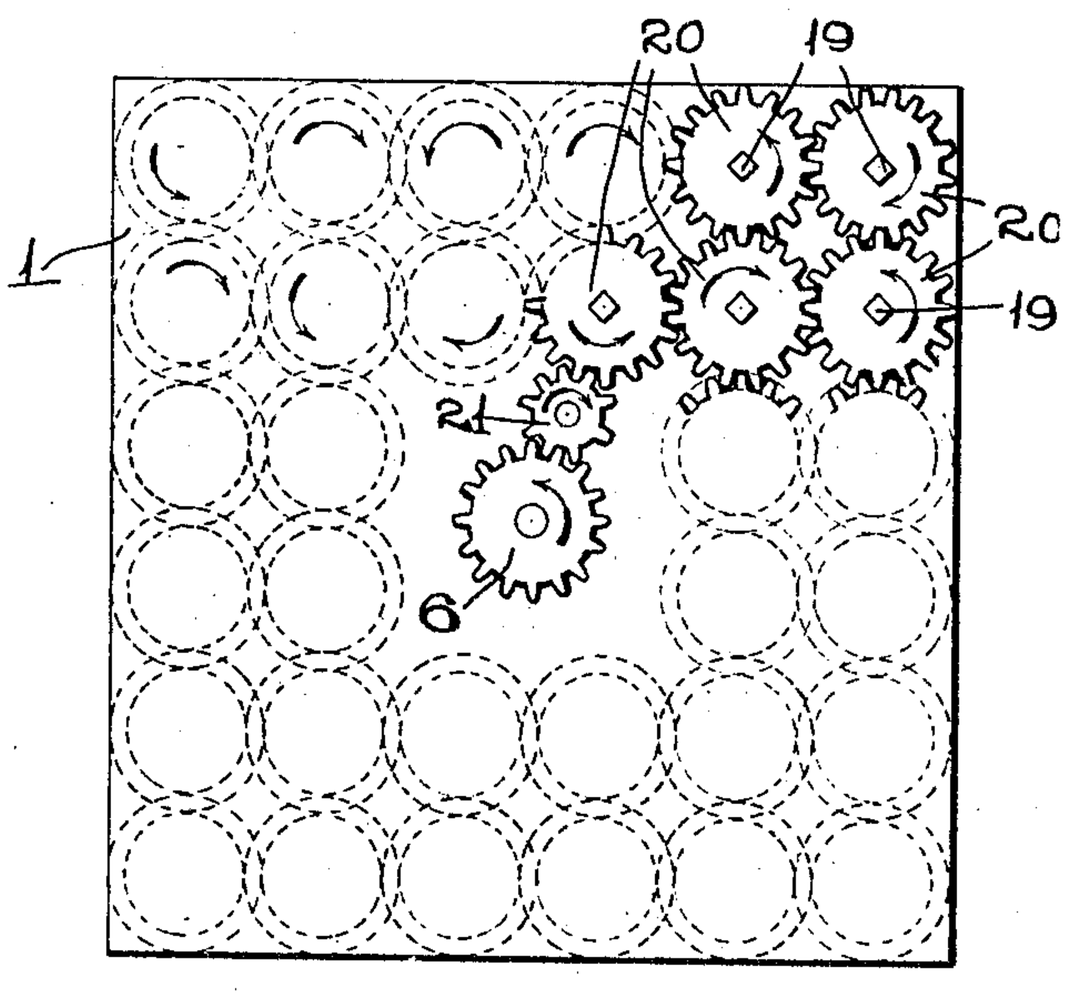


FIG. 2.



ATTEST.

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INVENTOR.

RALPH C. DICK.

BY Wigmore & Dugan.

ATT'Y'S.

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FIG. 3.

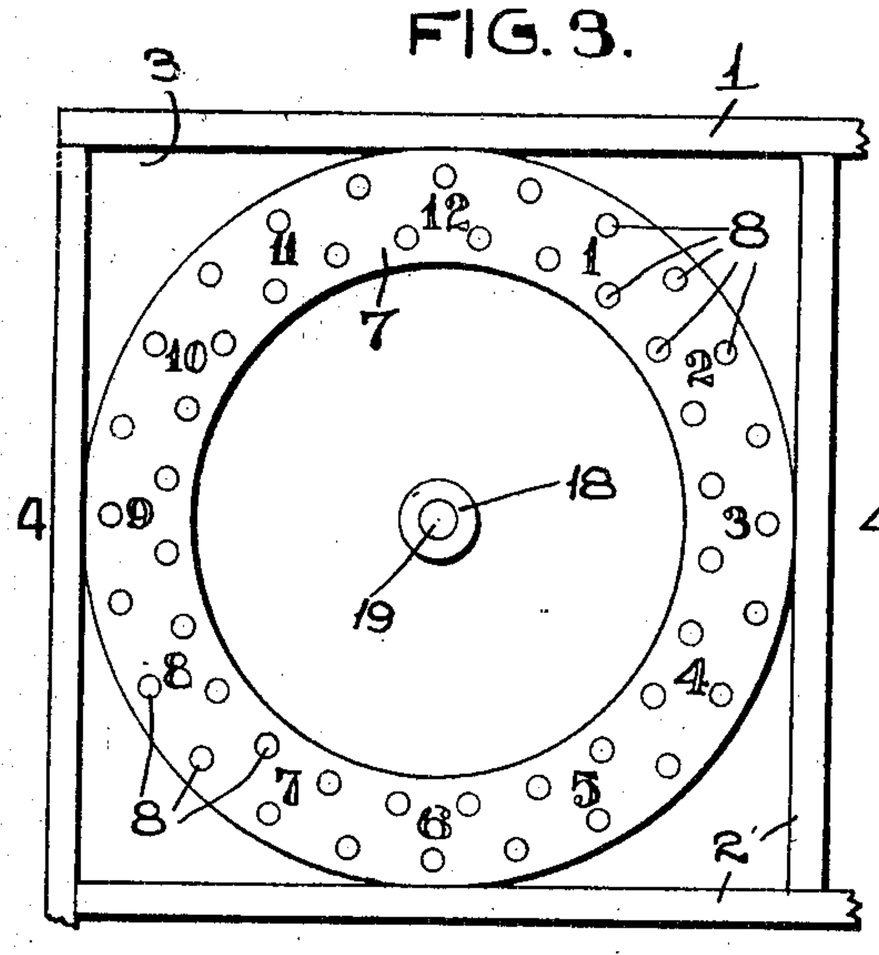


FIG. 5.

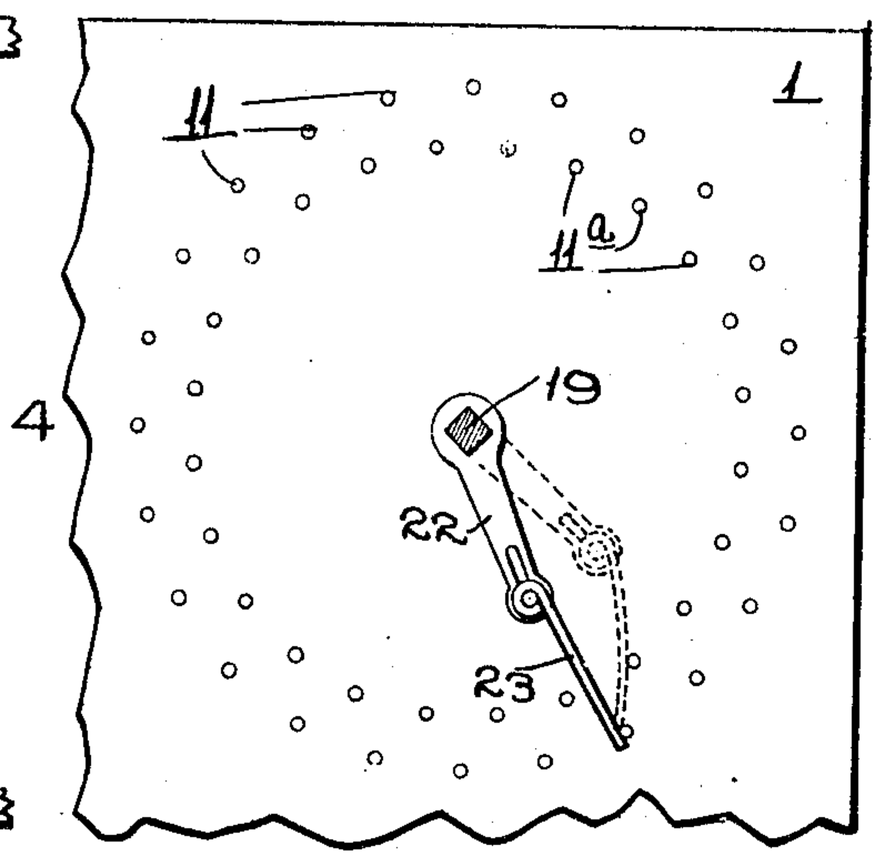


FIG. 6.

FIG. 4.

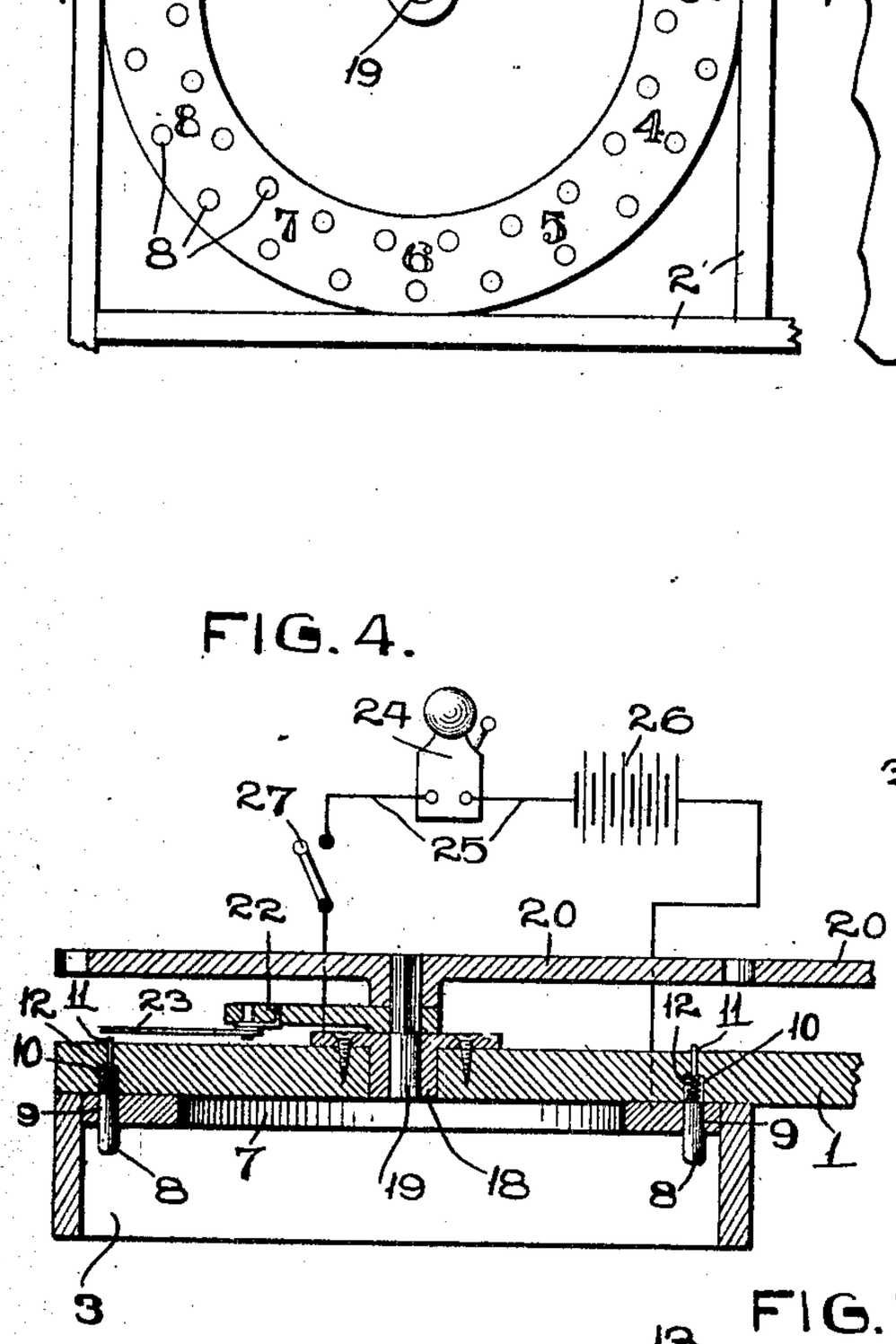
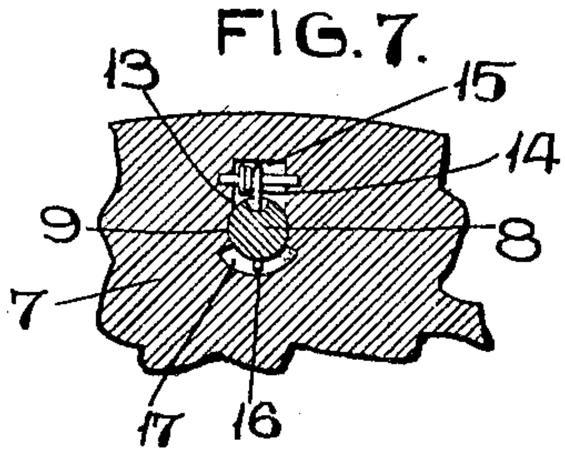


FIG. 7.



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UNITED STATES PATENT OFFICE.

RALPH C. DICK, OF ST. LOUIS, MISSOURI.

ELECTRIC GUEST-CALLING CLOCK.

No. 872,224. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed June 4, 1906. Serial No. 320,028.

To all whom it may concern:

Be it known that I, RALPH C. DICK, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Electrical Guest-Calling Clocks, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an electrical guest calling clock, and the object of my invention is to provide a simple and easily operating mechanism for sounding an alarm in the rooms of hotels, and the like, as a rising signal for the guests.

My invention consists in a frame located in the office of the hotel, in the center of which frame is arranged a clock, and surrounding which clock is a series of small dials, one for each room in the hotel, in which dials are arranged push buttons corresponding to certain divisions of time, and which push buttons are to be operated so as to be moved into the path of travel of a hand which, when contacting with the push button that has been moved in, closes an electrical circuit, which sounds a bell or similar alarm in a corresponding room, thus signaling the occupant of said room.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of the frame containing the clock and small dials, and which is located in the office, or at the clerk's desk; Fig. 2 is a rear elevation of the frame; Fig. 3 is an enlarged front elevation of one of the small dials of the frame; Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 3; Fig. 5 is an elevation of the rear side of a portion of the frame, and showing the ends of the push buttons and the spring contact finger; Fig. 6 is an enlarged detail section illlustrating the construction of one of the push buttons; Fig. 7 is a detail section taken on the line 7—7 of Fig. 6.

Referring by numerals to the accompanying drawings:—1 designates a rectangular frame, and located on the front face thereof is a series of horizontally and vertically disposed rails 2, which form a series of small rectangular compartments 3, and formed in the center of this frame is a large rectangular compartment 4, in which is located an ordinary clock 5, provided with a main spring of extra strength.

The shaft of the clock 5 on which the hour hand is mounted extends through the rectangular frame 1, and fixed on the rear end of said shaft and on the rear side of said frame is a gear wheel 6.

Located in each compartment 3, and lying immediately against the face of the frame 1, is a ring 7, on the face of which appears the numerals from 1 to 12, arranged similarly to the arrangement of the numerals on a clock dial.

Arranged for operation through each ring 7, adjacent the outer edge thereof, is a series of push buttons 8, which are located at equal distances apart, and said push buttons are so located as to correspond to the hours and half-hours of the clock dial. A second row of these push buttons 8 is arranged for operation through each ring 7 adjacent the inner row thereof, which inner row are arranged at equal distances apart, and each so located as to correspond to the 15-min. and 45-min. indications on a clock dial. All of these push buttons are alike in construction and operation.

Each button is arranged to slide through a suitable aperture 9 formed through the ring 7, and formed in the frame 1, immediately to the rear of this aperture, is a recess 10. Integral with the body of each push button 8, and projecting through the frame 1, is a stem 11, and located thereon and occupying the recess 10 is an expansive coil spring 12, which normally forces the push button forward. Formed in the body portion of each push button 8 is a notch 13, which is adapted to be engaged by a spring pawl 14, which is held in a suitable recess 15 formed in the ring 7 adjacent the aperture 9. Seated in the body of each push button 8 is a pin 16, which operates in a slot 17, formed in the ring 7, and which pin forms a stop to limit the forward movement of the push button.

Arranged in the center of each compartment 3 is a bearing 18, in which is journaled for rotation a shaft 19, and fixed on the rear end of each shaft is a pinion 20. All of the pinions 20 are of the same size, and they are so arranged as to mesh with one another, and form a continuous train of gearing on the rear side of the frame 1. An intermediate pinion 21, suitably journaled on the

rear side of the frame 1, meshes with the gear wheel 6 and one of the pinions 21, and thus the rotary motion of the shaft carrying the hour hand of the clock 5 is imparted to all of the pinions 20. Fixed on each shaft 19, just inside each one of the pinions 20, is an arm 22; and fixed to the outer end thereof is a light spring 23. The stems 11 on the outer row of push buttons are of such length as that when said push buttons are moved rearwardly until the pawls 14 engage in the notches 13, the rear ends of said stems are in the path of travel of the outer end of the spring 23.

When the inner row of push buttons are moved rearwardly and held by the corresponding pawls 14, the rear ends of the stems of said inner row of push buttons, which are rounded as indicated by 11ª are in the path of travel of the central portions of the springs 23.

A bell, such as 24, is located in each one of the rooms, and leading from each bell are the conductors 25, one of which leads to the bearing 18, and the opposite one leading to the ring 7. A suitable battery 26 is located in this circuit, and a switch 27 is located in each room adjacent the bell.

The operation of my improved apparatus is as follows: A guest occupying room No. 1 desiring to be called at 7:30 notifies the clerk, or person in charge of the apparatus, who in turn presses the push button which is located midway between the indicating numbers 7 and 8 on the ring in compartment No. 1 of the apparatus; and, as a result, the stem 11, carried by the rear end of said push button is forced outwardly into the path of travel of the outer end of the spring 23, carried by the corresponding arm 22 and shaft 19. The pawl 14 engaging in the notch 13 holds the push button in this rearward position against the normal pressure of the coil spring 12. The clock 5 operating in the usual manner drives all of the pinions 20 on the rear side of the frame 1, owing to the arrangement of the gear wheel 6 and intermediate pinion 21. Thus all of the arms 22 and springs 23 are rotated with the pinions 20. When the spring 23 carried by the arm 22 on the rear of compartment No. 1 moves around until it contacts with the stem of the rearwardly moved push button, the circuit to the bell in room No. 1 will be closed, and said bell will be sounded. The arm 22, continuing its movement, carries the spring 23 past the rearwardly moved push button, and the instant the contact is broken, the bell will cease ringing. The spring 23 is of very light material, so that it will readily yield when passing out of contact with the stem 11. The outer ends of the stems of the inner row of push buttons are rounded, as indicated by 11ª in order that the springs 23 will gradually slide over said rounded ends in passing said stems, (as indicated by dotted lines in Fig. 6.) After a bell has thus been rung and before the arm 22 and spring carried thereby makes another revolution, the clerk, or person in charge of the apparatus, engages the push button that has been moved rearwardly and moves the same further to the rear, so as to disengage the spring pawls 14 from the notches 13, and at the same time rotates the push button either to the right or to the left, and then allows said button to return to its normal position following the action of the coil spring 12. By thus shifting the button to the right or left, the spring pawl 14 cannot engage with the notch 13 as the push button returns to its normal position.

An apparatus of my improved construction is particularly applicable for hotels, is simple in construction and operation, and can be readily set for a call at any quarter hour.

I claim:

In an apparatus of the class described, a frame, a clock mounted therein, a series of shafts journaled in the frame, a train of gearing operated by the clock for simultaneously driving all of the shafts, spring arms carried by the shafts, a ring fixed on the face of the frame around each shaft, a set of spring actuated push buttons arranged for operation through each ring and the frame, the rear ends of which push buttons are moved into the path of travel of the corresponding spring arm when said push buttons are moved rearwardly, spring catches arranged in the ring adjacent the push buttons for locking said push buttons when moved rearwardly, an audible signal, and means whereby said signal is sounded when the spring arm contacts with the rear end of one of the push buttons.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

RALPH C. DICK.

Witnesses:
EVELYN C. CONNEY,
S. MILLER.