June 19, 1934. R. B. BAKER 1,963,346

PAGING APPARATUS

Original Filed March 22, 1926 2 Sheets-Sheet 1

Fig. 1

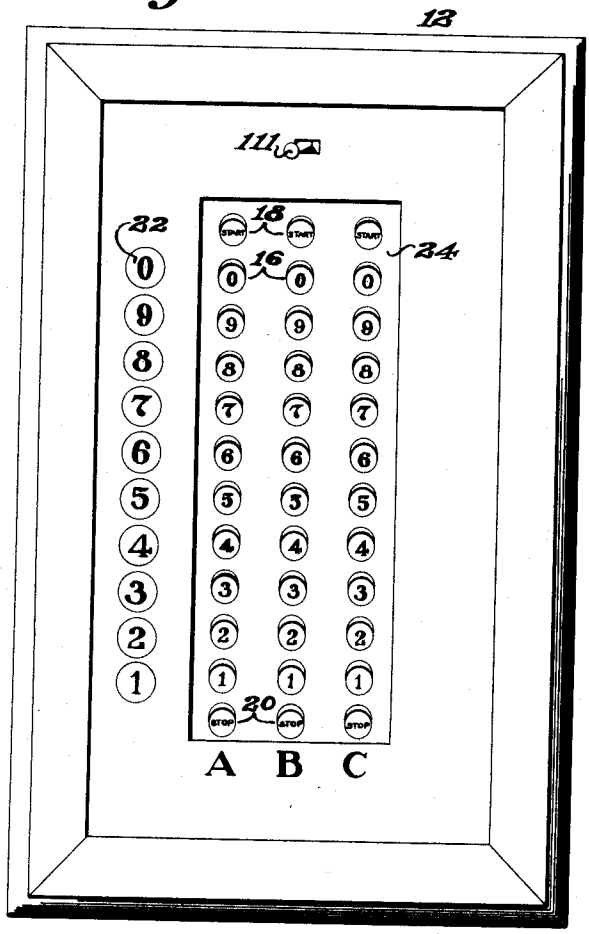

Fig. 2

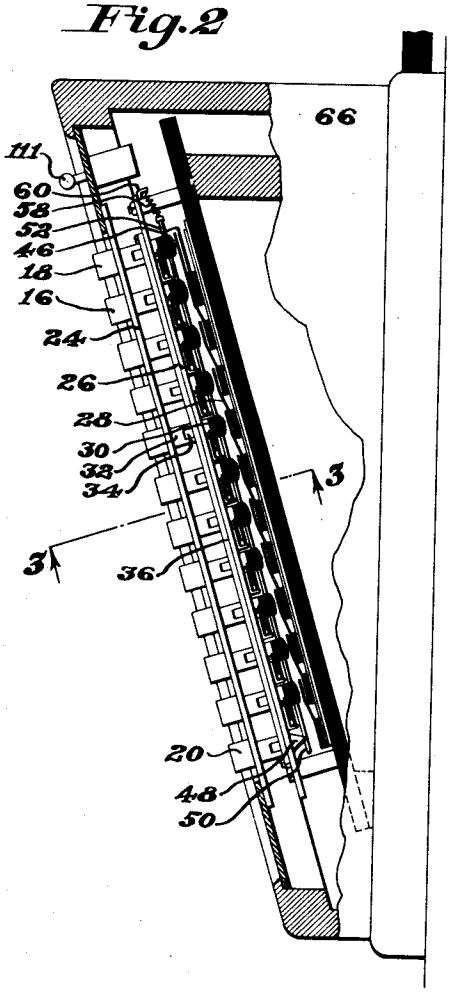

Fig. 3

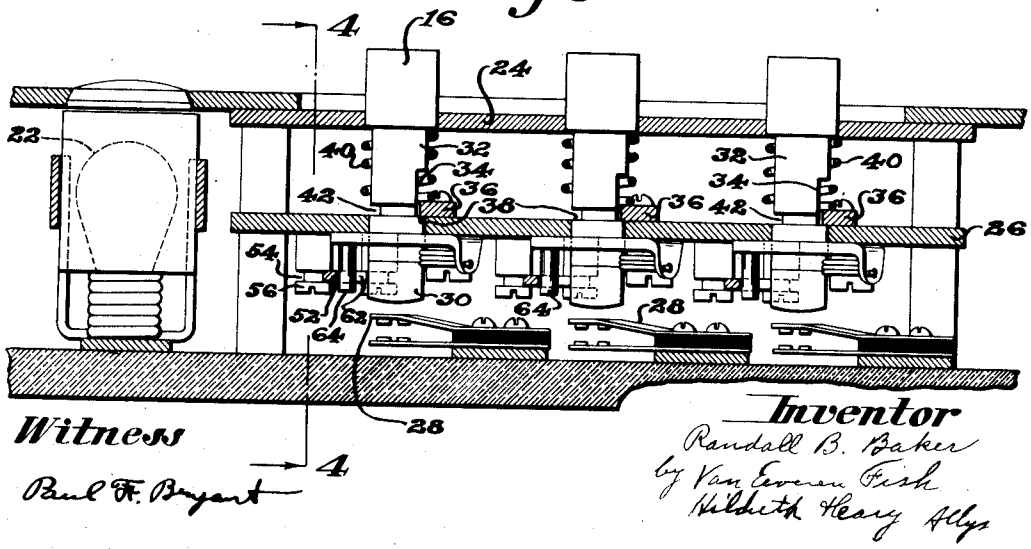

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Fig. 4

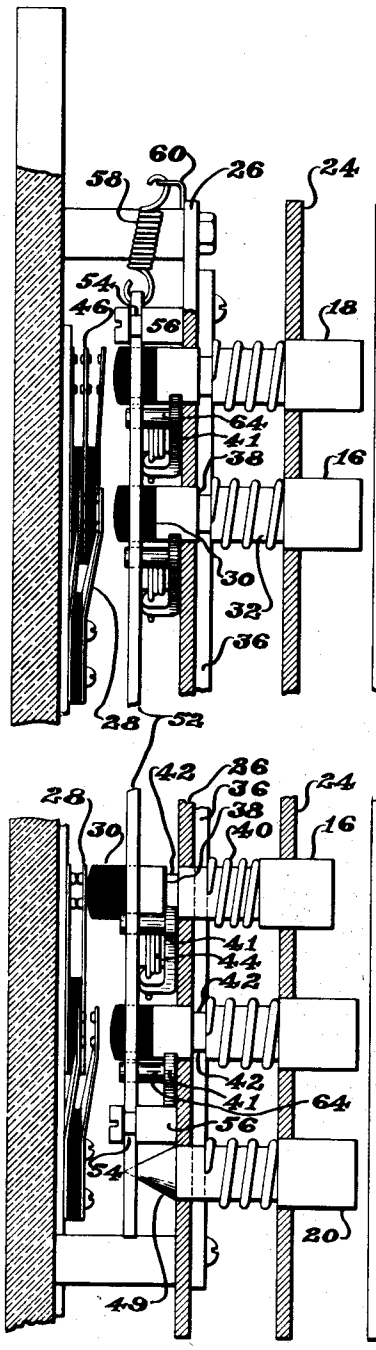
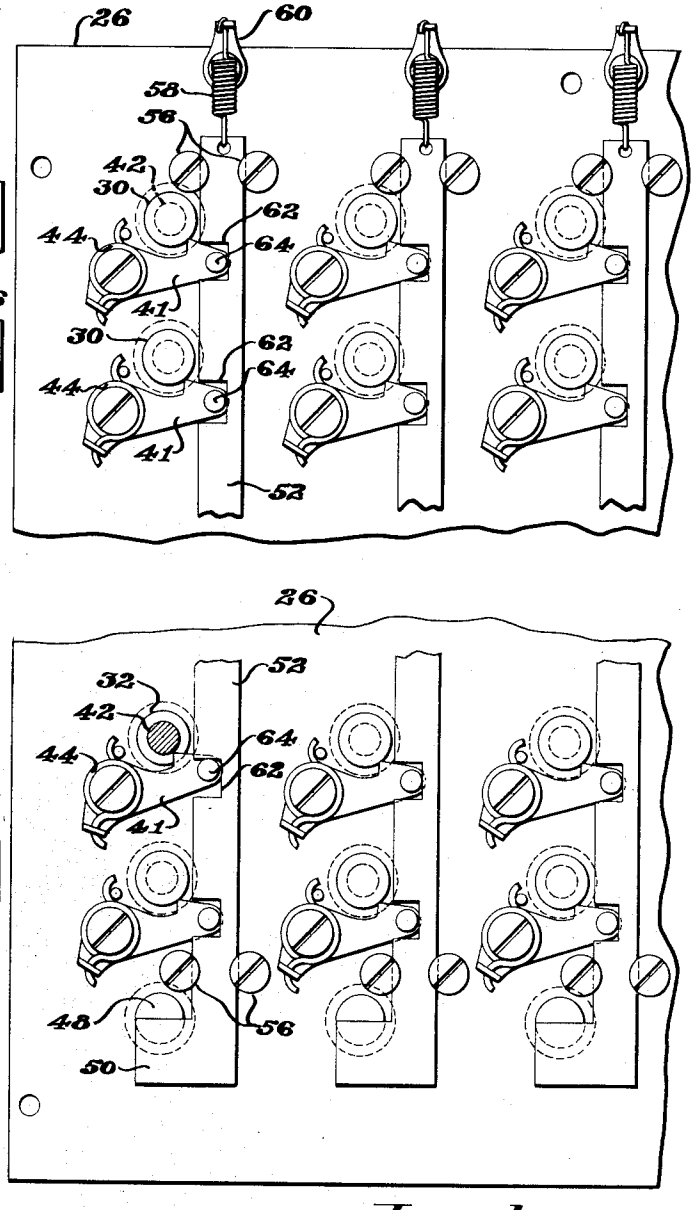


Fig. 5



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Patented June 19, 1934 1,963,346

UNITED STATES PATENT OFFICE

1,963,346

PAGING APPARATUS

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Original application March 22, 1926, Serial No. 96,475, now Patent No. 1,795,536, dated March 10, 1931. Divided and this application February 16, 1931, Serial No. 515,927

1 Claim. (Cl. 177—353)

The present invention relates to paging apparatus, and more particularly to paging apparatus of the type disclosed in my Patent No. 1,795,536, granted March 10, 1931, of which this application is a division.

The object of the present invention is to reorganize and improve the construction of paging systems with a view to affording a simple and conveniently operated apparatus for paging a number of different persons either successively or at the same time. To this end the present invention consists in the paging apparatus hereinafter described and particularly defined in the claim.

In the accompanying drawings, Fig. 1 is a front elevation of a call board forming a part of the improved paging apparatus; Fig. 2 is a side elevation partly in section of the call board shown in Fig. 1; Fig. 3 is a section on line 3—3 of Fig. 2; Fig. 4 is a section on the line 4—4 of Fig. 3; and Fig. 5 is a bottom plan view of the switch control apparatus of the call board.

The illustrated embodiment of the invention comprises a doctor's paging system employing one or more annunciators adapted to be placed at desired locations in a hospital and arranged to give visible numerical signals as set up on a central call board. The system is of a flasher type and is designed to periodically give a series of different signals in quick succession, thus in calling three doctors their corresponding numbers will be simultaneously set up on the call board and the numbers will be successively flashed at intervals on the various annunciators. The showing of the signals is controlled by a flasher which is driven by an electric motor under the control of the call board operator. The annunciator lamps are operated from the usual lighting circuit while the call board and the flasher switches are preferably energized from a low voltage source in order to eliminate any possibility of arcing at the contacts of the switches. The numbers which are set up on the call board are made effective to operate the annunciator through a system of relays which are included in the main circuit. An audible signal which may be useful in case of emergency is made operative by a control at the call board and is operated with the annunciator lamps from the main lighting circuit.

The annunciator, the flasher, and the electrical connections are shown and described in detail in my patent above referred to.

The call board 12, as shown in Fig. 1, comprises three rows of buttons indicated at A, B and C, each row comprising numbered paging buttons 16 arranged from 1 to 0 as in the annunciator, a start button 18 at the top of the row and a stop button 20 at the bottom of the row. A row of pilot lights 22 is arranged opposite the rows of buttons to indicate to the operator the numerals which are being flashed on the annunciator. As shown in Figs. 3 and 4, each of the call board buttons 16 protrudes through a panel 24 and is movable through a subpanel 26 to operate a corresponding leaf spring switch 28. Each button has an insulating base 30 secured to the bottom of a plunger 32 which has a flattened surface 34 to co-operate with a bar 36 to prevent rotation of the button. A bar 36 is provided for each row of buttons and extends substantially the full length of the subpanel 26. Each bar 36 slightly overlaps the openings in the subpanel 26 through which the buttons extend to engage a shoulder 38 of each button and limit the upward movement thereof. A coil spring 40 surrounds the plunger portion of each button and acts between the bar 36 and the head of the button, tending to restore the button to its normal position. Upon being depressed, the button closes the two contacts of the spring switch 28 and the button is retained in depressed position by a pivoted latch 41, the end of which enters an annular groove 42 formed in the plunger portion of the button. A torsion spring 44 urges the latch toward the button. The start button 18 of each row is similar in construction to the paging buttons 16 and operates a three contact spring switch 46. The stop button 20 has a conical base 48 which engages with the inturned end 50 of a release bar 52 which is slidingly received in grooves 54 of a series of retaining bolts 56 threaded into the bottom of the subpanel 26. The release bar is normally urged toward the position shown in Fig. 5 by means of a tension spring 58 secured between the upper end of the bar and a bracket 60 secured to the subpanel. The release bar is provided with a series of rectangular notches 62 within which are received pins 64 depending from the latches 41. Upon depression of the stop button, the release bar is cammed downwardly against the tension of the spring 58 and pulls on the pins 64 of such of the latches as have entered into engagement with the grooves 42 of the buttons, thereby releasing the buttons and permitting them to be restored to upper position by the springs 40. The apparatus is enclosed in a box 66 which may be supported upon a wall or table

or in any suitable position convenient to the operator.

An audible signal switch 111 on the call board may be employed, as described in the copending application, for intermittently energizing an audible signal through the flasher.

Having thus described the invention, what is claimed is:

A paging apparatus having, in combination, a call board, a row of switches, a row of switch-operating paging buttons on the call board, each button having a round shank with a flattened portion and a stop shoulder, a sub-panel, the call board and the sub-panel having aligned openings through which the buttons extend, a bar secured to the subpanel and co-operating with the flattened portions of the shanks and with the stop shoulders to prevent rotation thereof and to limit their return movement, a coil spring surrounding each button and engaging with the bar and button to hold the button normally in raised position, means for retaining a button in depressed position and releasing means to permit the button to return to raised position under the action of the spring.

RANDALL B. BAKER.