(No Model.)

F. S. CARTER & G. P. STUMPF.

ELECTRICAL ANNUNCIATOR.

No. 486,243. Patented Nov. 15, 1892.

Fig 3

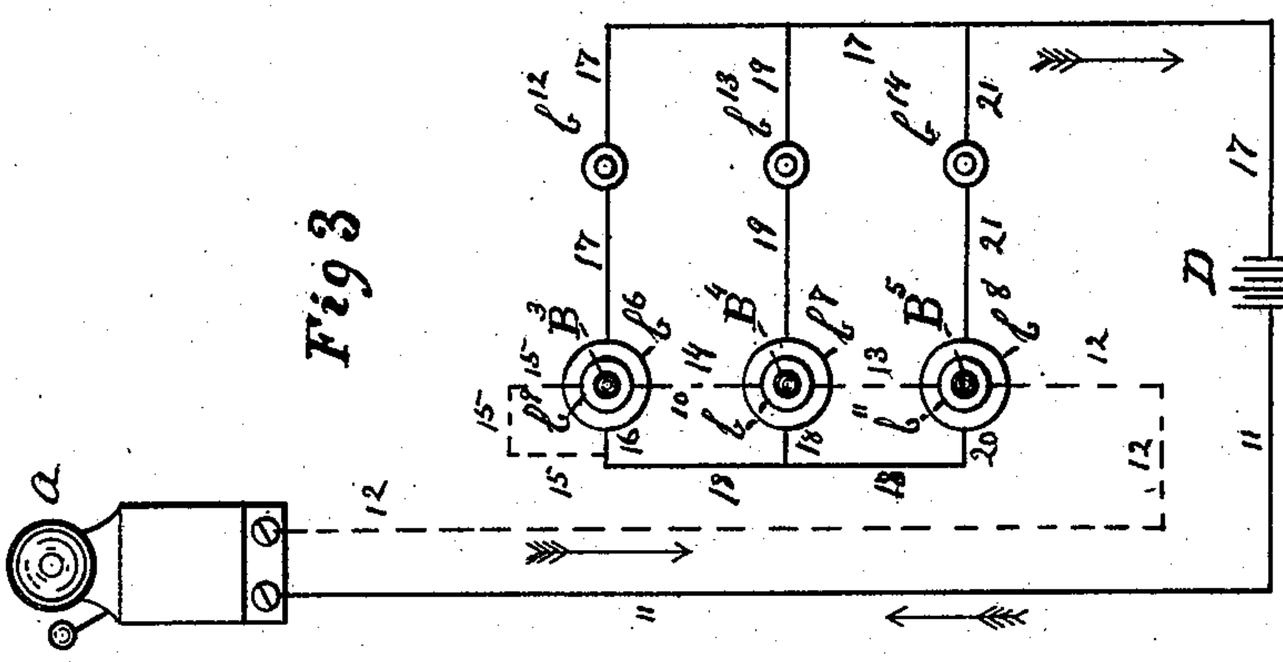

Fig 2

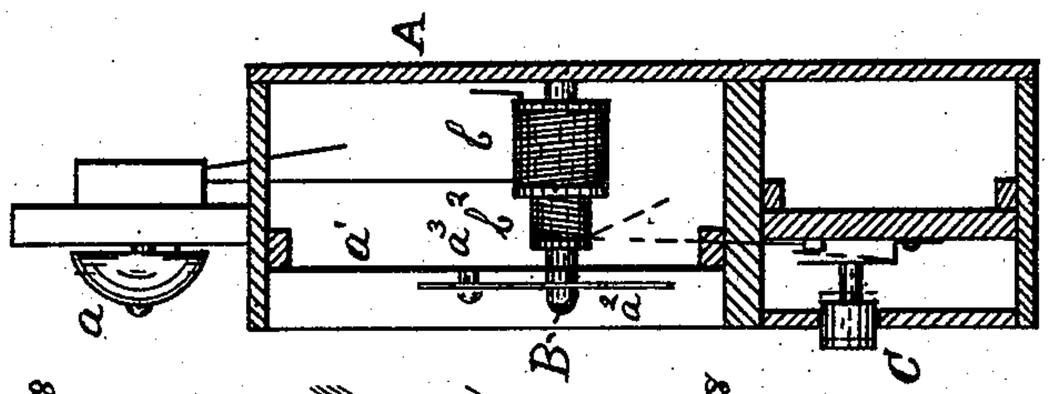

Fig 1

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FRANKLIN S. CARTER, OF BURLINGTON, NEW JERSEY, AND GEORGE P. STUMPF, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 486,243, dated November 15, 1892.

Application filed August 13, 1891. Serial No. 402,529. (No model.)

To all whom it may concern:

Be it known that we, FRANKLIN S. CARTER, residing at Burlington, in the county of Burlington and State of New Jersey, and GEORGE P. STUMPF, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Electrical Annunciators; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to the resetting of the indicating-pointers of annunciators, and especially to that class known as the "guest-call annunciators," which are arranged with push-buttons placed either in the case of the annunciator or adjacent thereto and connected to their respective bells in the various rooms. In resetting the pointers a general trip or resetting mechanism is employed by which when operated all pointers are reset at the same operation. As a result when a number of calls have been answered and it is necessary to reset the pointers whose calls have been attended to the record of the unanswered calls is lost.

The object of our invention is, first, to reset the indicating-pointer by means of the electrical current which operates the annunciator; second, to reset each pointer individually and at the time the return-call is made, which allows the pointers to indicate a call until such time as it is answered, avoiding the loss of the record of the unanswered calls; third, to use the return-call to call up a room without affecting the pointer. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of an annunciator, parts omitted and broken away and parts in section. Fig. 2 is a side elevation in section. Fig. 3 shows the arrangement of the connections and currents as used in a small annunciator without a return-call and where the current which operates the annunciator resets the pointers.

Similar letters and figures refer to similar parts throughout the several views.

A, Figs. 1 and 2, is the annunciator-case.

a, Figs. 1, 2, and 3, is the general signal-bell.

a' is the dial.

a^2, Fig. 1, is the pointer, which is pivoted to the dial at a^3.

B is the magnet that operates the pointer a^2.

B' B^2 are similar magnets with their pointers removed.

b b' are helices on the magnets B' B^2, which give to them a positive polarity.

b^2 b^3 are helices on the magnets B' B^2, which give to them a negative polarity.

b^4 b^5 are push-buttons supposed to be located in the different rooms for operating magnets B' B^2.

C is the return-call push-button.

C' C^2 are the switches of similar push-buttons, which are omitted.

C C' are the contact-plates of push-buttons C' C^2.

C^3 C^4 are the return call-bells supposed to be located in the different rooms, with push-buttons b^4 b^5, respectively.

D, Figs. 1 and 3, is a battery.

b^6 b^7 b^8 are helices which give the magnets B^3 B^4 B^5, Fig. 3, a positive polarity.

b^9 b^{10} b^{11} are the helices which give the same magnets a negative polarity.

b^{12} b^{13} b^{14} are push-buttons supposed to be located in different rooms to operate the magnets B^3 B^4 B^5.

The wires for the current to operate the pointers are in full lines. The wires for the current to operate the return-call and to reset the pointers are in broken lines. The arrows indicate the direction of the current.

When the push-button b^4, Fig. 1, is pressed down and the circuit made, the current from battery D flows in direction of the arrows through the wire 1, full line, to and ringing the general-alarm bell *a*, thence to the helix *b*, giving positive polarity to the magnet B', which attracts its pointer, which has been omitted from the drawings, to the position shown in broken lines at magnet B, then

through wire 2, full line, and push-button b^4 to battery D. The attendant answers by pressing down the switch C′ through its push-button, which has been omitted, making contact with the contact-plate C, as shown in broken lines in Fig. 2. When the current flows in the direction of the arrows from battery D through wire 1, full line, wire 3, broken line, to and ringing the bell C^3, from it through wire 4, broken lines, to switch C′, to helix b^2 on the magnet B′, giving it a negative polarity, causing it to repel its pointer to its normal position, (shown in full lines at magnet B,) the current returning to battery D through wire 5, broken line, and 2, full line. Thus the pointer is individually reset at the time the return-call is made. It is obvious that the attendant can ring up the room by the same operation without affecting the position of the pointer, as the negative condition of the magnet B′ cannot attract its pointer.

In operating push-button b^5 the current flows from the battery D through the wire 1, full line, to and ringing the general-alarm bell *a*, through wire 1, full line, to the helix *b′*, giving to the magnet B^2 a positive polarity, causing it to attract its pointer, thence through wires 6 and 2, full lines, and push-button b^5 to battery D. In answering this call the attendant presses the switch C^2 in contact with the contact-plate C′, when the current flows from the battery D through the wire 1, full line, wires 3 and 7, broken lines, to and ringing the bell C^4 through the wire 8, broken line, to the switch C^2, wire 9, to the helix b^3, giving the magnet B^2 a negative polarity, causing it to repel its pointer to its normal position, returning to the battery D, through wires 10 and 5, broken lines, and wire 2, full line. Any number of pointers desirable can be operated, each individually. The magnets b b^2 can be wound right and left, as shown in Fig. 2, or they can be wound both one way and connected right and left to give the magnet B positive and negative polarity when the current flows through them.

Fig. 3 illustrates the manner of arranging a small annunciator where no return-call is used and it is desirable to reset the pointer at each new call. The push-buttons b^{12} b^{13} b^{14} are supposed to be located in different rooms. When the button b^{12} is pressed down, the current flows in the direction of the arrows, through the wire 11, to and ringing the general-alarm bell *a*, then through wire 12, broken line, through helix b^{11}, giving magnet B^5 a negative polarity, causing it to repel its pointer to its normal position if it is still indicating, and from there through wire 13, broken line, to helix b^{10}, giving magnet B^4 a negative polarity, which causes it to repel, through wire 14 to magnet b^9, giving magnet B^3 a negative polarity, through wire 15, broken lines, and wire 16, full lines, to helix b^6, giving magnet B^3 a positive polarity, and, from the fact that it is larger and more powerful than the helix b^9, overcoming its negative action and making the magnet B^5 positive, causing it to attract its pointer, then through wire 17, full line, and push-button b^{12} to the battery D. By this arrangement the same current rings the alarm-bell, resets the pointer, and causes a pointer to indicate a call at one and the same time, dispensing with any resetting mechanism. The operation for push-button b^{13} is the same as that for b^{11}, except the current after leaving helix b^9 flows through wire 15, broken line, and 18, full line, to the helix b^7, giving a positive polarity to magnet B^4, returning to battery D, through wires 19 and 17, full lines, and the push-button b^{13}. When push-button b^{14} is used, the current, after leaving helix b^9, flows through wire 15 broken line, 18 and 20, full lines, to helix b^8, giving to magnet B^5 a positive polarity, then through wires 21 and 17, full lines, to battery D. This construction of a magnet with two helices—one to attract the other to repel—dispenses with a mechanical tripping or resetting device in our construction of annunciator.

What we claim as our invention is—

1. In an electric annunciator, a series of pointers, in combination with a series of differential magnets arranged to attract the said pointers, respectively, the necessary electrical generating and conducting devices constituting two circuits, with independent currents acting on the said magnets reversely, and a series of bells corresponding to the said magnets and located in one of the said circuits, the said electrical devices and magnets being arranged so that the current of the return-call will ring the bell belonging to the magnet from which the call has come and simultaneously reset the pointer operated by the said magnet, also reversing the polarity of the other magnets, substantially as set forth.

2. In an electric annunciator, a pointer which also acts as an armature, in combination with a differential magnet acting thereon and having two helices which develop different strengths of current when energized, two push-buttons arranged at different points for call and return-call, a generator of electricity, conductors making circuits, respectively, through each of the said helices, and the appropriate push-button and bells included in the said circuits, respectively, the said devices being so arranged that the current sent through the larger helix on pressing one push-button is of opposite polarity to that sent through the smaller helix on pressing the other, substantially as set forth.

3. In an electric annunciator, two or more differential magnets, each provided with two helices of different inductive capacities and so connected as to offer different polarity when energized, in combination with a generator of electricity and the necessary circuit-closers and conductors, one wire from each of the stronger helices leading to its re-

spective push-button and the other wire from said helix in each instance being run through its own small helix as well as from it through all the other small helices attached to the cores of all the other indicating-magnets, and thence through the general call-bell to the generator of electricity, substantially as set forth.

4. In an annunciator, the combination of magnet B, provided with a positive helix *b*, battery D, general-alarm bell *a*, connecting-wires 1 and 2, and push-button b^4, with negative helix b^2, electric bell C^3, switch C′, and connecting-wires 1, 3, 4, 5, and 2, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANKLIN S. CARTER.
GEORGE P. STUMPF.

Witnesses:
GEORGE W. SELTZER,
CHAS. S. CORFIELD.