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J. & W. PATTEN.

ANNUNCIATOR.

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FIG. 1.

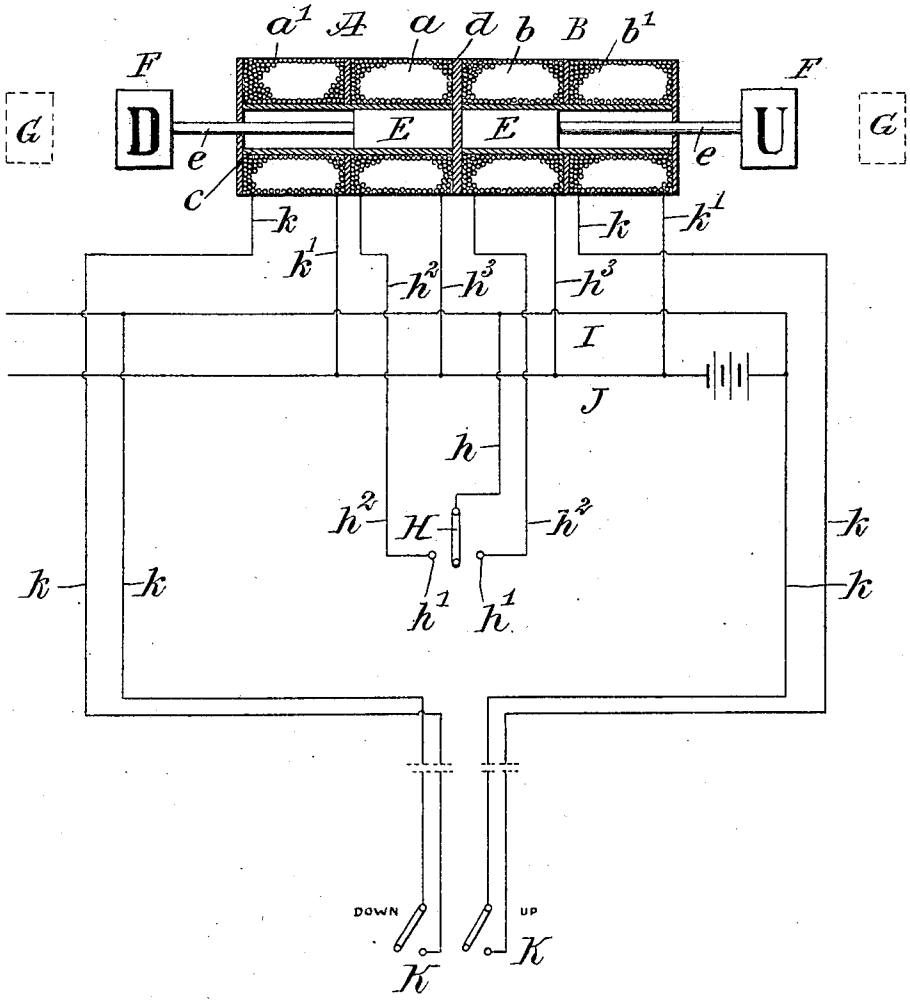
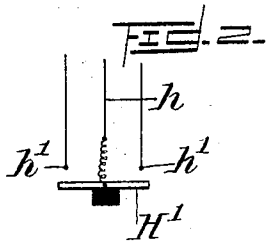


FIG. 2.



WITNESSES:

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ANNUNCIATOR.

No. 807,859. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed April 5, 1905. Serial No. 254,055.

To all whom it may concern:

Be it known that we, JAMES PATTEN and WILLIAM PATTEN, citizens of the United States, and residents of the city of New York, borough of Manhattan, in the county of New York and State of New York, have invented a new and Improved Annunciator, of which the following is a full, clear, and exact description.

The invention relates to an annunciator or indicating device the indicating parts of which are operated through the agency of solenoid-magnets. Preferably we provide a plurality of solenoid-magnets the cores of which are connected with the indicating devices, and we arrange circuit-making devices in connection with the magnet so as to cause the core and attached indicating device to take either one of three distinct positions.

Reference is to be had to the accompanying drawings, which illustrate as an example the preferred embodiment of the invention, in which drawings like characters of reference indicate like parts in both views, and in which—

Figure 1 is a diagram showing the preferred manner of arranging and operating the annunciator, and Fig. 2 is a detail showing a slight modification of the arrangement shown in Fig. 1.

Referring to Fig. 1, A and B indicate two solenoid-magnets which for convenience are constructed together, as shown, and each of which comprises two coils, (designated a and a' and b and b',) the coils being wound on non-magnetic tubes c, separated by non-magnetic walls d, all of which are known in the art. E indicates the magnetic core of the solenoids, the cores being movable freely in the tubes c and having stems e attached. These stems carry the indicating devices F of the annunciator. Said devices may be in the form of small plates or other members with a letter produced thereon, or they may be pointers reading on a card or any other means by which the change in the position of the cores may be indicated. If the plates F are used, as shown in the drawings, there will be employed in connection with them a shield or annunciator-face which covers the various parts of the annunciator and which is formed with openings, (indicated by the broken lines G in Fig. 1,) so that when the parts F move opposite the openings G the word, letter, or device produced thereon will be visible. When the parts assume the position shown in Fig. 1, the plates F will be invisible, since the solenoid-cores are shown in Fig. 1 at the limit of their inner movement. By deënergizing the coils a and energizing the coils a' the core of the magnet A will move leftward (referring to Fig. 1) and exhibit the plate F through the left-hand opening G. Upon reversing the energization of the coils the above-referred-to movement of the core will be reversed.

In Fig. 1 a diagram of the wiring is shown, which wiring will be used when the device is employed as an annunciator—for instance, in elevator practice—the annunciator proper being arranged in the car and the means for operating it in one direction being arranged in the building, while the means for operating the annunciator in the other direction are arranged in the car to permit the operator of the car to return the annunciator to zero after he has made the calls required by the previous position of the annunciator.

H indicates a switch which should be located in the car at any convenient point. This switch is in connection by a conductor h with a main feed-conductor I. The switch is adapted to engage either of two contacts h', and these are in connection by conductors h^2, respectively, with the coils a and b of the magnets A and B. Said coils a and b are in connection by conductors h^3 with a main return wire or conductor J. The coils a' and b' of the magnets A and B are connected by conductors k and k' with the feed and return mains I and J, through the medium, however, of switches K. These switches K are arranged at a suitable point in the building, and the circuits k and k' are completed by devices which allow the movement of the elevator-car without breaking the connection. In the operation of the device, therefore, as an elevator-annunciator, assuming that the letter "U" on one of the plates F means "up" and the letter "D" on the other plate F means "down," the switches K should be marked accordingly, as is indicated in Fig. 1. Now should the passenger desire to go up, by closing the switch K marked "Up" the circuit of the coil b' of the magnet B will be energized, and when energizing the coil the core E of the magnet B will be attracted, moving the plate F under the adjacent opening G, so as to expose to the elevator operator the signal "Up" If the passenger desires to go down, the switch K marked "Down" should be operated instead. After the elevator operator has made the required call the switch H should be thrown off to the right, (referring to Fig. 1,) closing the

circuit of the coil *b* and returning the core E to the non-indicating position. (Shown in Fig. 1.) The switches H and K may be of any desired form and are conventionally illustrated in Fig. 1. In practice they are usually of the push-button form or some other form which would cause them to spring back to open position after the positive pressure thereon is relaxed.

If it is desired to enable the operator to close both the coils *a* and *b* simultaneously, an arrangement such as shown in Fig. 2 may be employed, in which the switch H has the conductor *h* connected thereto, as before described, and is arranged to engage both of the contacts *h'* simultaneously, the current then flowing from the leader I along the branch *h* to the switch H and from this switch to both of the contacts *h'* and thence to both of the coils *a* and *b* and back to the return main J by the branch h^3.

For the sake of conciseness of description we have only illustrated an annunciator formed of two units. It is clear that the parts may be duplicated, so as to produce an annunciator with any desired number of units, thus making an annunciator suitable for general work—for instance, hotel-work—and in so duplicating the parts the switch H may be used for each pair of solenoid-magnets, such as *a* and *b*, or the modification of the device shown in Fig. 2 may be employed, by which the person waiting on the annunciator may simultaneously return all of the indicating devices to the zero position.

Each solenoid-core is arranged to take three positions. To this end circuits and switches or their equivalents may be arranged so as to energize, for example, the coil *a'* to the exclusion of the coil *a*, causing the core to move to the extreme left, (referring to Fig. 1,) or so as to energize both of the coils *a* and *a'*, causing the core to take a position intermediate these coils, or to energize the coil *a* independently of the coil *a'*, causing the core to take the extreme-right position. In this way three distinct indications can be secured from a single solenoid-magnet, so that in order to construct an annunciator, say, for example, of twelve numbers, but six double-coil solenoid-magnets may be employed. This, it will be observed, greatly reduces the mechanism, cost, and bulk of the annunciator. In order to effect this arrangement, it is only necessary properly to assemble the annunciator and to place the circuits of the coils *a* and *b* under the control of the person operating the annunciator by means of the switch H or its equivalent, the same as the coils *a'* and *b'* are placed under the control of that person by the switches K.

Various changes in the form, proportions, and minor details of our invention may be resorted to at will without departing from the spirit and scope thereof. Hence we consider ourselves entitled to all such variations as may lie within the terms of our claim.

Having thus described the preferred form of our invention, we claim as new and desire to secure by Letters Patent—

An annunciator, having a double solenoid-magnet, a core movable in the same, an indicating device in connection with the core, a means for closing the circuit of either coil of the magnet and means for simultaneously closing the circuits of both coils, whereby to cause the core to take either of three distinct positions under the positive action of the magnet.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES PATTEN.
WILLIAM PATTEN.

Witnesses:
JNO. M. RITTER,
F. W. HANAFORD.