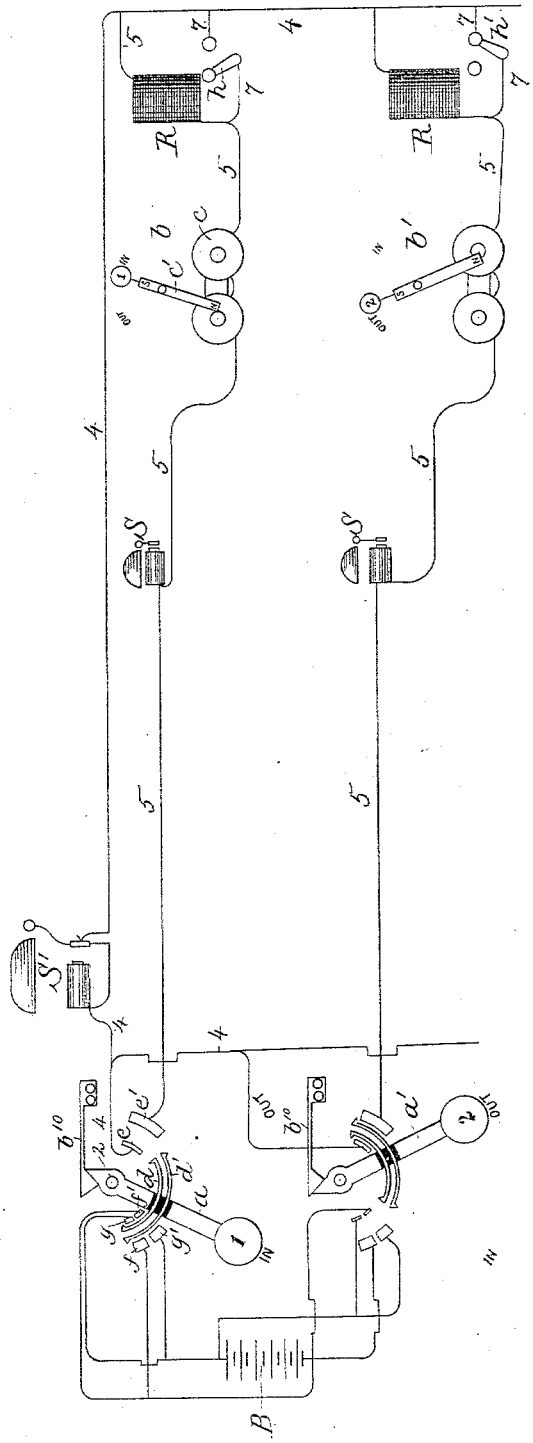
(No Model.)

M. MARTIN.

ANNUNCIATOR AND SIGNALING APPARATUS.

No. 381,709. Patented Apr. 24, 1888.



Witnesses,
Jas. J. Maloney.
L. R. Bates.

Inventor,
Morris Martin.
by Jos. P. Livermore.
Att'y.

UNITED STATES PATENT OFFICE.

MORRIS MARTIN, OF MALDEN, ASSIGNOR OF ONE-HALF TO CHAS. FOLLEN ADAMS, OF BOSTON, MASSACHUSETTS.

ANNUNCIATOR AND SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 381,709, dated April 24, 1888.

Application filed June 14, 1886. Serial No. 205,114. (No model.)

To all whom it may concern:

Be it known that I, MORRIS MARTIN, residing in Malden, Middlesex county, State of Massachusetts, have invented an Improvement in Annunciator and Signaling Apparatus, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

My invention relates to an annunciator especially intended for use in manufactories and large warehouses for indicating whether or not the different employés are in the building.

The apparatus comprises a series of keys or switches intended to be located at the entrance to the building and being assigned one to each employé or person whose presence or absence is to be made known, and the apparatus further comprises a corresponding series of indicators, which may be located at the office or point where the information as to the employés is desired. Each person on entering or leaving the premises will be required to move the key or switch assigned to him, and will thus produce a corresponding movement of the indicator at the office, which will thus show at any time whether or not the said person is about the premises. The indicating-instrument employed will preferably be a polarized annunciator-instrument, and the switch will operate to cause a current of one or the other polarity to pass through the magnet of the said indicating-instrument, according as the said switch is moved in one or the other direction. There will preferably be, in connection with the indicators, an audible signal to attract attention when any one of the indicators is operated. Means are also provided by which the attendants at the office may cause a signal to be operated at the switch-board or entrance whenever any desired one of the keys or switches is operated, and the person on perceiving such signal when he moves his key will understand that he is to proceed to the office. The apparatus thus affords means for summoning any desired person to the office the next time that he enters or leaves the premises, and also serves as a check to prevent one person from operating the switch of another, as he is likely at any time to receive a signal calling him to the office, and if the wrong person should respond to such signal the fact would be discovered that the switch had been improperly operated.

The drawing shows in diagram an annunciator and signaling apparatus embodying this invention.

The apparatus comprises a series of keys or switches, *a a'*, one assigned to each person whose presence is to be made known, two only of which keys are shown in this instance, being located at a convenient point to be operated by the persons entering and leaving the premises. The keys or switches are shown in this instance as consisting of arms pivoted at 2 and acted upon by springs b^{10}, having V-shaped projections engaging corresponding V-shaped projections on the switch-levers, and thus causing the latter to make the complete movement in either direction when moved by the operator beyond the middle point. The switches are to be moved in one direction—for instance, to the left—when the person enters the premises, and they then indicate that the person is in, and they are to be moved in the other direction when the person leaves the building, then indicating that he is out.

Each of the switches *a a'* controls the circuit of an indicating-instrument, *b* or *b'*, shown as consisting of a well-known form of annunciator-instrument comprising an electro-magnet, *c*, and polarized armature *c'* therefor, pivoted and caused to oscillate between the poles of said magnet *c* when the polarity of the latter is reversed, and remaining in either position until the said magnet *c* is affected by another change of polarity.

The switches *a a'* are provided with contact-pieces *d d'*, which in the movement of the switches from one to the other position make contact with contact-pieces *e e'* at one side of the switch, one of said contact-pieces, as *e*, of all the switches being connected with a main wire, 4, leading to the indicators, where it is provided with return branches 5, one passing through the magnet *c* of each indicating-instrument and being connected with the contact-piece *e'* of the switch corresponding to said indicating-instrument. The contact-pieces *d d'* in the movement of the switches also become electrically connected with contact-pieces *f g f' g'*, the pieces *f g*, that are connected with the parts *d*

d' in one half of the movement of the switches, being connected with the poles of the battery B, and the pieces $f'g'$, connected with the pieces $d\,d'$ in the other half of the movement of the switch, being connected with the opposite poles of said battery, so that in the movement of the switch the pieces $d\,d'$ connect the pieces $e\,e'$ first with the battery in one position and then in the opposite position, thus causing the current to traverse the circuit 4 5 first with one and then with the opposite polarity, the latter impulse reversing the polarity of magnet c and causing the armature c' thereof to move to its other position, where it will remain until the switch a is moved in the other direction. The contact or connecting pieces $d\,d'$ are moved wholly beyond the contact-pieces $e\,e'$ and $f\,f'\,g\,g'$, as shown, so that when the switches come to rest they leave the circuit open. There will preferably be either in the main line 4 or in each of the branches 5 thereof at the indicator-station an audible signal-instrument, S, which will be operated whenever the indicator is changed, thus calling attention to the indicator. There is also provided at the switch-board or station a signaling-instrument, S', either in the main line 4 or one in each of the branches 5, and there is included in each of the branches 5 at the indicator-station resistance R of sufficient amount to prevent the signal S' from operating, although it will permit the signals S and b to operate.

Shunts 7 for the resistance R, containing switches $h\,h'$, are provided, one corresponding to each indicator, and when it is desired to direct a person to proceed to the office or indicator-station the switch h or h' corresponding to said person's indicator is moved to the position to close the shunt 7, as shown at h', and then when the corresponding switch, as a', is moved the current passing through the circuit 4 7 5 will be of sufficient strength to operate the signal S', on hearing which the person will understand that he is to proceed to the office. If any switch, as a, is operated when the corresponding switch, as h, is open, the current will pass through the resistance R and will be so weakened thereby as not to operate the signal S'.

It is not essential that the keys should all be located at one place, as they may be distributed singly or in groups at any convenient point.

The invention is not limited to the particular use for the apparatus herein described, as it is obvious that the apparatus may be applicable for other purposes, and it may in some cases be desirable to have more than one indicating-instrument in circuit—as, for instance, if the same indication has to be given at two or more points.

I claim—

1. A series of keys or switches and corresponding series of indicating-instruments connected in circuit therewith, combined with a signaling-instrument located near the keys and resistance in circuit with each key and indicating-instrument, by which the said signaling-instrument near the keys may be rendered inoperative, and means for removing the resistance from each circuit independently of the others, whereby the said signaling-instrument is operated when the key is operated in the circuit from which the resistance is removed, substantially as described.

2. The combination, with a polarized indicating-instrument, of a key or switch movable to and fro between two different positions, and contact-pieces fastened to and movable with said switches, and co-operating stationary contact-pieces connected in circuit with a battery and with the said indicating-instrument and located with relation to the contact-pieces on the switch as set forth, the said contact-pieces on the switch touching the stationary contact-pieces in its movement from one to the other position, but passing beyond and being out of contact with the said stationary contact-pieces when the switch is in either extreme position, whereby the polarity of the current is reversed during the movement of the switch from one to the other position, substantially as described.

3. An annunciator and signaling apparatus comprising a series of keys or switches and a signaling-instrument adjacent thereto, and a series of indicating-instruments connected in circuit one with each of the said keys, and means connected with each circuit controlling the signaling-instrument near the keys, by which the said signaling-instrument may be made to operate or not, as desired, when the key in any desired circuit is moved, substantially as described.

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

MORRIS MARTIN.

Witnesses:

JOS. P. LIVERMORE,

JAS. J. MALONEY.