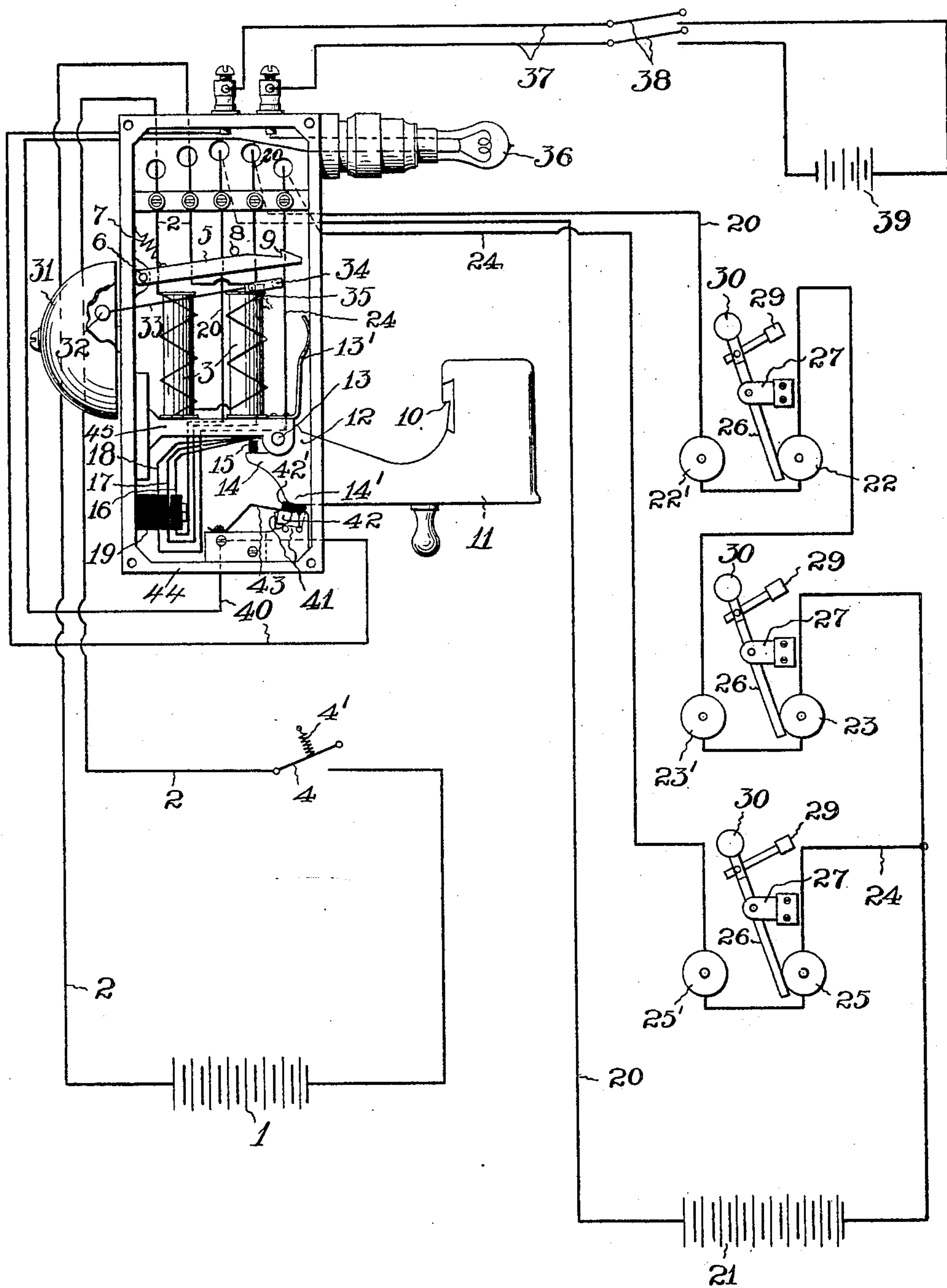


No. 795,318.

PATENTED JULY 25, 1905.

C. E. TRUMP.  
ANNUNCIATING MECHANISM.  
APPLICATION FILED JULY 28, 1904.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## ANNUNCIATING MECHANISM.

No. 795,318.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed July 28, 1904. Serial No. 218,476.

*To all whom it may concern:*

Be it known that I, CHARLES E. TRUMP, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Annunciating Mechanism, of which the following is a specification.

This invention is more particularly a multi-annunciating mechanism, primarily designed for use in hospitals to enable a patient or attendant to operate call-signals and a check-signal, which will remain set until the call is answered. In hospital service annoyance and neglect result from the signals in common use by which attendants are frequently not reached promptly or fail to respond because there is no check upon their movements. To avoid these objections and the noise incidental to obtaining service by ringing a bell until attention is obtained, the present system has been devised through which a patient or attendant by a slight movement taps a bell and sets a visual signal in the corridor, in the room or rooms of attendants, and in the superintendent's office, the visual signals remaining set until the call is answered.

In the accompanying drawing, the figure is a diagrammatic representation of the invention.

As illustrated, a source of electric energy 1 is connected with the conductors 2, having the electromagnets 3 therein, the circuit formed thereby being opened and closed by a switch 4. An armature 5, having a fulcrum 6, is located in the field of the electromagnets, being drawn down by the latter when the circuit is closed and elevated by the spring 7 to the stop 8 when the circuit is open. The free end of the armature is provided with a catch 9, adapted for engaging a catch 10 on the signal-arm 11 of the lever 12, the lever having the fulcrum 13 and being pressed outward by the spring 13'. The lever has a short arm 14, which acts, through the insulation 15 thereof, to press together the normally open spring-contacts 16, 17, and 18, held by the insulating-support 19. The contacts 16 and 17 are in circuit with the conductors 20, connected with a source of electric energy 21, and with the electromagnets 22 and 22', 23 and 23' in the rooms of several attendants, and the contact 18 is in circuit with the auxiliary conductor 24, electrically connected with the con-

ductor 20 and the electromagnets 25 and 25' in the office of the superintendent.

The electromagnets of the respective pairs 22 and 22', 23 and 23', 25 and 25' are oppositely wound and control signals comprising, respectively, a lever 26, having a fulcrum 27, adapted to be oscillated to the position shown by the excited magnets corresponding thereto and to be oscillated in the opposite direction by the weights 29, the movement of the several disks 30 announcing the call in the several rooms in which they are located.

The switch 4, closed as described, is automatically opened by a spring 4'; but the several visual signals remain set until the answering attendant permits the contacts 16, 17, and 18 to separate by elevating the arm 11, where it is held by the engagement of its catch 10 with the armature-catch 9, upon which the positions in which the disks 30 are shown is reversed and show that there has been a response to the call.

Simultaneously with the visual annunciation of the call an audible annunciation is effected by a bell 31, tapped by the hammer 32 on a lever 33, having a projecting pin 34 and a fulcrum 35. When the electromagnets 3, excited through closing the switch 4, draw down the armature 5 to release the lever 12 and effect the setting of the visual signals, the descending armature strikes the pin 34, tilts the lever 33, and taps the bell.

At night or when the signal-arm 11 cannot be seen a visual signal in the corridor is produced by means of the lamp 36, connected by the conductors 37 and the switch 38 with the source of electric energy 39 and by the conductors 40 with the contact-pieces 41 of a switch controlled by a conducting-wedge 42, which is supported by a spring 43. The wedge is forced between the contacts by the impact of the heel 14' of the lever 12 upon the insulation 42' of the wedge when the lever is down and lifted out of contact by the spring when the lever is up.

The signal-lamp 36 is thrown out of operative relation by opening the switch 38.

It will now be understood that when the switch 4 is pressed by the patient its circuit will be closed and current will pass from the source of energy 1 through the conductors 2 and electromagnets 3. The armature 5 will now be drawn down against the action of its



spring 7 by the thus excited electromagnets and will be elevated by its spring when the electromagnets become inactive upon the opening of the circuit, the opening of the circuit being effected by the spring 4' when the switch is released. As the signal-arm 11 is released and thrown out by the spring 13', when the armature 5 is drawn down it will be held down by gravity until it is manually elevated and reengaged with the armature 5 by the attendant. So long as the signal-arm 11 remains down the short arm 14 maintains closed the spring-contacts 16, 17, and 18, together with the circuits connected therewith, and current flows from the source of energy 21 through the several pairs of magnets 22 and 22', 23 and 23', and 24 and 24'. As the magnets of the respective pairs are oppositely wound, their cores will be oppositely polarized, so that when excited the electromagnets 22, 23, and 25 attract and the electromagnets 22', 23', and 25' repel the corresponding armature-levers 26 to set the disks 30, said armature-levers being polarized so as to be operated by said electromagnets. The disks, including that of the check-signal in the superintendent's room, remain set until the attendant answering the call lifts the arm 11, upon which the electromagnets become inactive and release the levers 26, when the weights 29 tilt the levers and reset the disks. In order that the operation of the check-signal in the room of the superintendent may not be affected or rendered inoperative by attendants tampering with their signals or line, the check-signal may be placed in a line, as 24, different from the line passing through the attendant's rooms. In addition to the annunciator to be placed in the room of an overseer a plurality of annunciators is shown, as it is sometimes desirable to signal a plurality of attendants, as well as to notify the overseer, by operating a single switch under the control of the patient.

A casing 44 contains the shelf or arm 45, the electromagnets 3, and the fulcrum 13 of the lever 12, carried by the arm, the armature 5 and the fulcrum 6 therefor, the contacts 16, 17, and 18, and the insulating-support 19 therefor, and the switch members 41, 42, and 43, while to the exterior casing the lamp 36 is connected.

Having described my invention, I claim—

1. An annunciating mechanism comprising a visual signal, an electric circuit having electromagnetic mechanism and normally open spring-contacts therein, said signal being thrown and held by said electromagnetic mechanism upon closing said contacts and automatically restored to its initial position upon the opening of said contacts, a second electric circuit having an electromagnetic mechanism and a switch therein, and a signal held in its

initial position by said last-named electromagnetic mechanism and automatically thrown to close said contacts upon the closing of said switch.

2. An annunciating mechanism comprising visual check-signals, one or more electric circuits having electromagnets and normally open spring-contacts therein, said signals having oscillating armatures respectively thrown and held by said electromagnets to simultaneously set said signals, an additional visual signal having means for engaging and closing said contacts, an electric circuit having an electromagnet and a normally open switch therein, and an oscillating armature normally engaging said additional signal and withdrawn therefrom by said last-named electromagnet by closing said switch.

3. An annunciating mechanism comprising a fulcrumed signal, a fulcrumed armature adapted for engaging and holding said signal, an electromagnet for attracting said armature and releasing said signal, a bell operated by said armature, a circuit closed by said signal upon its release by said armature, an electromagnetic mechanism in said circuit, and a signal operated by said electromagnetic mechanism, substantially as specified.

4. An annunciating mechanism comprising one or more electric circuits having electromagnets and normally open contacts therein, a plurality of visual check-signals simultaneously set by said electromagnets upon closing said contacts and automatically restored to their initial position upon the opening of said contacts, a lever having a long arm which acts as a signal and a short arm which closes said contacts, an electric circuit having an electromagnet and an automatically-opened switch therein, and an armature for said last-named electromagnet which normally holds said lever out of operation and is withdrawn therefrom by its electromagnet upon closing said switch.

5. An annunciating mechanism comprising a circuit, an electromagnet in said circuit, an armature operated by said electromagnet, a bell sounded by said armature, a signal engaged by said armature, a circuit having contacts and electromagnetic mechanism therein operated by said signal, a signal operated by said electromagnetic mechanism, a circuit having a lamp therein, and contacts in said last-named circuit closed by said first-named signal, substantially as specified.

In testimony whereof I have hereunto set my hand, this 27th day of July, 1904, in the presence of the subscribing witnesses.

CHAS. E. TRUMP.

Witnesses:

FORREST N. MAGEE,  
R. J. SNYDER.