No. 790,548. PATENTED MAY 23, 1905.

G. F. ATWOOD.

ANNUNCIATOR.

APPLICATION FILED JUNE 18, 1904.

Fig. 1.

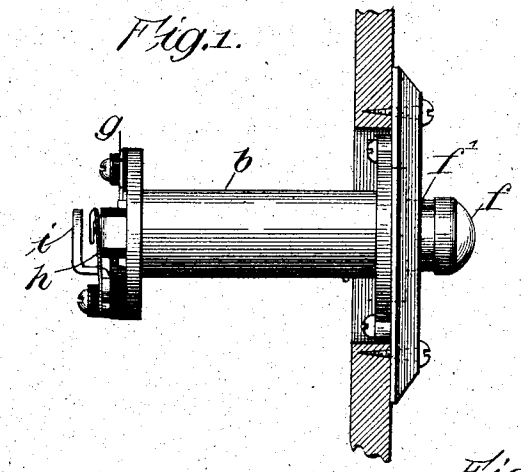


Fig. 2.

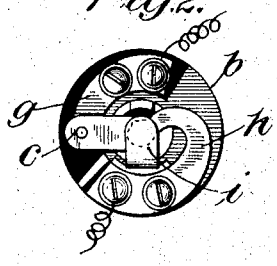


Fig. 3.

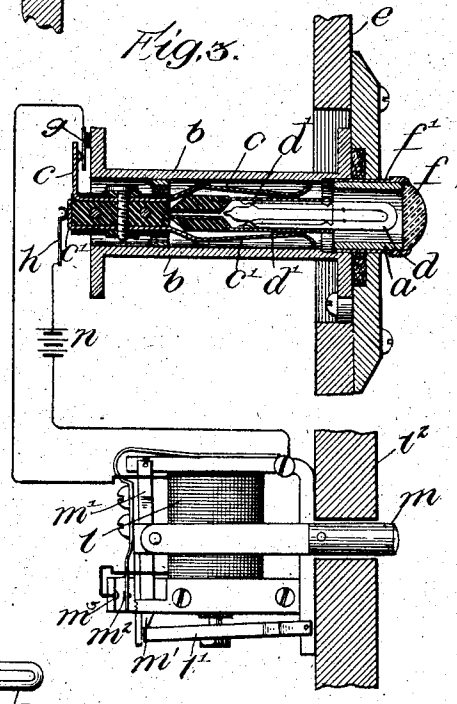


Fig. 4.

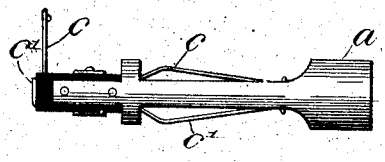
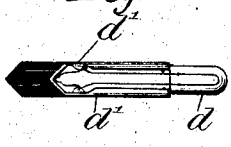


Fig. 5.



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No. 790,548. Patented May 23, 1905.

UNITED STATES PATENT OFFICE.

GEORGE F. ATWOOD, OF NEW YORK, N. Y., ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 790,548, dated May 23, 1905.

Application filed June 18, 1904. Serial No. 213,076.

To all whom it may concern:

Be it known that I, GEORGE F. ATWOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Annunciators, of which the following is a full, clear, concise, and exact description.

My invention relates to an annunciator, and has for its object to provide a device of neat appearance, which will be simple, compact, and highly efficient in its operation.

My aim has been to devise an annunciator arranged to display a signal and provided with mechanism forming a part of the annunciator itself adapted when the signal is displayed to be operated in such a manner as to efface the same.

In accordance with my invention a lens or bull's-eye provided with a lamp behind it to constitute an illuminated signal is arranged to serve also as a manual push-button for the actuation of contacts which control the electrical circuit of the lamp.

I will describe my invention particularly by reference to the accompanying drawings, in which—

Figure 1 is a view in elevation of my improved annunciator, a portion of its containing-case being shown in section. Fig. 2 is an end view of the annunciator. Fig. 3 is a diagrammatic view showing the annunciator in sectional plan, together with a type of locking-switch which I prefer to employ. Fig. 4 is a detail view of the holder, and Fig. 5 is a detail view of the electric lamp adapted to be supported by said holder.

The same letters of reference are used to designate the same parts wherever they are shown.

The holder a is mounted to slide longitudinally within an annular frame or shell b and is provided with two contact-strips c c', secured near the rear to an insulating-piece carried by the holder. An incandescent lamp d is mounted in the holder, the terminals d' d' thereof being grasped by the said contact-strips. The frame of the annunciator may be secured within a suitable receptacle or containing-case e, so that the front end of the lamp-holder projects through an opening therein. A glass lens or bull's-eye f covers the opening in the front end of the holder and forms the end of a metal cap or cylinder f', which may be slipped over the end of the holder, said lens or bull's-eye being arranged to serve as a manual push-button, which when actuated will move the holder longitudinally within the frame b. The rear end of contact-strip c is formed angularly and normally rests against a front contact g. A spring h bears against the rear end of the spring c', which is also formed angularly, and serves to maintain the lamp-holder at the forward limit of its movement, the spring h also constituting part of the circuit of the lamp. The inward or rearward movement of the lamp-holder a is limited by a stop i, secured to the frame of the device. When the glass cap or push-button f is pushed, therefore, the lamp-holder is moved in longitudinally until it engages the stop i, such movement breaking the connection of contacts c g.

Referring now to Fig. 3, an electromagnetic locking-switch is shown, the locking action whereof is controlled by magnet l and the armature l' thereof. A manually-operated plunger m is associated with the switch, the end of said plunger projecting through an opening in a suitable casing l^2, said plunger being adapted when actuated to move an arm m', and thereby close contacts m^2 m^3. The armature l' of said magnet when attracted serves to engage the end of the arm m' and lock said arm in its outward position. The contact-spring m^2, carried by the arm m', is connected with one pole of the battery n, the other pole of the battery being connected with the contact-spring h of the annunciator, while the winding of the magnet l is included in a conductor extending from the contact m^3 of the locking-switch to the contact g of the annunciator.

The type of locking-switch which I have illustrated constitutes no part of the present invention, but forms the subject-matter of an application of Henry M. Crane, Serial No. 207,026, filed May 9, 1904.

The operation of the system is as follows: The depression of the plunger m of the switch moves the arm m' to close contacts m^2 m^3, whereupon a circuit for battery n is completed which includes the lamp d and the winding of magnet l of the locking-switch. The lamp d is thus lighted and the magnet l energized. The armature l' of said magnet in its attracted movement serves to maintain the contacts m^2 m^3 closed independent of the plunger m. In order to withdraw or efface the signal displayed by lamp d, the glass cap or push-button f is pushed in. The lamp-holder is thereby moved inward, forcing the end of contact-strip c out of engagement with its contact g, whereupon the circuit of battery n is interrupted and the lamp d extinguished. The magnet l also becomes deënergized and allows its armature l' to fall back, permitting the contact-arm m' to move back, and thereby break the engagement of contacts m^2 m^3. When the pressure upon the glass lens or push-button f is withdrawn, the spring h operates to return the lamp-holder to its extreme forward position, whereupon contacts c g are again closed. The circuit of lamp d, however, is open at the contacts m^2 m^3 of the switch and the lamp d remains extinguished, subject to the operation of the plunger m.

It will be apparent that the device of my invention may be utilized in many ways. For example, hotels may be equipped with systems wherein annunciators of my construction are placed at a central point, with suitable locking-switches for operating the same located in the different rooms.

It is apparent that many modifications may be made from the precise structure herein described and shown without departing from the spirit of my invention.

I claim—

1. In an annunciator the combination with a frame, of a movable holder having a glass lens mounted at the front end thereof, said lens being adapted to serve as a manual key, an incandescent lamp mounted behind said lens in position to illuminate the same, a circuit for said lamp including a source of current, and switch-contacts controlling said circuit actuated by the movement of said holder.

2. In an annunciator, the combination with a frame, of a holder movably mounted therein, said holder having two contact-strips adapted to grasp the terminals of a lamp mounted therein, a glass lens supported in front of said lamp, adapted to serve as a manual key, and switch-contacts controlling the circuit of said lamp, actuated in the movement of said holder.

3. In an annunciator the combination with a supporting-frame, of a holder mounted to slide longitudinally in said frame, said holder having two contact-strips adapted to grasp the terminals of a lamp inserted therein, a spring yieldingly pressing said holder to the forward limit of its movement, and a switch-contact adapted to control the circuit of the lamp, said switch-contact being actuated in the movement of said lamp-holder when the same is pushed in against the tension of said spring.

4. In an annunciator, the combination with a supporting-frame, of a holder movably mounted in said frame, said holder having contact-strips adapted to make electrical connection with the terminals of an inserted lamp, a cap for the lamp-holder having a bull's-eye in front of the lamp, and a switch adapted to control the circuit of the lamp, actuated in the movement of said lamp-holder, the cap of said holder being adapted to serve as a manual key whereby said switch may be actuated.

5. In an annunciator the combination with a supporting-frame, of a holder movably mounted in said frame, a lamp, said holder having contact-strips adapted to make electrical connection with the terminals of said lamp when inserted in the holder, a cap for the holder having a bull's-eye in front of the lamp, and a switch adapted to control the circuit of the lamp, actuated in the movement of said holder, the cap of said holder being adapted to serve as a manual key whereby said switch may be actuated, an electric circuit for said lamp, including a source of current, and an electromagnetic self-locking switch for closing the circuit, said electromagnetic switch being adapted to hold the circuit closed until the lamp-holder is actuated.

6. In an annunciator the combination with a frame, of a holder movable therein, contacts controlled by said holder, an electric lamp secured within said holder, a spring yieldingly maintaining said holder at the forward limit of its movement, a locking-circuit for said lamp including the aforesaid contacts, a switch adapted to complete said circuit, and a bull's-eye cap carried by the movable holder in front of said lamp and adapted to be pushed in to move said holder and open the contacts thereof; whereby the circuit of said lamp may be interrupted.

7. The combination with a push-button having a glass signal-lens in the end thereof, a lamp mounted behind said lens to illuminate the same, and contacts actuated by the movement of said push-button controlling the circuit of said lamp.

8. In an annunciator, the combination with a frame, of a holder mounted to slide longitudinally therein, a contact-strip carried by said holder having its rear end bent at an angle and resting against the end of the holder, a contact-spring engaging said angular portion of the contact-strip and normally maintaining the holder at the forward limit of its movement, a second contact-strip carried by said holder also having its rear end bent to project at an angle to the holder and normally resting against a contact-anvil, an incandescent lamp, terminals therefor adapted to be en-

gaged by said contact-strips, and a bull's-eye cap carried by said holder in front of the lamp and adapted to be pushed in to move the holder longitudinally and break the normal connection at said contact-anvil.

9. The combination with a push-button having a signal device mounted therein, of a circuit for said signal device, and contacts actuated by the movement of said push-button adapted to control the circuit of said signal device.

10. The combination with a push-button having an opening in its face, of a signal device mounted within said button and arranged to display its signal at said opening, switch-contacts associated with said button and adapted to be actuated when the same is pressed, and a circuit for said signal device controlled in said switch-contacts.

In witness whereof I have hereunto subscribed my name this 29th day of April, A. D. 1904.

GEORGE F. ATWOOD.

Witnesses:
J. C. ENDERS,
ARTHUR LOCKWOOD.