No. 850,311. PATENTED APR. 16, 1907.

J. L. McQUARRIE.

ANNUNCIATOR.

APPLICATION FILED OCT. 2, 1905

Fig. 1

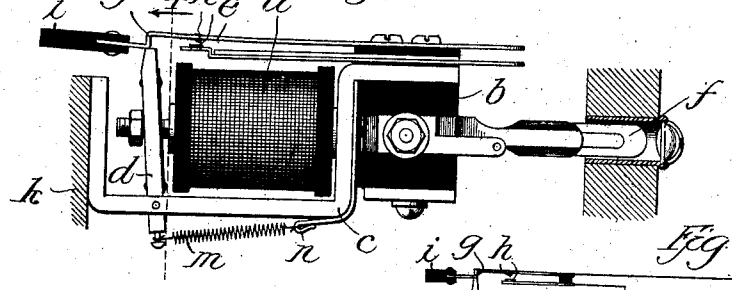


Fig. 6.

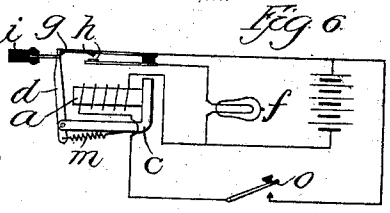


Fig. 2.

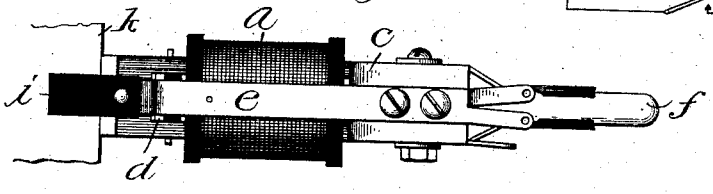


Fig. 3.

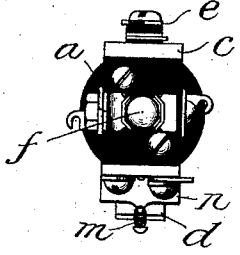


Fig. 4

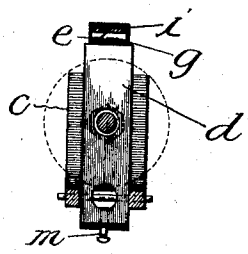
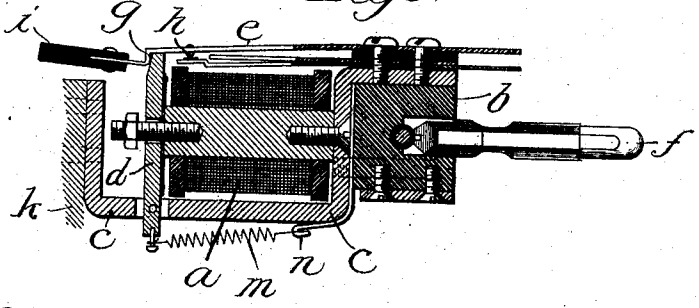


Fig. 5.



Witnesses:
Geo. E. Larson
G. V. Folk.

Inventor:
James L. McQuarrie,
By Barton & Sumner
Attys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES L. McQUARRIE, OF NEW YORK, N. Y., ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ANNUNCIATOR.

No. 850,311. Specification of Letters Patent. Patented April 16, 1907.

Application filed October 2, 1905. Serial No. 281,102.

To all whom it may concern.

Be it known that I, JAMES L. McQUARRIE, 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.

On shipboard and in elevators electric annunciators are liable to get out of order or work imperfectly on account of the jar and motion to which they are necessarily subjected. These troubles are more pronounced where the apparatus is complex, as in the case of annunciators in which electric lamps controlled by relays are employed as the visual signals.

My invention relates to this class of annunciators; and its special object is to make their operation certain and at the same time bring all the parts within moderate space and in a self-contained structure.

With these objects in view the relay, which is adapted to close the lamp-circuit, is adapted, after it has operated, to remain locked to surely maintain the circuit through the lamp until manually released, this release being effected by lifting the contact-closing spring to permit the armature to retract. When retracted, the armature holds the spring out of contact.

Another feature of my invention consists in the manner of supporting the relay and the lamp-socket upon a single iron frame, which iron constitutes the return-pole piece of the relay and is extended at the rear to furnish a convenient means for securing the same to the mounting-strip, which strip may be common to a number of annunciators.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a single annunciator consisting of a relay and lamp-socket, with the lamp in place, with the jewel over the same, embodying my invention. Fig. 2 is a plan view of the same, the jewel not being shown. Fig. 3 is a front elevation thereof. Fig. 4 is a view as seen from line 4 of Fig. 1. Fig. 5 is a vertical longitudinal central section thereof, the armature being in its attracted and locked position. Fig. 6 is a diagram illustrative of the circuit.

Like parts are indicated by similar letters of reference throughout the different figures.

The magnet *a* and the block *b* of the lamp-socket are mounted on the iron frame or bracket *c*, as shown. This iron support serves as the return-pole piece. The armature *d* is mounted thereon, and when attracted the contact-spring *e* closes to direct current through the lamp *f* to light the same and disclose the signal. When the spring *e* closes, the shoulder *g* thereof is brought back of the upper edge of the armature. The spring is thus locked in position and all danger of the contacts *h* being opened by any jarring of the apparatus is avoided.

I provide, preferably, on the free end of the spring *e*, fiber or other insulation tip *i* to prevent electrical contact with the spring when it is lifted by the finger. The iron frame *c* is extended at the rear to provide a secure means of mounting the annunciator upon the strip *k*, which may be of iron and common to a bank of annunciators.

The iron frame *c* of the annunciator may be described as U-shaped and provided with a horizontal extension, on which extension the springs carrying the contacts *h* are mounted. This extension comes over the block *b*, which is secured to the frame by screws, (shown in Fig. 3,) which pass through said block into the frame. The retractile spring *m* is secured at one end of the lower part of the armature and at the other end to the clip *n*, which is conveniently inserted between the block *b* and the frame.

On closing the push-key *o* (see Fig. 6) current is directed through the magnet *a* and its armature attracted to close contacts *h*. Current is thus directed through the lamp *f* to illuminate the same. The contacts *h* thus closed are held closed by the engagement between the shoulder or catch *g* and the armature. In order to withdraw the signal, the spring *e* is lifted manually or otherwise released from its engagement with the armature, thereby opening the contacts *h* and withdrawing current from the lamp.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination in an annunciator, of the U-shaped frame having an extension, contact-springs mounted on said extension, a

lamp-socket mounted on said frame below the extension, an electromagnet with its armature, both supported on said frame between the parallel sides or legs thereof, the side of said frames extending beyond the armature serving as the support for the annunciator, said frame, from the heel of the magnet to the armature, serving as the return-pole of the magnet, substantially as and for the purpose specified.

2. An electric lamp and its socket, and an electromagnet and its armature, all supported on a common iron frame, in combination with contact-springs mounted on an extension of the said frame and extending parallel above the electromagnet, one of said springs being adapted to be moved to close the contacts when the magnet is excited and thereupon to lock the armature in position until released, substantially as and for the purpose specified.

3. In an electric annunciator, the combination with an electromagnet and its armature, of an electric circuit including a signal device, a pair of springs controlling said circuit, one of said springs being adapted to be moved to close the circuit when the magnet is excited, and thereupon to lock the armature in closed position until manually released, substantially as described.

4. In an electric annunciator, the combination with an electromagnet and its armature, of an electric circuit including a signal device, a spring for controlling said circuit, a shoulder on said spring adapted to be engaged by said armature when in its unattracted position to hold open said circuit and upon the attraction of the armature to engage the same and lock it in closed position until manually released, substantially as described.

5. In an electric annunciator, the combination with a U-shaped bracket, of an electromagnet and its armature and a signal mounted on said bracket, a pair of contact-springs secured to an extension of said bracket and insulated therefrom, a shoulder on one of said springs adapted when the magnet is energized to lock the armature in its attracted position with said contact-springs held in closed position until released, substantially as described.

6. The combination with an electromagnet and its armature, of a circuit including a signal, a spring switching member normally held open by the armature in its unattracted position, and means carried by said spring member for locking said armature in its attracted position, thereby maintaining the circuit closed until the switching member is manually operated to open the same.

In witness whereof I hereunto subscribe my name this 13th day of July, A. D. 1905.

JAMES L. McQUARRIE.

Witnesses:
GEORGE P. BARTON,
ALFRED H. MOORE.