No. 755,890. PATENTED MAR. 29, 1904.

T. C. LANEY & C. S. LONGNECKER.

ELECTRIC SIGNALING DEVICE.

APPLICATION FILED NOV. 24, 1902.

NO MODEL.

Fig. 3

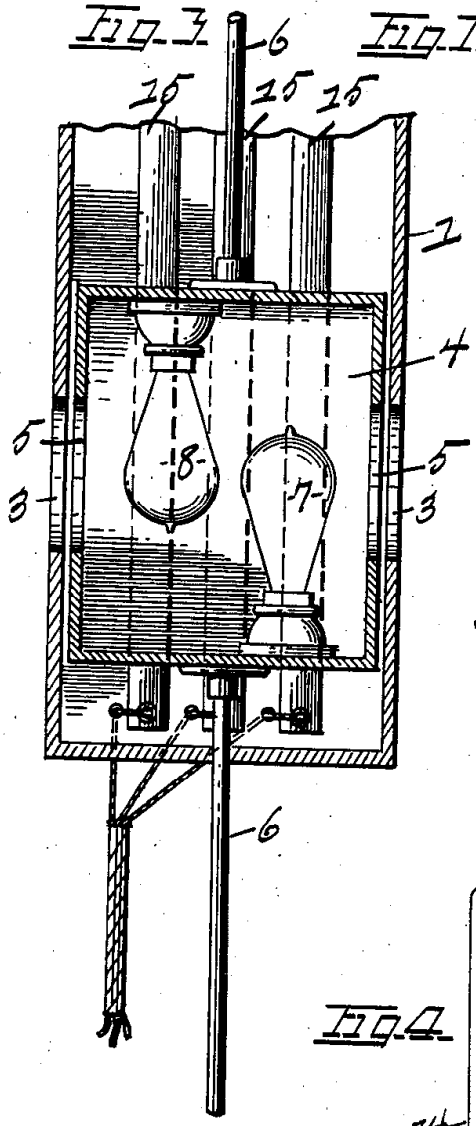


Fig. 1

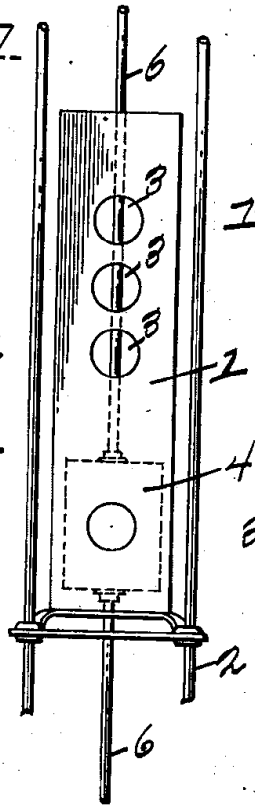


Fig. 2

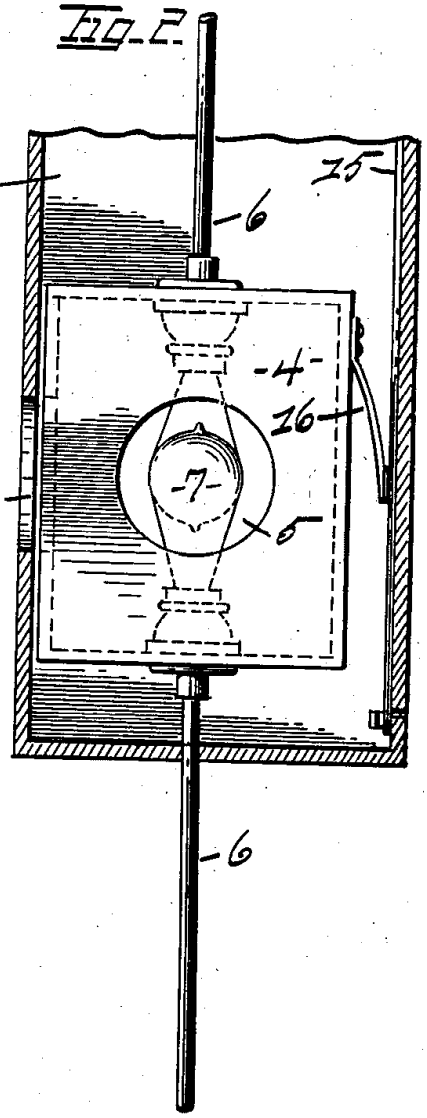
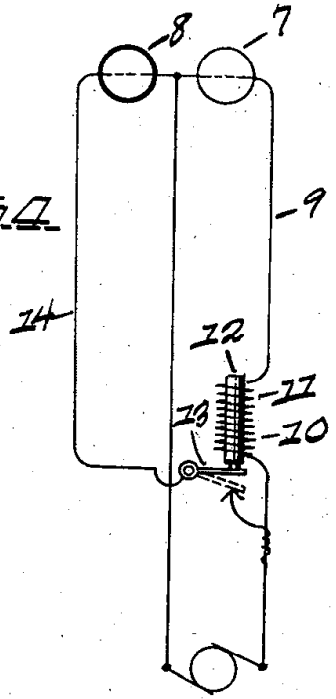


Fig. 4



WITNESSES.

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No. 755,890. Patented March 29, 1904.

UNITED STATES PATENT OFFICE.

THOMAS C. LANEY, OF TOLEDO, AND CHARLES S. LONGNECKER, OF DELTA, OHIO.

ELECTRIC SIGNALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 755,890, dated March 29, 1904.

Application filed November 24, 1902. Serial No. 132,543. (No model.)

To all whom it may concern:

Be it known that we, THOMAS C. LANEY, residing at Toledo, Lucas county, and CHARLES S. LONGNECKER, residing at Delta, Fulton county, State of Ohio, citizens of the United States, have invented certain new and useful Improvements in Electric Signaling Devices; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has reference to an electric signaling device in which incandescent lamps are employed as a lighting medium; and it has for its object to provide means for the permanent and continuous illumination of a signal the possibility of extinguishing which by the destruction of the lamp filament will be practically eliminated.

The invention is especially adapted for use in railway semaphore-signals, switch-lights, ship-signals, in each of which applications grave consequences are liable to result from the accidental temporary extinction of the signal-light.

To provide a simple, efficient, and inexpensive signal which shall remain permanently illuminated, our invention is constructed.

As illustrated in the drawings, the invention is shown applied as a railway semaphore-signal; but its adaptation for signaling purposes in general will be readily understood.

In the drawings, Figure 1 is an elevation of a semaphore-signal box adapted for the application of our invention. Fig. 2 is an elevation of the lamp-containing case arranged within the signal-box, the latter being shown in section. Fig. 3 is a section through the signal-box and the lamp-containing case, the section being taken transverse to that of Fig. 2. Fig. 4 is a diagram of the circuits leading to the lamps.

1 is a signal-box permanently and immovably mounted upon a semaphore-signal tower 2. The box 1 is provided with the usual signal-openings 3 in the front and sides thereof, each opening being provided with a bull's-eye of suitable color to produce the proper signal. Arranged within the signal-box, so as to move vertically therein, is a case 4, having front and side openings 5, adapted to register with the openings 3 in the signal-box.

6 represents rods secured to the top and bottom of the case 4, adapted to guide the same in its vertical movement, perforations being provided in the top and bottom of the signal-box through which the rods pass. These rods are operatively connected to the semaphore-arms by chains, cables, or other suitable means in such a manner that when the position of the semaphore-arms is altered the case 4 will also alter its position within the signal-box.

Arranged within the case 4 in line with the openings 5 are a pair of incandescent lamps 7 and 8, respectively. These lamps are arranged as indicated, so that either one when "on" will appear through the openings in the side of the case, the same also appearing through the openings in the side of the signal-box when such openings register with the openings in the case.

9 is a main circuit containing the lamp 7 and a relay 10, said relay comprising a coil 11, a soft-iron core 12, surrounded by the coil, and a pivoted armature 13, actuated by the soft-iron core.

14 is a branch circuit containing the lamp 8, the current through which is controlled by the action of the armature 13 of the relay.

The connections leading to the signal-box are made to parallel contact-strips 15, and 16 represents spring-contacts secured to the case 4, so as to contact with the strips 15, the lamps being suitably connected to said contacts.

The operation is as follows: When the current is switched on, the same will pass momentarily through both the main circuit 9 and the branch circuit 14. Since the current in the main circuit passes through the coil 11, the armature 13 will be instantly attracted by the soft-iron core within said coil and as a consequence open the branch circuit, the current being then shut off from the lamp 8. We will now assume that the filament in the lamp 7 after being in use for an extended period has been destroyed, said lamp being conse-

quently extinguished. The passage of the current will therefore be interrupted in the main circuit, and the coil 11 being no longer active the armature will drop, taking the position indicated in dotted lines, Fig. 4. The armature when in this position will close the branch circuit through the lamp 8. The relay may be placed at any convenient point, preferably within the station, so as to indicate when the main circuit has been interrupted. When the relay indicates an interruption in the main circuit, the lamp 7 may be replaced at leisure.

From the foregoing it is apparent that we provide means whereby the permanent display of a signal is insured and that the danger to life and property accompanying the temporary interruption of a signal is practically eliminated.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

In a semaphore-signal, a signal-box mounted upon a standard and provided with openings, a lamp-containing case movable vertically within the box and provided with openings adapted to register with the openings therein, a pair of signal-lamps arranged in the case, elongated contact-strips secured within the signal-box, contact-fingers carried by the lamp-case adapted to press upon the contact-strips and lead current to the lamps within the case, a normally closed main circuit connected with the contact-strips leading current through one of the lamps and a relay, and a branch circuit connecting with the contact-strips and leading current through the other lamp, said branch circuit being closed by the action of the relay when the main circuit is interrupted, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

THOMAS C. LANEY.
CHARLES S. LONGNECKER.

Witnesses:
CARL H. KELLER,
CHAS. C. DEFENBAUGH.