

UNITED STATES PATENT OFFICE.

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ELECTRIC GAS LIGHTING COMPANY, OF PORTLAND, MAINE.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 376,171, dated January 10, 1888.

Application filed February 23, 1887. Serial No. 229,103. (No model.)

To all whom it may concern:

Be it known that I, JACOB P. TIRRELL, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Annunciators, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The object of my invention is to produce an annunciator-drop or indicating-instrument of simple construction that is certain and positive in its action; and the invention consists, mainly, in details of construction and arrangement of the drop or indicating device and armature of the electro-magnet that controls it.

The controlling electro-magnet is shown as supported in a horizontal position and having an armature preferably struck up from sheet-iron and provided with a shank or stem pivoted below and in the rear of the main portion of the armature, which is also provided with a catch or shoulder, which, when said armature is retracted, supports the drop or indicator proper. The said drop is shown as consisting of a single sheet of thin sheet metal, the main portion of which stands at the front of the magnet and its armature, and is provided with rearwardly-projecting supporting-arms pivoted near the rear end of the armature, so that the drop falls by gravity with an oscillating movement. The drop in falling is arrested by a stop projection connected with the armature in such manner that the weight of the drop acts to retract the armature, and thus detach it from the magnet in case it should stick by residual magnetism.

Figure 1 is a front view of an annunciator containing indicating-instruments embodying this invention, showing two of said instruments in front elevation in different positions; Fig. 2, a side elevation thereof, also showing two instruments in different positions; Fig. 3, a front elevation of the magnet, armature, and frame of one of the drop-instruments on a larger scale, the drop itself being removed; Fig. 4, a plan view of one of the drop-instruments on a larger scale, the upper portion of the drop proper being removed; and Fig. 5, a similar plan view of a modified construction.

The instrument forming the subject of this invention may be used as a part of an annun-

ciator, A, comprising a case or frame having a front plate, A', provided with openings or transparent portions A² corresponding to the different indicators, which are normally concealed behind the said plate A', but which, when operated, come into view through said openings in the well-known manner.

The indicating-instruments each comprise a frame or base-plate, a, which may be of cast-iron, adapted to be fastened to the frame-work of the annunciator A in any suitable manner, and each having supported on it an electro-magnet, b, the circuit of which includes a battery and is extended to the point or points from which the instrument is to be operated, where it is provided with a normally-open circuit-closer or push-button intended to be momentarily closed in order to operate the indicating-instrument and to cause the indicator to be displayed.

As shown in Figs. 1 to 4, the magnet b is of usual horseshoe form; but a straight core-magnet might be used, as shown in Fig. 5. The said magnet b is held in a substantially horizontal position near the upper part of the frame or base-plate a, which latter is provided near its lower end with projecting lugs a', in which is pivoted the armature c of the said magnet b. The said armature c is shown as composed of a piece of sheet metal having a transverse portion extending through the field of the magnet, as best shown in Figs. 3 and 4, and a downwardly-projecting portion, c', pivoted in the said lugs a' of the base-plate and extending beyond said pivots, as shown at c², Fig. 2, to constitute a stop to limit the retractive movement of the armature from its magnet by the said portion c' coming in contact with the base-plate a.

It will be seen that the weight of the armature is mainly at the front of its pivot, and thus tends to move it away from the poles of the magnet, and no other retractor is required.

When a straight core-magnet is used, as shown in Fig. 5, the armature may have inclined portions opposite the poles, which may themselves be inclined, so that the attraction of the magnet tends to move the armature in the same direction as the direct pull of the horseshoe-magnet shown in the other figures.

The armature c is provided with a drop-sup-