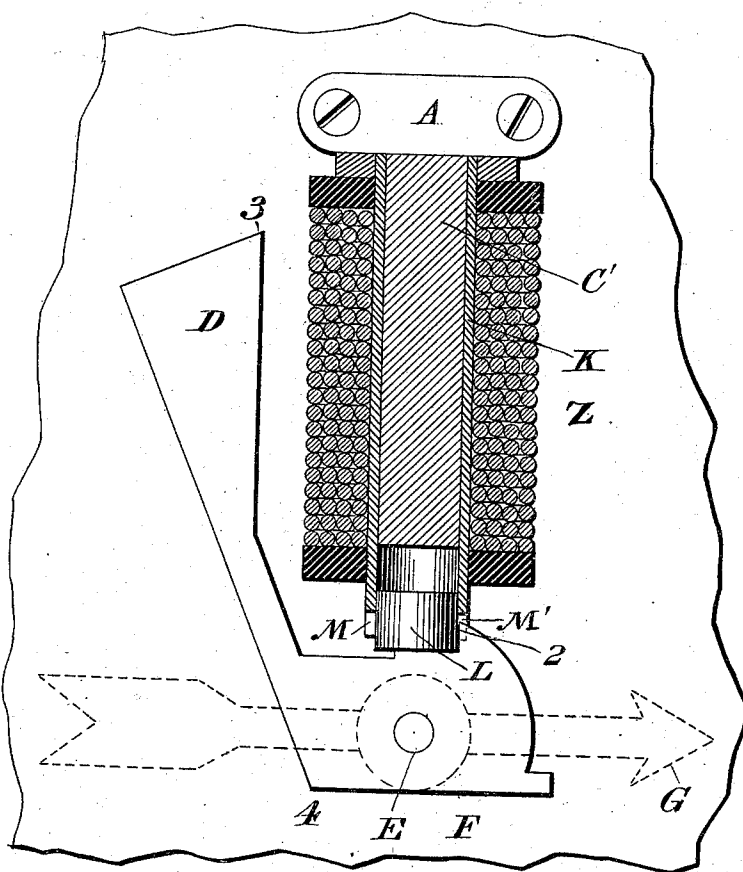


(No Model.)

H. C. THOMSON.
ELECTRIC ANNUNCIATOR.

No. 542,664.

Patented July 16, 1895.



Witnesses:
L. C. Sargent
Charles H. Thomson

Inventor:
H. C. Thomson
by E. P. Rayson
Attorney

UNITED STATES PATENT OFFICE.

HENRY C. THOMSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
ELECTRIC GAS LIGHTING COMPANY, OF PORTLAND, MAINE.

ELECTRIC ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 542,664, dated July 16, 1895.

Application filed October 2, 1894. Serial No. 524,720. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. THOMSON, a citizen of the United States, residing at Boston, Massachusetts, have invented a new and
5 useful Improvement in Electric Annunciators, of which the following is a specification.

My invention relates particularly to such annunciators as are shown in Letters Patent of the United States to F. W. Ross, No. 513,956, of January 30, 1894, and No. 521,046,
10 of June 5, 1894. This class of annunciators is so thoroughly described in said patents and their operation so well known in the art that it will only be necessary for me to point out
15 the particulars in which my invention consists in comparison with said patents. In describing my invention, I refer particularly to said Ross patent, No. 513,956, inasmuch as the changes to adapt my improvement to use
20 in No. 521,046 will not require any detail herein.

The object of my invention is two-fold: first, to reduce the amount of electric energy required to operate such apparatus, and thus
25 to make a saving in the expense of operating the electric battery; second, to secure an improved construction of the mechanical parts of the apparatus. I can best describe my invention by referring to said Ross patent, No.
30 513,956. In said Ross invention the core of the single vertical magnet is movable within the helix of the magnet and is there retained by means of the weighted lever, which is mounted upon the opposite end of the spindle
35 carrying the index-finger. When said magnet is energized and the movable core drawn within the same, said lever is thereby liberated and, falling, carries with it the index-finger, which is thus made to point in any de-
40 sired direction.

My invention more particularly consists in using a permanently-fixed core within the helix sufficiently long to come down to nearly, but not quite, the end of the spool upon which
45 the helix is wound, then inserting in said spool a small cylinder or section of tubing of, say, one-quarter of an inch in length, in the opposite projecting sides of which two notches are cut, and then taking a section of a core
50 of the same size with the armature-core and of about, say one-eighth of an inch in height,

and placing that within said cylinder, so that if drawn up within the cylinder it will rise higher than the said notches in the cylinder.

My invention will be easily understood from 55 the accompanying drawing in section, in which Z represents the magnet; K, the cylinder within the magnet Z; C', an armature-core extending to the end of the spool; L, a movable drop or armature. The magnet is sus- 60 tained upon the frame A. The indicating-arm G is represented by dotted lines and is upon one end of the spindle E, which moves in the sleeve F. Upon the other end of the spindle E is carried the lever D, having the 65 slot 2 and the weighted end 3. The lever D is normally retained in the position shown in the drawing by the drop or armature L, but when said armature is elevated the said lever D will swing through the slots M M' cut in 70 the cylinder K.

Upon any magnet Z being energized and its fixed core rendered magnetic, the drop L will be, of course, attracted, as would an armature by the core C' of said magnet, and thus 75 retracted above the slots M M' in the cylinder-piece K. The weighted lever D will thereby be released and its edge swung through the slots M M', thus allowing its weighted end to fall and of course allowing the index- 80 finger to fall at the same time. Upon said magnet being de-energized the drop L will of course return to position. The index-finger may be restored to normal position by means of a lift, (not shown,) but which in such 85 apparatus operates to elevate the weighted end D, thereby elevating the drop L until the cam 2 repasses through the slots M M', whereupon the drop L falls into said ratchet and retains the drop in the position shown in the 90 drawing. By means of this construction I obtain the two results which are desired, inasmuch as less electric energy will be required to lift the small drop L than to lift an entire core, and the mechanical construction of the 95 apparatus is also further simplified.

Having thus described my invention, I do not claim so much as is shown in either of said patents to Ross, except so far as combined with my improvement.

What I do desire to protect by Letters Patent and to claim is—

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1. In an electric annunciator, in combination with an index-finger and a weighted lever, each mounted upon a spindle supported within a sleeve, an electro-magnet having the
5 fixed core C', the cylinder K having the notches M, M', and the drop L, substantially as described and shown.

2. In combination with an electro-magnet having a fixed core extending nearly to the
10 lower end of its spool, a cylinder having opposite slots, inserted in the lower end of the spool, and a drop of about half the length of the cylinder, as a triggering device in an electric annunciator, substantially as described
15 and shown.

3. In an electric annunciator, the combination of the index-finger G, mounted upon the spindle E, within the sleeve F, the weighted lever D mounted also upon the end of said spindle, the magnet Z properly fixed to said
20 face-plate, the fixed core C', the slotted cylinder K and the drop L, substantially as described and shown.

In witness whereof I have hereunto subscribed my name, this 31st day of August, 25
1894, in the presence of two witnesses.

HENRY C. THOMSON.

Witnesses:

STEPHEN A. FOSTER,
CHARLES H. HANSON.