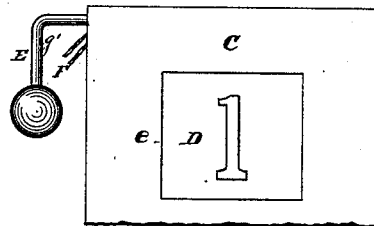


H. B. PORTER.  
Electric-Annunciator.

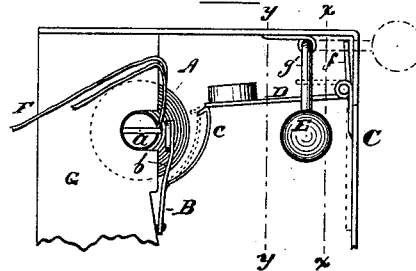
No. 214,261.

Patented April 15, 1879.

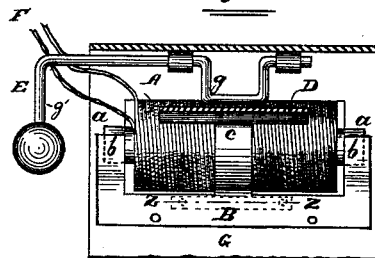
*Fig. 1*



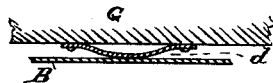
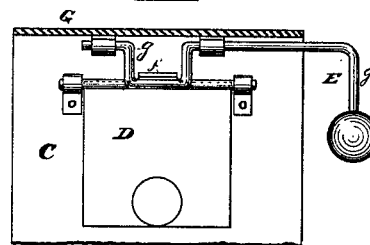
*Fig. 2.*



*Fig. 3*



*Fig. 4*



*Fig. 5*

*Attest:*

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**INVENTOR:**

*Henry B. Porter*  
**By** *F. F. Warner, his*  
*Attorney.*

# UNITED STATES PATENT OFFICE.

HENRY B. PORTER, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN ELECTRIC ANNUNCIATORS.

Specification forming part of Letters Patent No. **214,261**, dated April 15, 1879; application filed October 11, 1878.

*To all whom it may concern:*

Be it known that I, HENRY B. PORTER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Annunciators, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a front elevation of an annunciator embodying my invention; Fig. 2, an end elevation thereof; Fig. 3, a section in the plane of the line *x x*, viewed rearward or in the direction of the rear of the annunciator; Fig. 4, a section in the plane of the line *y y*, viewed toward the front or face; and Fig. 5, a horizontal section in the plane of the line *z z*.

Like letters of reference indicate like parts.

My invention consists in the several novel features of construction hereinafter fully described and specifically set forth, relating to the means employed to raise or drop the doors or curtains of the annunciator; my object being to simplify the construction and operation of this part of the mechanism of devices of the class hereinbefore mentioned.

In the drawings, A represents a single helix, and *a a* are the exposed ends of its core. B is an E-shaped armature, the ends or terminal arms of which are arranged to be attracted to the exposed parts *a a* when the helix is magnetized, as shown in Fig. 2.

The armature B is either slightly yielding or so hinged that the end arms, *b b*, will stand a little way from the parts *a a* when the helix is not magnetized, as represented by the full lines in Fig. 2, it being understood that they will move to or toward the helix when the latter is magnetized, and move slightly from it automatically when it is not.

*c* is the central arm of the armature. The arm *c* stands up in front of the helix, and sufficiently forward of it not to interfere with vibration of the armature.

I deem it preferable to make the armature yielding, in order to render it operative in the manner described, and I have therefore placed underneath it a light spring, *d*, which exerts its force against the rear or inner face of the armature.

C is the face of the annunciator, in which are made holes to expose the numbers or char-

acters employed, as indicated at *e* in Fig. 1. D is a door or curtain, hinged at its upper end to the rear side of the face C, and so arranged that when closed it will appear in the opening over or behind which it is hung, and thus expose to view any number or character upon the front side of the door, as shown in Fig. 1. *f* is a horizontal arm projecting rearward from the upper end of the door D. E is a double crank or looped rod turning in bearings in the frame, and its loop or interior crank, *g*, is so hung as to pass underneath and raise the arm *f* when the exterior crank, *g'*, is turned forward.

The up movement of the arm *f* raises the door D, and as the latter is thus swung back it strikes the arm *c*, which yields, and then springs forward as soon as it is released by the up movement of the door D. If the crank *g'* be now released, the door D will fall upon the upper end of the arm *c*, and be there supported by it. The crank *g* will then fall out of the way of the arm *f*, so as not to prevent the door D from falling to its original position when the support *c* is withdrawn. When thus supported the door or curtain D is in such a position that the number or character thereon cannot be seen through the opening *e*. All the numbers, therefore, may be thus obscured by turning the arm *g'* in the proper direction, for it is to be understood that one crank or looped arm may operate in like manner in connection with a number of doors, or that a system of such arms may be employed in connection with one arm for controlling them.

In order to show or exhibit in an opening, *e*, the number or character on its door, it is only necessary to switch or shift the current through the helix controlling the armature which supports the door when the latter is turned up or swung back in the manner described. The armature will then be attracted to the core, and thus, passing from underneath the door, the latter will fall vertically and expose its face in the opening in the face of the annunciator. When the magnet is inoperative the support *c* will move forward again to support the door when it is next raised.

F represents the circuit, which enters and leaves the helix in the usual manner, and G is a portion of the frame or case of the annunci-

ator. In other respects the annunciator may be made in any well-known or suitable manner.

It will be perceived that the parts which constitute the essential features of my invention are very simple in their construction and operation, and that they may be applied with facility to the purposes for which they are intended.

These improvements may also be employed with little expense, and are reliable in their action, and not likely to get out of order.

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

1. In an electric annunciator, the single helix A, arranged horizontally and having both ends of its core exposed, in combination with the E-shaped armature B, carrying the central arm, *c*, the lateral arms *b b* being arranged for attraction to or toward the exposed

ends *a a*, substantially as and for the purposes specified.

2. In an electric annunciator, the door or curtain D, hinged at its upper end to the face of the annunciator, and arranged behind or over an opening therein, and provided with the arm *f*, in combination with a crank-arm arranged to engage the arm *f*, and with a supporting-arm carried by the armature, substantially as and for the purposes specified.

3. The combination, in an electric annunciator, of the single helix A, having both ends of its core exposed to its armature, the E-shaped armature B, the hinged door or curtain D, provided with the arm *f*, the double crank E, and the open face, substantially as and for the purposes specified.

HENRY B. PORTER.

Witnesses:

F. F. WARNER,

JESSIE E. STUART.