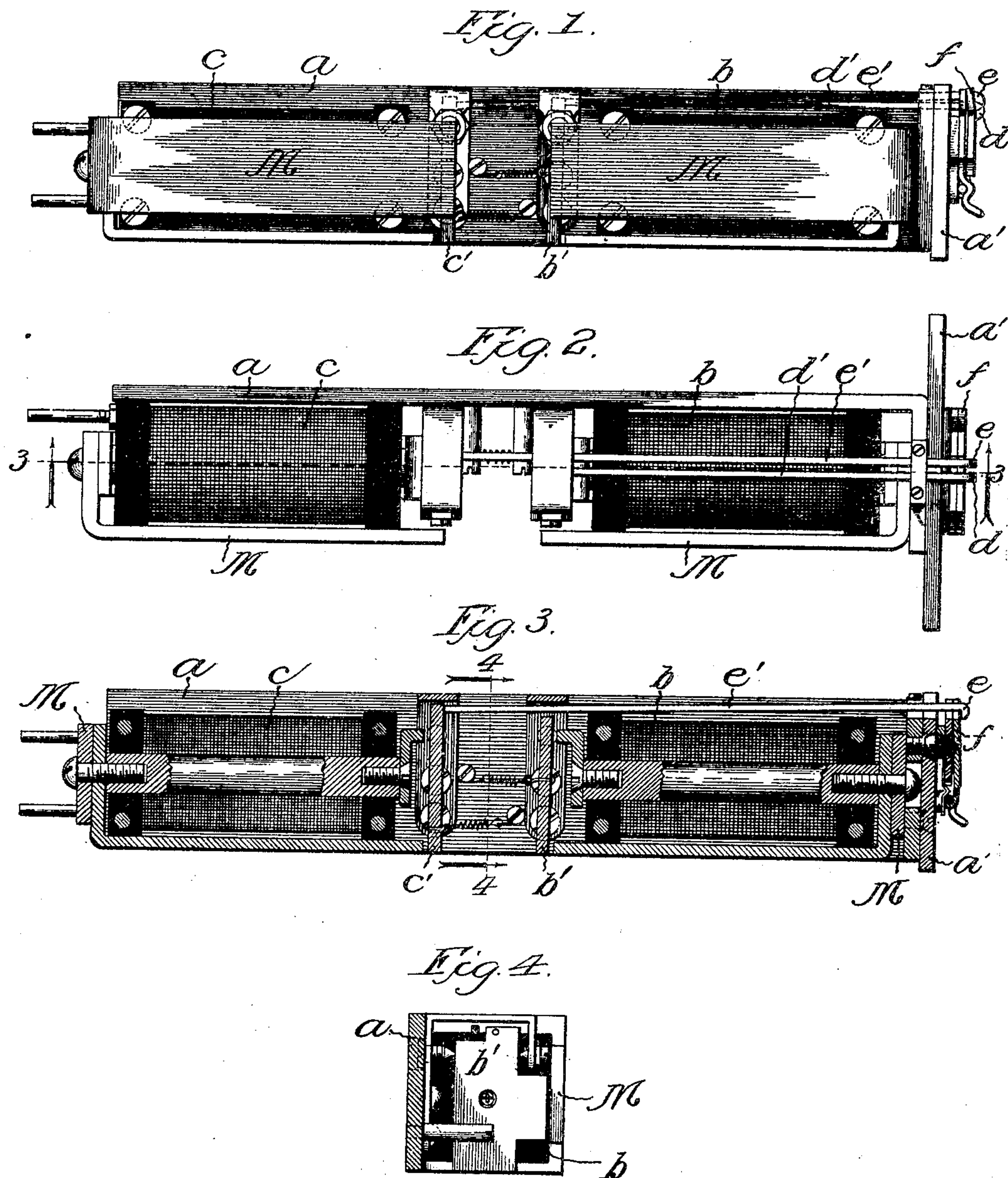


No. 812,954.

PATENTED FEB. 20, 1906.

C. E. SCRIBNER.
ANNUNCIATOR DROP.
APPLICATION FILED JUNE 24, 1905.



Witnesses:

Geo. C. Davidson.
J. E. Folk

Inventor:

Charles E. Scribner,
By Barton Tanner,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF JERICHO, VERMONT, ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ANNUNCIATOR-DROP.

No. 812,954.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed June 24, 1905. Serial No. 266,759.

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Jericho, in the county of Chittenden and State of Vermont, have invented a certain new and useful Improvement in Annunciator-Drops, of which the following is a full, clear, concise, and exact description.

My invention relates to signals for telephone-switchboards, and has for its object to provide an improved device which will be responsive to direct current of predetermined sign, but which will be unaffected by alternating current applied thereto.

My invention contemplates an improvement upon the annunciator disclosed in my Patent No. 552,726, of January 7, 1896, wherein is shown a drop comprising two independent electromagnets, a movable armature for each, and catches controlled by the different armatures, one of which catches is normally in engagement with the indicator of the annunciator and adapted upon the attraction of its controlling-armature to release the indicator and allow the same to fall into a position of display, while the other of said catches is normally out of engagement with the indicator, but is adapted upon the attraction of its controlling-armature to move into engagement with the indicator and prevent its display.

My invention consists, briefly, in polarizing the two electromagnets, and their biased armatures to respond to direct current of opposite polarity, so that upon the passage of direct current of proper sign through said magnets the catch normally engaging the indicator will be withdrawn and the other catch will be undisturbed, thereby effecting the display of the indicator; but upon the passage of alternating current through the two magnets the catches controlled thereby will be caused to vibrate out of phase, so preventing the display of the indicator, since one of the catches will at all times be in engagement therewith.

An annunciator constructed as above set forth is capable of advantageous use, for example, in association with a party telephone-line, being located at the central office and adapted to be selectively operated from any substation by the application of direct current of proper sign to the line. In such a system the subscribers on the party-line often desire to communicate with one another

without the intervention of the central-office operator, employing a code system of signaling to ring the bell of the particular subscriber desired. This alternating ringing-current would of course have no effect upon the drop at the central office.

I will describe my invention more particularly by reference to the accompanying drawings, wherein—

Figure 1 is a side elevation of my improved drop. Fig. 2 is a plan view thereof. Fig. 3 is a sectional view on line 3 3 of Fig. 2, and Fig. 4 is a sectional view on line 4 4 of Fig. 3.

The same letters of reference are used to indicate the same parts wherever they are shown.

The frame *a* of the annunciator supports two electromagnets *b c*, mounted end to end, and their armatures *b' c'*, which are pivoted upon brackets carried by the frame. Each of the magnets and its armature is polarized to respond to direct current of opposite polarity from that to which its companion is responsive, the magnet *b* and its armature *b'* being polarized to respond to current of positive polarity, for example, while magnet *c* and its armature *c'* are affected only by current of the opposite or negative sign. In order to polarize the electromagnets, each magnet is provided with a permanent magnet *M*, secured at one pole to the core and pole-piece of the magnet to impart the polarity of such pole thereto, the armature being biased by a suitable spring so as to respond or be attracted only when current flows through the helix of its magnet in proper direction to strengthen the magnetism of the pole-piece and overcome the spring. The permanent magnets associated with the two electromagnets have their poles reversed, so as to impart opposite polarity to the two electromagnets and their armatures, rendering them responsive to current of opposite sign. The armatures *b' c'* of said magnets are adapted to operate latches *d e*, controlling the display or concealment of an indicator or shutter *f*, mounted upon the end plate *a'* of the frame *a*. Latch-arms *d' e'* are secured to the armatures *b' c'*, respectively, and extend parallel to the magnet *b*, carrying at their free ends the latches or hooks *d e*. The latch *d*, carried by the armature *b'* of magnet *b*, is normally in engagement with the indicator or shutter *f*, but is adapted upon the attraction of arma-

ture *b'* to be moved out of engagement with said shutter to permit the same to fall into a position of display. The latch *e* is normally maintained out of engagement with the shutter, but is adapted to be moved by armature *c'* when attracted into engagement with the shutter to maintain the same concealed.

When direct current of positive polarity (which we have assumed to be the kind of current to which magnet *b* is alone responsive) is passed through the two magnets *b c*, the magnet *b* is energized and attracts its armature, thereby withdrawing the latch *d* from the shutter *f* and allowing said shutter to fall into a position of display, armature *c'* of magnet *c* and the latch *e*, controlled thereby, remaining inert, since current is not flowing through magnet *c* in proper direction to cause it to attract its armature. On the other hand, if alternating current be passed through the magnets *b c* they will be alternately and rapidly energized and deenergized, vibrating their armatures, which, due to the adjustment of the springs and the different polarities of the electromagnets, will lag in their operations and vibrate out of step or phase, so that the shutter will not be operated, since one of the latches will always be in engagement with the same.

30 I claim—

1. In an annunciator, the combination with the indicator thereof, of a pair of electromagnets and biased armatures therefor polarized to respond to direct current of opposite polarity, and catches controlled by said arma-

tures, one of said catches normally engaging the indicator to conceal the same and the other being normally disengaged therefrom, said magnets, upon the passage of alternating current therethrough, rapidly vibrating said catches out of step or phase and maintaining the indicator concealed, while upon the passage of direct current of proper sign through said magnets the first-mentioned catch is operated and the other catch remains inert, thereby displaying said indicator. 40 45

2. In an annunciator the combination with the indicator thereof, of a pair of electromagnets and armatures therefor polarized to respond to direct current of opposite polarity, said armatures being biased by means of adjustable springs, catches controlled by said armatures, one of said catches normally engaging the indicator to conceal the same, and the other being normally disengaged therefrom, said armatures having their springs adjusted so that upon the passage of alternating current through the magnets their catches are vibrated out of step or phase and maintain the indicator concealed, while upon the passage of direct current of proper sign through said magnets the first-mentioned catch is operated and the other catch remains inert, thereby displaying said indicator. 50 55 60

In witness whereof I hereunto subscribe my name this 24th day of April, A. D. 1905.

CHARLES E. SCRIBNER.

Witnesses:

F. P. McINTOSH,
R. T. ALLOWAY.