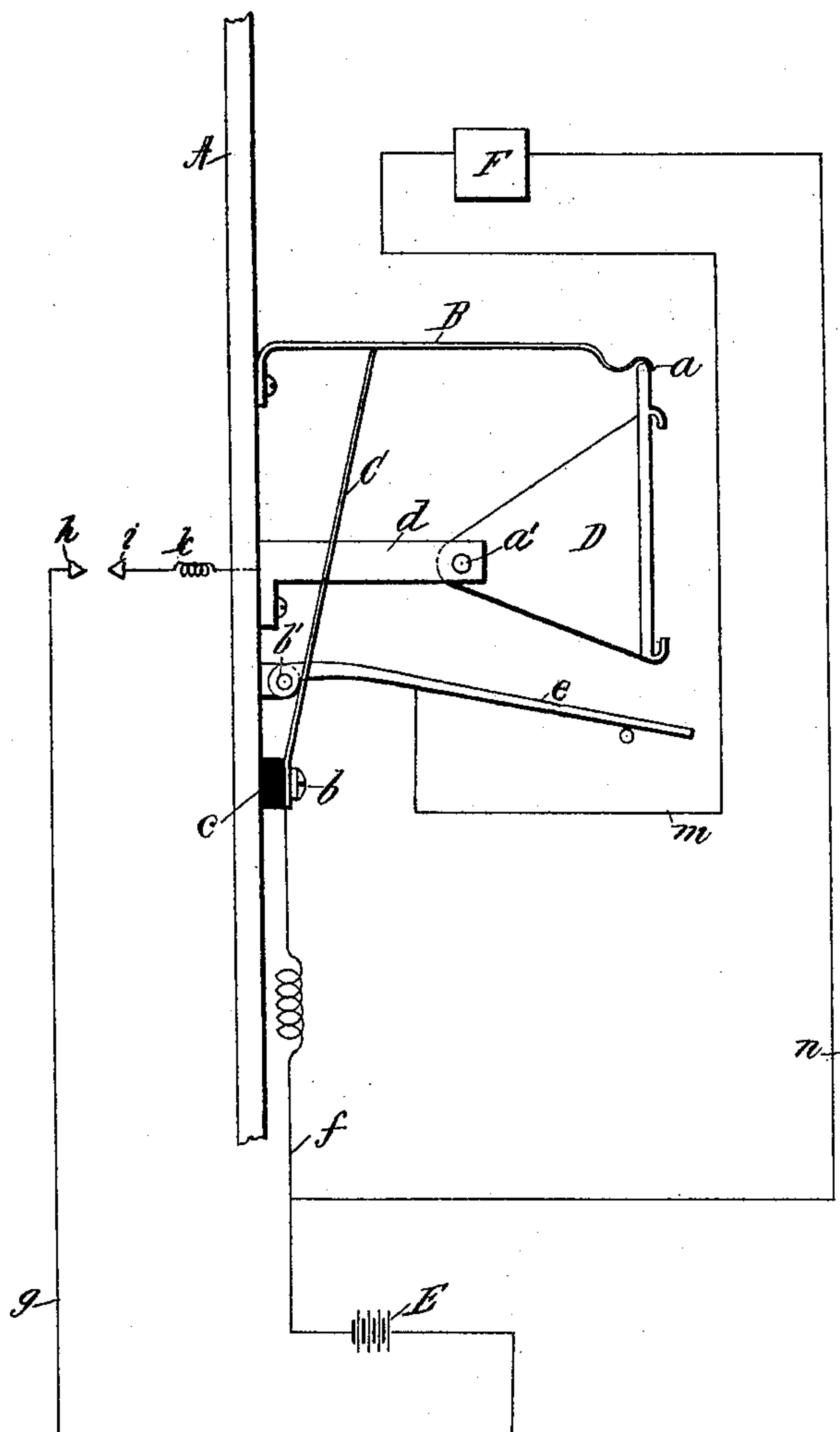


(No Model.)

J. KIPS.
ELECTRIC ANNUNCIATOR.

No. 555,101.

Patented Feb. 25, 1896.



Witnesses
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ELECTRIC ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 555,101, dated February 25, 1896.

Application filed January 8, 1895. Serial No. 534,207. (No model.)

To all whom it may concern:

Be it known that I, JOHN KIPS, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Electric Annunciators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, which is a diagrammatic view of an electric annunciator made according to my invention.

The object of this invention is to avoid or obviate the use of an electromagnet in the construction and operation of annunciators; and to this end it comprises certain novel combinations of parts, each of which said combinations comprises as an element therein a wire or conductor arranged to be elongated from its normal length or condition by the passage of an electric current therethrough by means of which the aforesaid object is effectually obtained without any impairment in the effectiveness or utility of the annunciator.

The drawing shows in diagram the construction and circuit arrangement.

A is a metallic plate or bracket designed to support and connect with certain operative parts of the apparatus and which may itself be in any suitable manner attached to a wall or other support. To the part A is attached one end of an elastic metallic stem or spring B, at the outer or free end of which is provided a hook or catch *a*. At any suitable distance from this spring B is a stud *b*, insulated in any suitable manner—as, for example, at *c*—from the plate A. From this stud *b* to the spring B extends a taut wire C, which normally holds the spring against its resilient tendency. In other words, the tension of the wire C is in opposition to the resiliency of the spring, so that when its strain is relaxed the spring will move outward or away from the drop D.

Pivotally connected with the plate A—as, for example, at *a'*—upon the end of an arm *d* projected from said plate, is the “drop,” so called, (indicated by the reference-letter D,) of the annunciator; in other words, the device which bears upon it the numerals, letters or

other indicia to be brought to notice or to view when the device falls or drops in the manner well known in the operation of annunciators. When the drop is in raised normal or non-indicative position, its upper forward edge is held by the hook or catch *a* of the spring B, which thus holds the drop in its said position; also pivotally connected with the plate A, as at *b'*, is a bar *e*, which arrests the movement of the drop D when it has reached the proper distance in its fall. The drop D, like the spring B, &c., is composed of metal or conducting material through which an electrical current is readily transmissible.

E is a battery or equivalent source of electricity. One pole of this battery connects by a wire *f* with the wire C. The opposite pole of the battery connects by a wire *g* with a push-button *h* or like device, which operates in connection with a contact-piece *i*, which in its turn connects by a wire *k* with the conductive arm *d*, and consequently with the drop D. From the bar *e* to a bell or other audible signal F extends a wire *m*. From said bell or audible signal to the wire *f* extends a wire *n*. These wires, as herein presently explained, form parts of an electric circuit by which on occasion the bell or audible signal is sounded. As the means by which such signals may be actuated from or by an electric circuit are well known, no specific description thereof is here necessary.

In the operation of the invention, the circuit of the battery E being closed—as for example, by bringing the push-button *h* into contact with the contact-piece *i*—the electric current passes through the wires *g k*, through the arm *d* and drop D to the spring B, thence through the wire C to the wire *f*, and back to the opposite pole of the battery. Of course the direction of the current through the parts may be the reverse of this when desired. The passage of the current through the wire C elongates the same and thereby permits an outward movement of the spring B sufficient to move the catch *a* from the upper edge of the drop D, which latter, being released, falls from its normal or raised position to the depressed position in which its figures, letters, or indicia are exposed to view, its descent being limited or arrested at the

proper point by the bar *e*, with which it comes in contact in its fall. The separation of the spring B from its contact with the drop D of course breaks the continuity of the current through the spring and cuts out the latter from the circuit. The contact of the drop with the bar *e* closes the circuit through said bar and wire *m*, the bell or other audible signal F and the wires *n* *g*, the arm *d*, and the drop D, thereby sounding the audible signal as an immediate consequence of the descent of the drop, this sounding of the audible signal continuing until the circuit is broken—as, for example, by the separation of the push-button *h* from the contact-piece *i*.

The drop may be lifted to its normal or non-indicative position by any suitable means—as, for example, an ordinary lifting-bar—when the catch *a*, resuming its hold upon the edge of the drop, retains the same in place until a current being again passed through the wire C the operation of dropping the drop with its consequence of sounding the audible signal is repeated. To prevent any undue backward movement of the drop the spring B may have a projection *c'* provided thereto in such manner as to retard any backward tilting of the drop from its raised or normal position.

It is of course to be understood that a multiplicity of drops operated according to my invention may in practice be employed in association with each other, as is done with the drops of annunciators heretofore in use.

It is further to be observed that, when desired, instead of associating the spring B with a drop D said spring may, by suitable and easily-arranged devices, be connected with an index-finger which by a change of position may indicate or visually announce a call made through the apparatus; also, that instead of forming the spring so as to be itself resilient a bar may be substituted in its place, and any suitable means—as, for example, a spring applied thereto—may be given the degree of resiliency necessary to afford the requisite degree of tautness to the wire C, and the motion, when the wire is relaxed or elongated, to actuate or set in operation the indicating device or devices.

By means of my invention I am able, without in any manner impairing the utility or effectiveness in operation of this class of mechanism, to wholly dispense with the electromagnet heretofore deemed necessary and

thus to a very material extent simplify and cheapen the construction, and, further, to materially reduce the power heretofore required for the operation of annunciators.

What I claim as my invention is—

1. The combination with the drop, D, pivoted at, *a'*, the spring, B, having the catch, *a*, at its free extremity, the insulated stud, *b*, the taut wire, C, extended from said stud to the spring, the bar, *e*, pivoted as at, *b'*, and arranged to arrest by contact the descent of the drop, of a battery, E, the wire from one pole of which connects with the taut wire, C, while that from its opposite pole connects with the drop, D, to actuate a signal when the drop has come in contact with the bar, all substantially as and for the purpose herein set forth.

2. The combination with the drop, D, pivoted as at, *a'*, the spring, B, having the catch, *a*, at its free extremity, the insulated stud, *b*, the taut wire, C, extended from said stud to the spring, the bar, *e*, pivoted as at, *b'*, and arranged to arrest by contact the descent of the drop, of an audible signal, F, connected by wires, *m*, *n*, and, *k*, with the bar, *e*, and the drop, D, respectively, and a battery, E, the wire from one pole of which connects with the taut wire, C, while that from its opposite pole connects with the drop, D, to actuate said signal when the drop has come in contact with the bar, all substantially as and for the purpose herein set forth.

3. The combination with the drop, D, pivoted as at, *a'*, the spring, B, having the catch, *a*, at its free extremity, the insulated stud, *b*, the taut wire, C, extended from said stud to the spring, the bar, *e*, pivoted as at, *b'*, and arranged to arrest by contact the descent of the drop, of a battery, E, the wire, *g*, from one pole of which connects with a push-button, *h*, and contact-piece, *i*, while the wire, *f*, from its opposite pole connects with the taut wire, a conductor connecting said contact-piece with the drop, an audible signal, F, a wire, *n*, extended from said signal to the wire, *f*, and wire, *m*, extended from said signal to the bar, *e*, all substantially as and for the purpose herein set forth.

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Witnesses:

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