

(No Model.)

W. J. BAGBY.
ELECTRIC METER.

No. 424,401.

Patented Mar. 25, 1890.

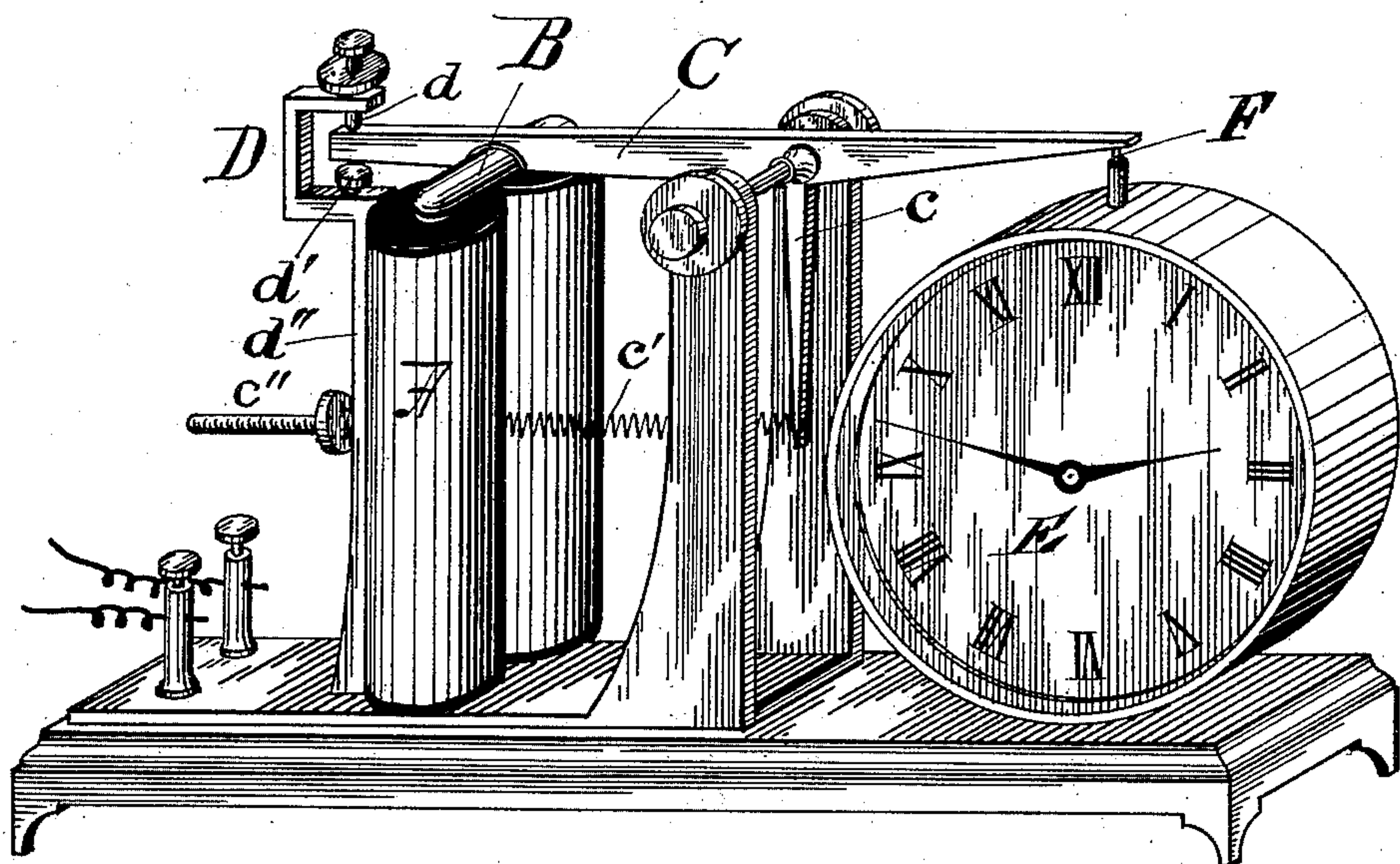


Fig. 1.

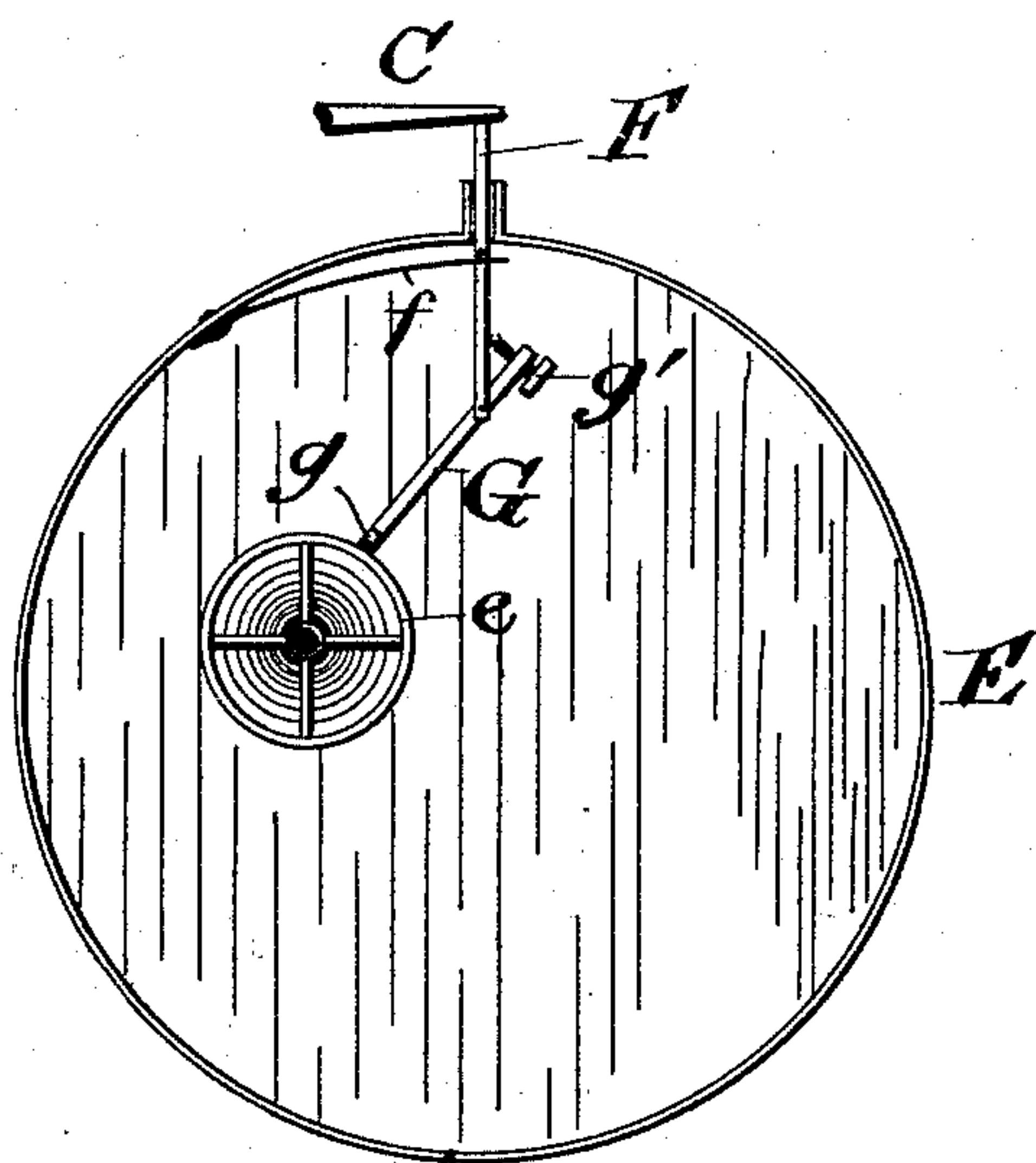


Fig. 2

WITNESSES:

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WILLIAM J. BAGBY, OF ATLANTA, GEORGIA.

ELECTRIC METER.

SPECIFICATION forming part of Letters Patent No. 424,401, dated March 25, 1890.

Application filed November 18, 1889. Serial No. 330,768. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BAGBY, of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful
5 Improvements in Timing Electric Currents; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the
10 same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to devices for detecting the stoppage of the current through
15 an electrical circuit—such as an electric-light circuit—during the night especially, but of course being equally applicable at all times. The invention consists of an electro-magnet
20 so arranged and combined with other elements in the device as to stop a time-piece and so set the escapement or balance wheel as to allow it to start on the reverse action of the magnet, the details of all of which will be
25 hereinafter fully described, and the parts claimed as new will be pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the device, showing the
30 parts assembled in full working order, the clock therein shown being stopped by the stoppage of the current, as shown by the position of the lever carrying the armature. Fig. 2 is a sectional view of the clock-case,
35 showing the balance-wheel and hair-spring and the lever attached to the operating-plunger.

In the figures, like reference-marks indicating corresponding parts in the several
40 views, A is an electro-magnet; B, the armature; C, the lever, which is preferably of brass, and which is caused to incline by the action of the magnet, and *c* is a small lever attached to the lever C, and being acted on
45 by the pulling coil-spring *c'*, which will pull the armature back on the breaking of the circuit or the cessation of the flow of the current from any cause. Stops D of any nature may be supplied to limit the movement of
50 the lever C, the screws *d* and *d'* being, however, the preferable form of obtaining this adjustable limit to said movement, the ten-

sion of the spring *c'* being regulated by the screw *c''*, which passes through the upright post *d''*.

E is a clock, which may be of any form of
55 construction. Passing through the casing of said clock in some position convenient for engagement with the lever C is a pin F, which has play, in the construction shown, verti-
60 cally, being pressed upward on the attraction of the armature on the lever C to the magnet by the spring *f*, and being pressed downwardly by the engagement of the lever C with its top end. This pin F carries on its lower
65 end, loosely pivoted thereto, the lever G, which engages with the rim of the balance or escapement wheel *e*, and is set so as to engage at a time slightly before the downward
70 movement of the pin has ceased, by reason of which and the inclination of the lever to the line of motion of the said pin the balance-wheel will be slightly thrown back from the point in its revolution at which it stood when
75 first stopped by the contacting of the lever G therewith. This will so set the said balance or escapement wheel that on the withdrawal from contact therewith of the said lever by the exciting of the magnet it will at once
80 start in its partial revolution and so cause the clock to mark the time until the current shall cease. If desired, the lever G may have a shoe *g* on its point of contact with the wheel for the purpose of making a soft positive
85 frictional contact. The screw *g'* is for the purpose of governing the lateral position of said contact-point at the time of its first contact with the wheel *e*.

The operation of this device is as follows:
The clock is set at the time that the current
90 is to start, and as soon as the current starts the magnet being excited thereby and by attracting the armature causing the lever C to move upwardly at its outer end and allow the spring *f* to press the pin F upwardly, and
95 cause the disengagement of the lever G from the balance-wheel and allow it to start, while on the stopping of the current a reverse action of the parts takes place, the lever C pressing the pin F downwardly against the
100 action of the spring *f*, and the lever G engaging with the balance-wheel, then passing downwardly against the action of the spring *f*, and the lever G engaging with the balance-

wheel, then passing downwardly a little farther and turning the balance-wheel back, as hereinbefore described, the clock being then in a position to start at any time on the exciting of the magnet A. As an illustration, we will say that the current is to start at six o'clock. The clock is set at that time. If the current loses time by not being started at six, the clock will be as much slow as time is lost, and if the flow is stopped at any time during the night the clock will be slow in the morning by the length of time that has been lost during the night, or, more properly, by the length of time which the magnet A has been demagnetized between the two limits at which the current should start and stop flowing.

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

1. In an electrometer, the combination of the lever C, pivoted between standards rising from the main support, the armature B, attached to the outer end of said lever, the magnet A, in connection with said armature to operate said lever, the means for depressing the end of said lever when released by the magnet, consisting of the lever *c* and the spring *c'*, connecting the end of the lever *c* with the standard *d''*, the escapement or other wheel of a clock-movement, and the intermediate mechanism between said lever and wheel, consisting of the pin F, held in suitable bearings below the end of the lever C, the spring *f*, holding said pin in contact at its upper end with the said lever, and the lever G, attached to the lower end of said pin and engaging with the said escapement-wheel, for the purposes specified.

2. In an electrometer, the combination of the lever C, and the means described for operating the same, the escapement-wheel of a clock, the intermediate mechanism between said lever and wheel, consisting of the pin F, held in suitable bearings below the end of the lever C, the spring *f*, holding said pin in contact at its upper end with the said lever, and the lever G, attached to the lower end of said pin and engaging with the said escapement-wheel, substantially as and for the purpose specified.

3. In an electrometer, the combination of the lever C, pivoted between suitable standards rising from the main support, the armature B, attached to the outer end of said lever, the magnet A for operating the lever through the armature B, the adjusting-screws carried on the standard *d''* for confining the movement of the lever, the lever *c*, projecting from the lever C, the spring *c'*, connecting the lever *c* with the standard *d''* for depressing the inner end of the lever C when released from the magnet, the pin F, supported below the inner end of said lever in a suitable bearing, the spring *f*, holding the pin in contact with the lever, the balance-wheel *e*, and the adjustable lever G, pivoted near one end to the lower end of the pin F, and having its other end bearing against the balance-wheel *e*, substantially as and for the purpose set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM J. BAGBY.

Witnesses:

A. P. WOOD,
S. M. WOOD.