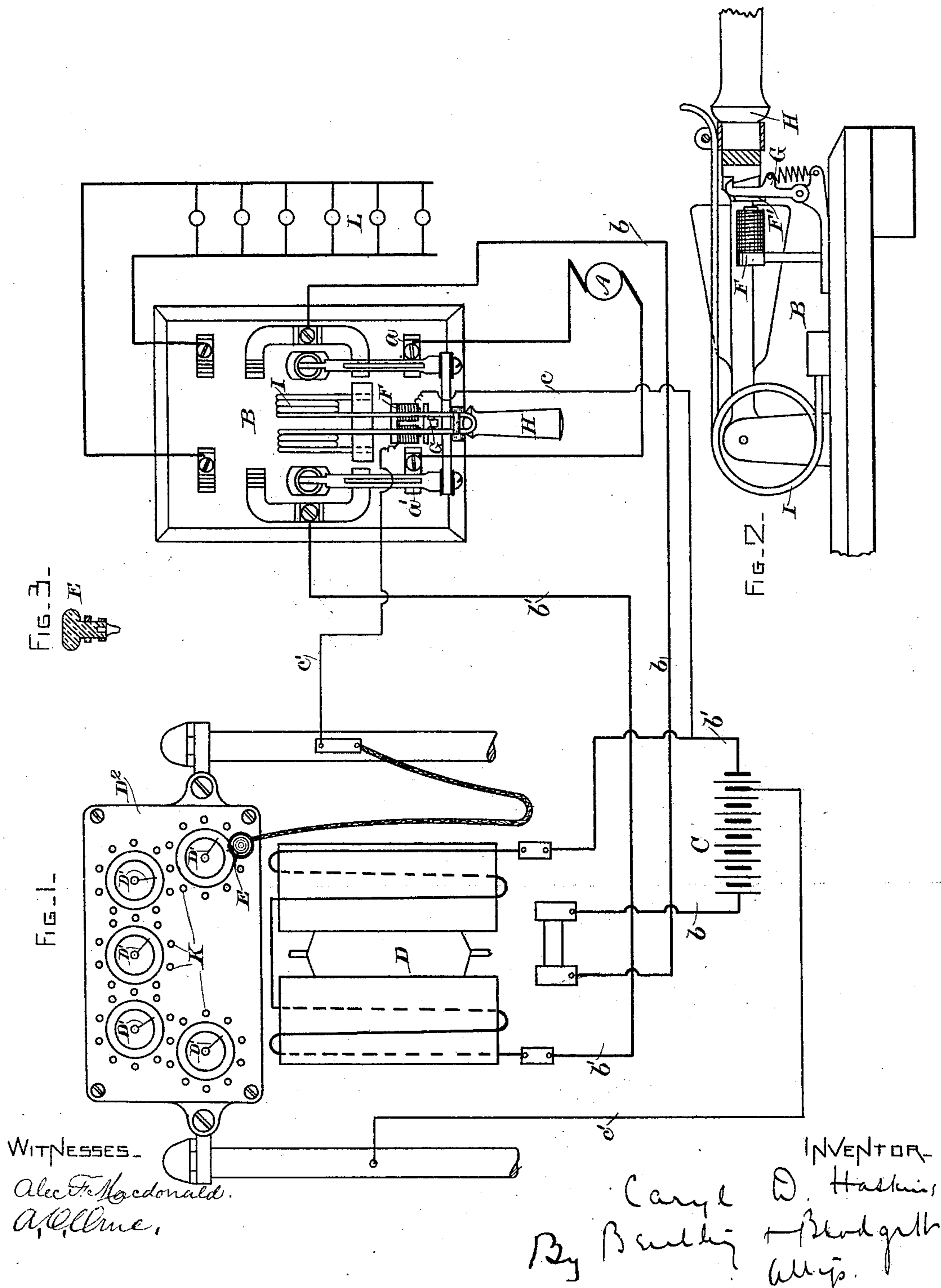


(No Model.)

C. D. HASKINS.
CUT-OUT METER.

No. 518,244.

Patented Apr. 17, 1894.



UNITED STATES PATENT OFFICE.

CARYL D. HASKINS, OF LYNN, ASSIGNOR TO THE THOMSON-HOUSTON
ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

CUT-OUT METER.

SPECIFICATION forming part of Letters Patent No. 518,244, dated April 17, 1894.

Application filed September 19, 1892. Serial No. 446,470. (No model.)

To all whom it may concern:

Be it known that I, CARYL D. HASKINS, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Cut-Out Meters, of which the following is a specification.

My invention relates to devices for automatically controlling the amount of current which is fed to a given circuit, and, as specifically described hereinafter, it comprises a meter for measuring said current, and a switch held closed by a detent, but adapted to be released by the closing of an electric circuit by the meter, after any predetermined amount of current has passed through said switch. And I regard as novel and of my invention both the combination of devices just indicated and such other matters as are specified in the claims forming a part hereof.

In the drawings, Figure 1 shows a dynamo, a meter, a storage battery, a work circuit, and means for automatically releasing the switch. Fig. 2 is a side elevation of the switch on an enlarged scale. Fig. 3 is a detail.

The terminals of the dynamo, or other source of current, A are connected at $a a'$ to the contacts of a double pole switch B, which will be described more fully hereinafter. From the switch the feeding mains $b b'$ lead to a storage battery C through a meter, comprising a motor mechanism seen at D and a registering mechanism driven thereby. A shunt circuit $c c'$ when closed includes one or two cells of the battery, the indexes D' of the meter, an adjustable or movable contact E which is insulated from the indexes, and a small electro-magnet F, the armature F' of which is secured to a spring actuated detent G which engages with the handle H of the switch when the dynamo circuit is closed through the battery. A strong coiled spring I is attached to the handle H, and acts to throw the switch open as soon as it is released by the withdrawal of the detent from the handle. The detent is withdrawn by the closing of the shunt circuit through the electro magnet F by an index D' , or other contact movable with the registering mechanism of the meter coming in contact with the movable contact E. This consists of a plug attached to a flexible conductor and

adapted to be inserted in any one of a series of holes K formed in the plate D^2 which supports the dials of the meter.

As soon as the determined quantity of current has been fed into the battery, the circuit $c c'$ is closed and the switch is thrown over, cutting out the dynamo A and stopping the motor mechanism of the meter. If desired the switch may connect the battery with a work circuit L. Means for this purpose are shown in Fig. 1 where L is a work circuit in which lamps or other translating devices are coupled in parallel. The terminals of the circuit are brought to contacts upon the switch as shown, which are engaged by the blades of the switch arm when the same is thrown over by the spring I, thus putting the translating devices in circuit L directly in circuit with mains b, b' which, as before explained, connect with the storage battery C. The consequent reversal of current carries the index D' away from the contact E and opens the shunt $c c'$, leaving the detent free to again engage with the switch when it is once more closed on the contacts $a a'$.

It is evident that instead of the storage battery C, any other apparatus may be used into which a definite quantity of current is to be fed, such as a plating bath, or an ordinary light or power circuit, and that the circuit controlled, as explained, by the motor mechanism may serve other purposes, when desired, than cutting off the source of current supply.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with an electric apparatus into which a predetermined quantity of current is to be fed, of a switch controlling the feeding mains, an electro magnet for releasing the switch, a meter for measuring the current and having a movable index, a motor mechanism for the meter maintaining the registration properly proportional to the current and a circuit including said magnet and a movable contact adapted to be set at any desired point in the path of said index, substantially as described.

2. The combination with an electric apparatus into which a predetermined quantity of current is to be fed, of a switch controlling the feeding mains, an electro magnet for re-

leasing said switch, a meter for measuring the current, and having an index moving over a dial surrounded with perforations, a motor mechanism for the meter maintaining the
5 registration properly proportional to the current and a circuit including said magnet and a movable contact adapted to be set in any one of said perforations, whereby the movable index may come in contact with it and close
10 the switch releasing circuit, substantially as set forth.

3. The combination with a storage battery, of a dynamo and a work circuit, a double pole reversible switch adapted to connect the bat-
15 tery with either the dynamo or the work circuit a meter for measuring the current supplied to the battery, and means whereby the meter is enabled to reverse the switch and connect the battery with the work circuit

when the battery has been charged to a pre- 20
determined point, substantially as described.

4. The combination with a storage battery, of a dynamo and a work circuit, a double pole reversible spring-actuated switch adapted to
25 connect the battery with either the dynamo or the work circuit, a detent for holding the switch closed on the feeding circuit, an electro magnet for releasing the switch, included in a shunt circuit from the mains, and a me-
30 ter controlling said circuit, substantially as set forth.

In testimony whereof I have hereto set my hand this 12th day of September, 1892.

CARYL D. HASKINS.

Witnesses:

GEO. R. BLODGETT,
N. F. HAYES.