

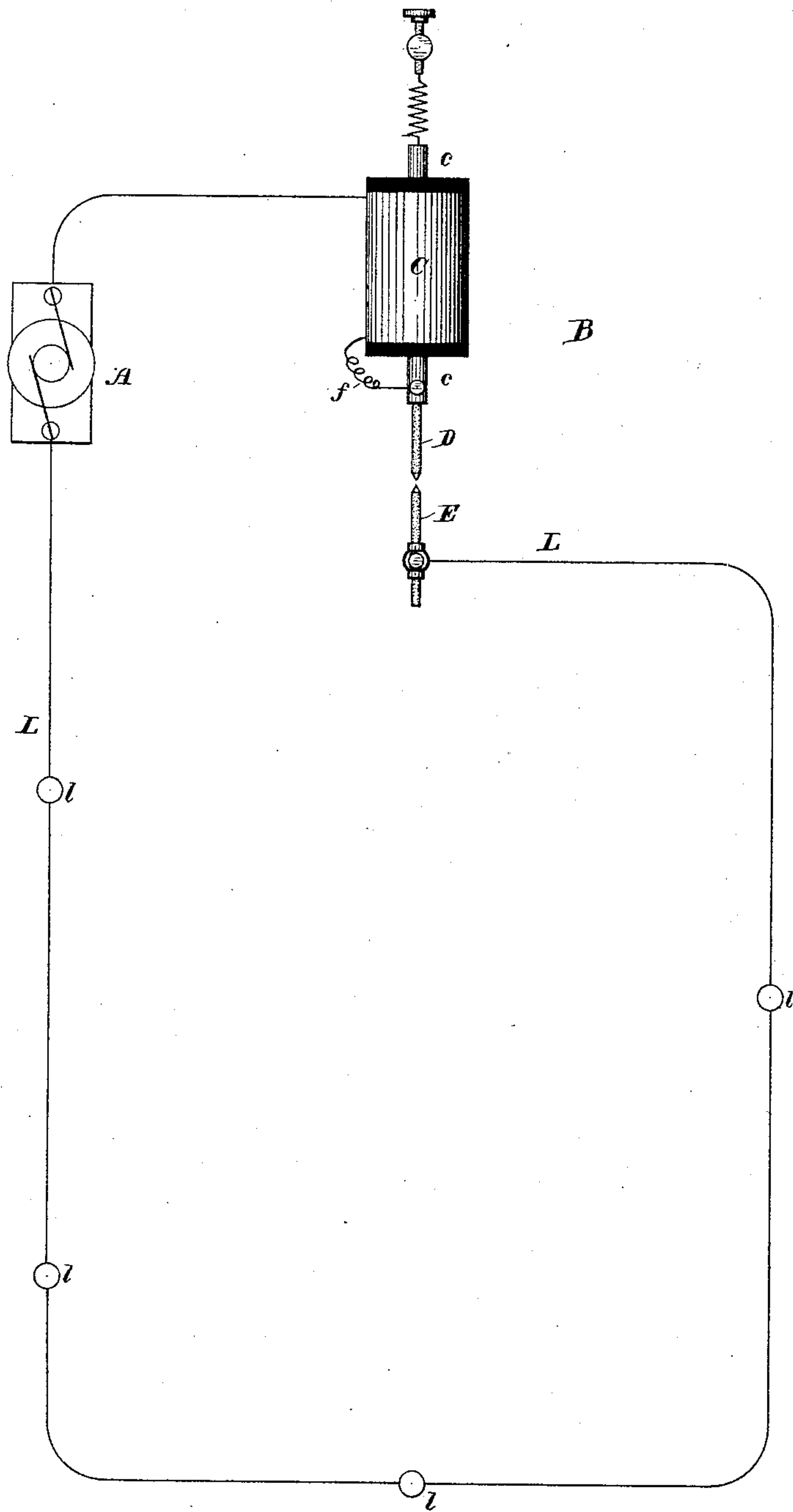
(No Model.)

W. M. THOMAS.

REGULATOR FOR ELECTRIC LIGHT CIRCUITS.

No. 333,698.

Patented Jan. 5, 1886.



WITNESSES

Ed. A. Newman,  
Al. C. Newman,

INVENTOR

Wm. M. Thomas

By his Attorneys

Baldwin, Hopkins & Payson.

# UNITED STATES PATENT OFFICE,

WILLIAM M. THOMAS, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO THE GRAND RAPIDS ELECTRIC LIGHT AND POWER COMPANY, OF SAME PLACE.

## REGULATOR FOR ELECTRIC-LIGHT CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 333,698, dated January 5, 1886.

Application filed November 24, 1884. Serial No. 148,715. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. THOMAS, of Grand Rapids, Kent county, Michigan, have invented an Improved Regulator for Electric-  
5 Light Circuits, of which the following is a specification.

My invention relates to that class of electric lighting in which the lights are connected in series either through the entire circuit or a  
10 portion of the circuit; and the object of the invention is to prevent an excess of current from passing through the circuit and lamps should a short circuit or ground occur, the increased current under such circumstances be-  
15 ing liable to damage the lamp.

The accompanying drawing is a diagram view illustrating my invention.

A indicates a dynamo-electric generator or source of electric energy. The circuit is indi-  
20 cated by the line L, and the safety device or regulator by B. In the circuit of the generator lamps *l* are connected in series, as shown. The circuit also passes through the sucking-magnet coil C, the endwise-moving armature  
25 of which is suspended therein by a spiral spring connected with an adjusting-screw. The lower end of the core *c* carries a carbon, D, opposite which a similar carbon, E, is adjustably supported. The carbon D is con-  
30 nected by a wire, *f*, with the coil C of the magnet, while the carbon E is connected, as shown, with the line L. The carbons D E are of a very much lower resistance than any of the lamps, so that when the lamps are working  
35 the carbons offer a very small resistance to the current. The carbon D should be adjusted by means of the adjusting-screw connected with the spiral spring, so that a slight spark is occasionally seen between the carbons.

If, now, the lamps continue to work all right, 40 approximately the same amount of current will continue to flow through the coil C, and the carbon will be maintained in the same relation. If, however, a short circuit or ground should occur at any point in the circuit, the 45 amount of current traversing the coil will be instantly increased, and unless it be simultaneously checked the lamps in the circuit will be injured. The increased current in the coil of the sucking-magnet C, however, draws the 50 core *c* up, thus instantly separating the carbons D E and throwing a largely-increased resistance into the circuit. The carbons D E will develop a light which will attract the attention of the attendant at the generator, who 55 will immediately take steps to reduce the current in the circuit.

I am aware of Patent No. 269,281, granted Z. T. Gramme December 19, 1882, and do not claim any subject-matter therein shown. 60

I claim as my invention—

The combination of a dynamo-electric machine or source of electric energy, its circuit, electric lamps, or other appliances connected in series in said circuit, and a safety and in- 65 dicating device, also in said circuit, consisting of the arc-lamp carbons D E, having a relatively-low resistance as compared with the lamps and appliances in the circuit, and having a solenoid coil for regulating the relation 70 of the carbons D E to each other, as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

W. M. THOMAS.

Witnesses:

WM. H. POWERS,  
WM. E. COX.