(No Model.) 2 Sheets—Sheet 1.

H. R. BOISSIER.

REGULATOR FOR ELECTRIC ARC LAMPS.

No. 310,781. Patented Jan. 13, 1885.

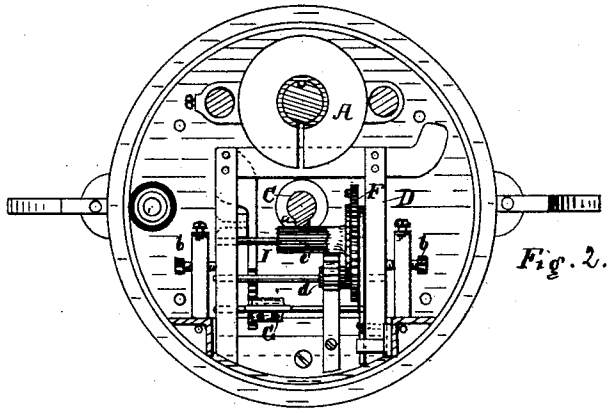


Fig. 2.

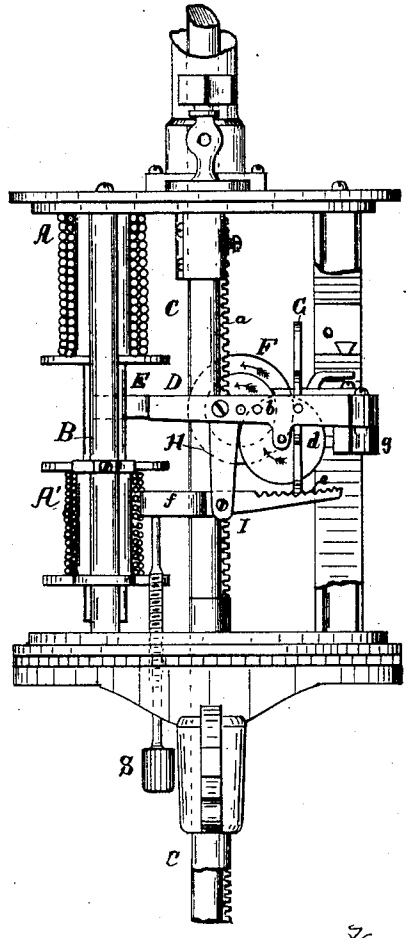


Fig. 1.

WITNESSES:

H. W. Bailey

P. B. Wilbur

INVENTOR

Hermann R. Boissier

BY F. P. Wilbur

ATTORNEY

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

H. R. BOISSIER.

REGULATOR FOR ELECTRIC ARC LAMPS.

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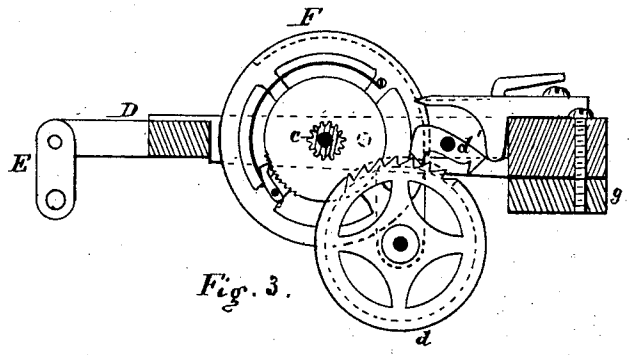


Fig. 3.

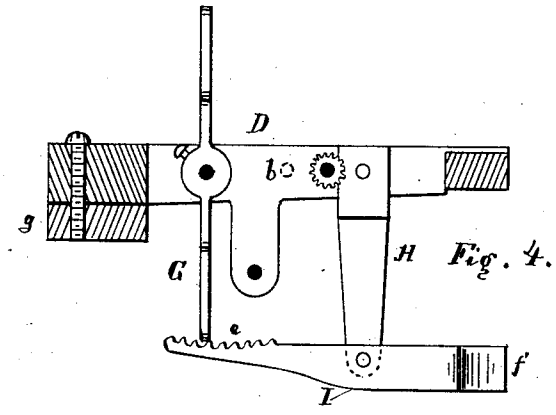


Fig. 4.

WITNESSES:

H. W. Seely

P. B. Wilbur

INVENTOR

Hermann R. Boissier

BY Z. G. Wieber

ATTORNEY

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

HERRMANN R. BOISSIER, OF NEW YORK, N. Y.

REGULATOR FOR ELECTRIC-ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 310,731, dated January 13, 1885.

Application filed May 13, 1882. (No model.) Patented in England January 22, 1883, No. 361; in France January 22, 1883, No. 153,254; in Belgium January 22, 1883, No. 60,234; in Germany January 24, 1883, No. 26,217, and in Austria May 9, 1883, No. 2,547.

To all whom it may concern:

Be it known that I, HERRMANN R. BOISSIER, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Regulators for Electric Lights; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to that class of electric-light regulators in which the upper-carbon holder is provided with a rack-bar engaging with a train of gearing of which the weight of carbon-holder is the motive power, such train of gearing being carried by a pivoted swinging frame connected with the armature or movable cores of two electro-magnets, one of low resistance, and placed directly in the circuit with the carbon-points, the other of high resistance, and situated in a shunt around the same. In such regulators some detent mechanism is necessary for stopping the downward movement of the rack-bar when the upper carbon has fed sufficiently far forward. Heretofore such detents have usually been fixed permanently or adjustably to the case containing the regulating mechanism, or to other stationary portion of the apparatus. In such cases the detent being fixed and the gearing pivoted, the relative position of the two varied, leading to occasional failures.

The object of my invention is to arrange the gearing and detent so that there shall always be certainty of action between them, to which end it consists in pivoting the detent upon the swinging frame carrying the gearing, thus insuring a definite relation between the two, no matter what the position of the swinging frame, as more particularly hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a front elevation and partial section of the upper portion of an electric-arc lamp constructed according to my invention, the casing which covers the mechanism being removed; Fig. 2, a top view of the same, and Figs. 3 and 4 detail views of portions of the gearing and detent mechanism.

A is the electro-magnet of low resistance in the direct circuit with the carbons, and A′ that of high resistance in a shunt around the same, B being the movable core of said magnets.

C is the upper-carbon carrier, provided with a rack-bar, *a*, on one side. A frame, D, pivoted at points *b b* and carrying a weight, *g*, is attached to core B by means of link E. This frame carries a train of gearing, *c* F *d d′*, terminating in the retarding-fan G, the rack-bar upon C meshing with the first wheel thereof and communicating motion thereto, which, retarded by G, permits the gradual descent of C.

To an arm, H, projecting below the frame D, is pivoted the metal piece I, provided at one end with notches *e*, the other end, *f*, being weighted, so that the end *e* may be thrown up into contact with the vibrating fan G. When this occurs, the lower end of the fan is caught in the notches *e*, and the movement of the train of gearing and of the carbon-carrier C is stopped. An adjusting-screw, S, passes up through the frame, its upper end taking under the end *f* of the detent I, so that its point of action may be regulated.

The operation of these devices is as follows: After the formation of the arc, as the carbons burn away and recede from each other the current through the magnet A decreases, and that through the magnet A′ increasing proportionately, the movable core B is drawn down and the outer end of the frame D is raised, disengaging the fan G from the arm I and allowing the upper carbon to descend to the proper distance; but should it descend too far the decrease of resistance causes the magnet A to raise its core B, so that the outer end of frame D is lowered, and the fan G catches in the notches *e* and stops the motion of the rack-bar. By this arrangement the detent is made absolutely certain in its action, for the weight of the arm I holds the notched end thereof firmly against the fan G and entirely prevents its vibration.

What I claim is—

1. In an electric-light regulator, the combination of a vibrating fly gearing with the rack attached to the upper-carbon carrier, and a lever notched at one end and normally in con-

tact with the edge of the fly, the other end being weighted, so as to keep the notched end in contact with the fly and prevent its oscillation except when released by the weighted end coming in contact with a stop attached to the frame of the regulator, both the said parts being contained entirely in the swinging frame, substantially as shown and described.

2. The combination of the vibrating fly G, pivoted to the swinging frame D, and the lever I, notched at *e* and weighted at *f*, the said lever being also pivoted to the swinging frame, all substantially as shown and described.

This specification signed and witnessed this 9th day of May, 1882.

HERRMANN R. BOISSIER.

Witnesses:
H. W. SEELY,
P. B. WILBER.