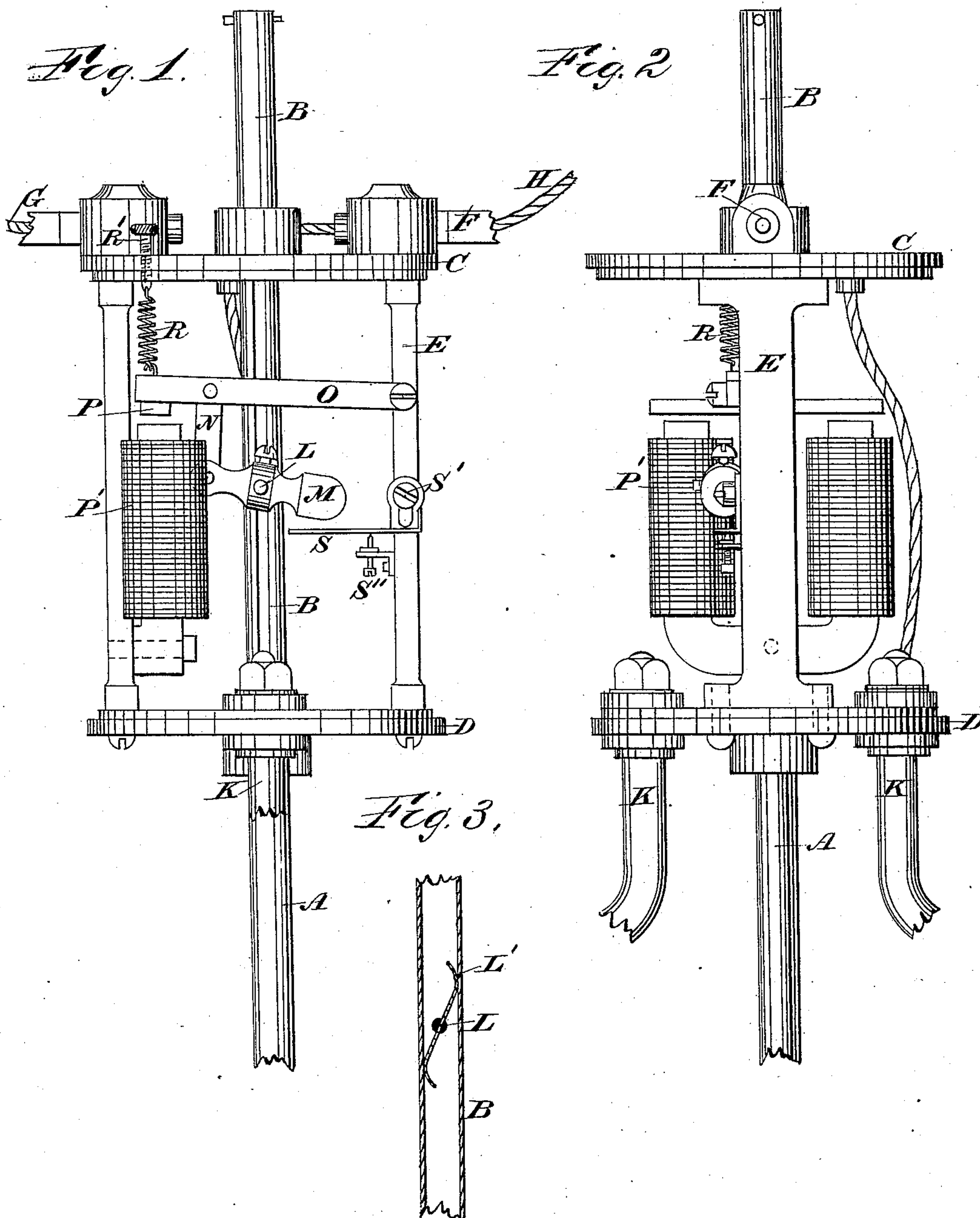


(No Model.)

T. L. DENNIS.
ELECTRIC LAMP.

No. 295,367.

Patented Mar. 18, 1884.



WITNESSES:

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THOMAS L. DENNIS, OF JERSEY CITY, NEW JERSEY.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 295,367, dated March 18, 1884.

Application filed December 19, 1881. Renewed November 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. DENNIS, residing in Jersey City, county of Hudson, and State of New Jersey, have invented certain
5 Improvements in Electric Lamps, of which the following is a specification.

The object of this invention is to regulate the distance of the carbons in an electric lamp, whereby the arc light is produced; and the
10 invention consists, chiefly, in suspending one of the carbons by a tube or rod in frictional contact with a lever acted upon by a spring of sufficient strength to support the carbon, and thereby hold it the proper distance from
15 the other for the required arc, and having upon said lever an armature placed in such relation to an electro-magnet which is connected with the main circuit in such a manner that whenever the current cannot pass
20 freely through the carbons a portion will act upon the electro-magnet, and thereby overcome the tension of the spring, and thereby cause the lever to release the tube and permit the carbon to descend; or, in other words, and
25 briefly, the distance between the carbons is regulated by the combined action of a spring and the overflow of the current in the main line through a single magnet and without the aid of clock-work or any other mechanism, as
30 will hereinafter appear.

In the drawings, Figure 1 is a side elevation of the upper portion of the lamp. Fig. 2 is an elevation at a right angle to Fig. 1. Fig. 3 is a vertical section of the tube for holding
35 the carbon.

One carbon, as at A, is suspended in the end of the tube B, which is supported in the plates C and D of the frame-work of a lamp and connected by the posts E.

40 To the upper plate, C, are attached the pivots F, by which the lamp is suspended, and through these pivots are or may be conducted the wires of the main circuit, as at G and H.

To the lower plate, D, is attached the yoke
45 K, that sustains the lower carbon. (Not here shown, but which projects upward in the usual manner to meet the downwardly-descending carbon fastened in the lower end of the tube B.) Said tube B slides freely through

holes in the plates C and D, and it is slotted 50 on one side to receive a pin at L, projecting from the lever M, one end of which is pivoted to a link at N, attached to the lever O, that supports an armature, P, of the electro-magnet P'. Said pin L supports a curved spring, 55 L', the curved sides of which rest against the inner face of the tube, as shown at Fig. 3, and by their frictional contact hold the tube that supports the upper carbon at any point, where it may be arranged for, dependent upon the 60 tension of a spring at R, and its adjusting-screw R' supports the armature and the lever M. One end of this lever M extends out over a table or bracket, S, which is adjustable to any desired height by a screw and slot, S', 65 and it is further nicely adjusted by a screw at S², so that the bracket S' may be brought to the exact required position for receiving the end of the lever M, which is caused to descend by drawing down the armature P upon the 70 magnet P', and which, when down, so tilts the lever as to release the spring or its pressure upon the sides of the tube, and thus permit the carbon A to descend toward the other carbon; but as soon as the carbons approach each 75 other sufficiently near to take the entire electric current, or such a proportion of it that the magnet cannot overcome the spring at R, then the spring acts to withdraw the armature, and thus tilt the lever at M and spring at L' and 80 cause it to compress upon the inner sides of the tube, and also to raise it slightly to the required distance to form the required arc for the light. By such an arrangement of the parts for operating the moving carbon, the resistance is reduced to a minimum in the circuit, and the lamp so constructed is peculiarly adapted to work in a series as well as by itself, and the parts are so simplified that an efficient lamp may be furnished at a minimum cost. 85 90

The electro-magnet here shown is of the old form of the U-shaped or horseshoe style; but any other form may be used, and the connections with the main circuit may be made in any of the well-known methods of making such 95 connections.

The arrangement of the parts may also be varied from those herein shown without de-

parting from the nature of my invention, for which I desire to claim—

1. In an electric lamp, the combination of the slotted tube for supporting the moving carbon with a frictional spring and its supporting-lever suspended by a second lever, which is controlled by an adjusting-spring in one direction and an electro-magnet in the opposite direction, as hereinbefore set forth.
2. The combination of the slotted tube, the spring L', and the tilting lever M, with the adjusting table or bracket S, for releasing the rod and permitting the carbon to drop, as hereinbefore set forth.

3. In an electric lamp, the combination of the reacting-spring with the shunt or high-resistance magnet for regulating and controlling the length of the arc, as hereinbefore set forth.

In witness whereof I have hereunto subscribed my name and affixed my seal in the presence of two subscribing witnesses.

THOMAS L. DENNIS. [L. S.]

Witnesses:

EUGENE N. ELIOT,
BOYD ELIOT.