(No Model.)

L. SEXAUER.

ELECTRIC LAMP.

No. 256,746. Patented Apr. 18, 1882.

Fig. 1.

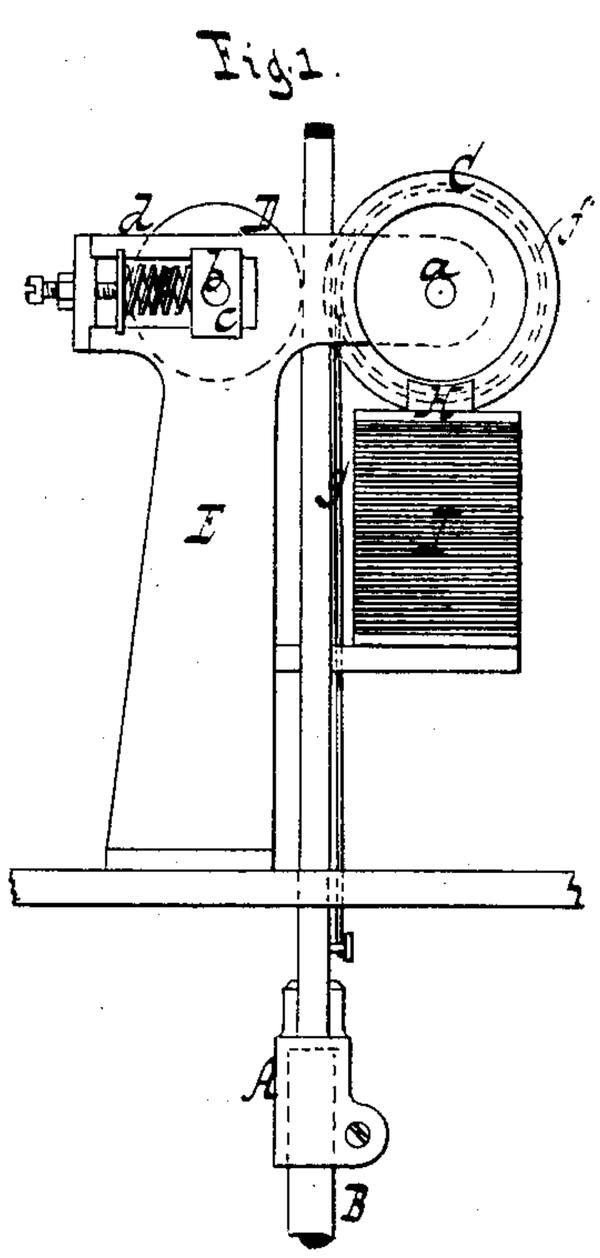


Fig. 2.

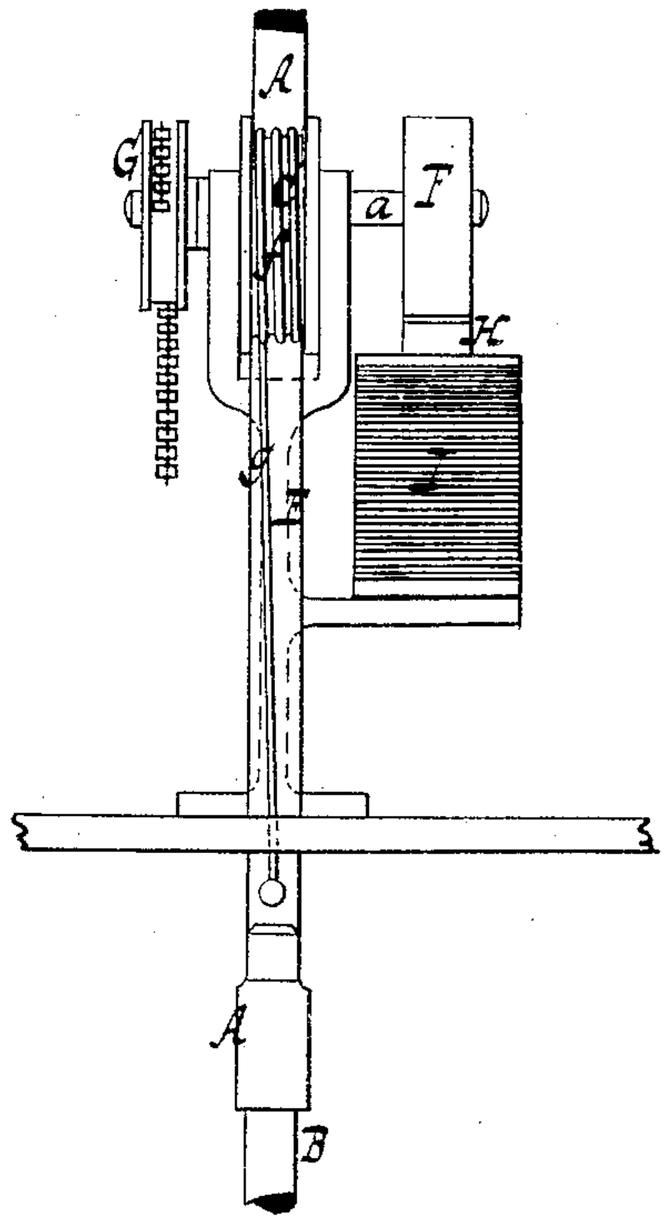


Fig. 3.

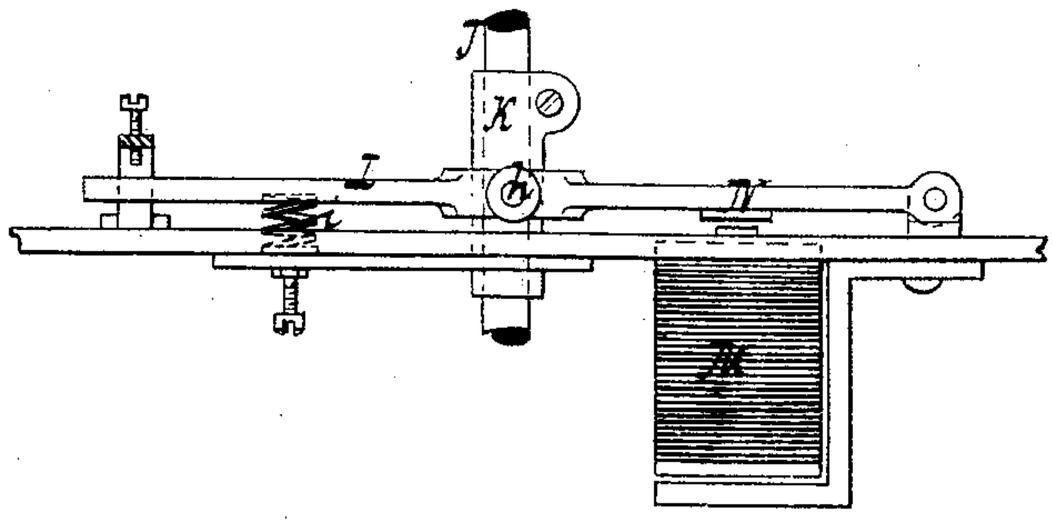
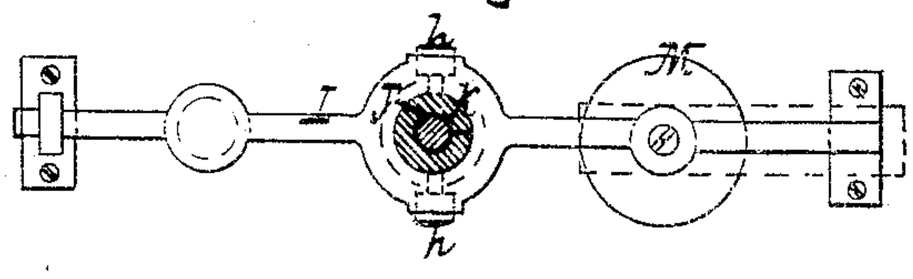


Fig. 4.



Witnesses
William Miller
Otto Hupfeld

Inventor
Louis Sexauer
by
Van Santvoord & Hauff
his Att'ys

UNITED STATES PATENT OFFICE.

LOUIS SEXAUER, OF BROOKLYN, NEW YORK.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 256,746, dated April 18, 1882.

Application filed January 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, LOUIS SEXAUER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Electric Lamps, of which the following is a specification.

This invention relates to improvements in electric lamps, and has for its object to improve the devices employed for feeding the carbons.

The invention will be first described in detail, and the improvements afterward set forth in the claims.

In the accompanying drawings, Figure 1 represents a side view of my automatic feeder for the upper carbon. Fig. 2 is a front view of the same. Fig. 3 is a side view of my device for adjusting the lower carbon. Fig. 4 is a plan or top view of the same.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the upper-carbon holder of an electric lamp. Said carbon-holder is provided at its lower end with a socket to receive the carbon stick B, and its upper portion extends through between two roller-jaws, C D. The roller C is mounted on an arbor, *a*, which has its bearing in the standard E, and on which are also mounted a brake-wheel, F, and a drum, G. The roller D is mounted on an arbor, *b*, which has its bearings in boxes *c*, fitted into slotted arms *d* and exposed to the action of springs *e*, so that by the action of these springs the carbon-holder is firmly clamped between the two roller-jaws C D, and if these rollers are not permitted to revolve the carbon-holder is sustained and prevented from sinking down. The brake-wheel F is made of iron, and with it is combined the governing electro-magnet I, the core H of which is concave at its upper end to correspond to the circumference of the brake-wheel F.

The electro-magnet I is included in the circuit of the carbons, and if the carbons are at the proper distance apart the action of the electro-magnet on its core is such that by the attraction of said core the brake-wheel F is retained in position, and thereby the roller-jaws C D are prevented from revolving, thus retaining the carbon-holder A in position; but as the carbons are consumed, or whenever, from some other cause, the force of the electric current through the helix of the electro-magnet decreases, the attractive force of the core H is reduced and the carbon-holder sinks down. As the points of the carbons approach the force of the electric current through the electro-magnet I is increased and the downward motion of the carbon-holder is stopped. The distance between the core H and the roller F must be properly regulated, and for this purpose the electro-magnet may be provided with suitable means—such as a set-screw—for moving it toward and from said roller.

The roller C is provided in its circumference with a spiral groove, *f*, which is intended to receive a cord, *g*, one end of which is fastened to the roller and the other end to the carbon-holder A. The object of this cord is to prevent the carbon-holder from slipping down when the roller-jaws are stationary, or from continuing its downward motion after the motion of the roller-jaws has been arrested.

The lower carbon, J, is secured in a holder, K, which is secured by set-screws *h* in the armature-lever L of an electro-magnet, M, Figs. 3 and 4. This electro-magnet is in the circuit of the carbons, and if the carbons are at the proper distance apart the attractive force of the electro-magnet is balanced by a spring, *i*, which acts on the lever L, and is so adjusted that it retains the armature N at a short distance from the ends of the cores of the electro-magnet, Fig. 3.

If from some cause the upper carbon moves down so as to come in contact with the lower carbon, the force of the electric current on the electro-magnet M immediately increases, the armature N is attracted against the force of the spring *i*, and the lower carbon is depressed to restore the proper distance between its point and that of the upper carbon. As the carbons are consumed the attractive force of the electro-magnet M is reduced and the armature-lever L recedes to its normal position. By these means the lower carbon is automatically retained in the proper position in relation to the upper carbon.

If the circuit through the lamp is broken, the upper carbon slides down, so as to come in contact with the lower carbon, and at the same

time the lever L, together with the lower carbon, is forced up by the spring *i*, carrying up the upper carbon a short distance. If the current through the lamp is restored, the armature L is attracted against the force of the spring *i*, the upper carbon is retained in position by the roller-clamps C D, and the lower carbon is moved down automatically to the proper distance to restore the electric arc.

I am aware that it is not broadly new to control the movement of the upper carbon in an electric lamp by means of rotary jaws and an electro-magnet or an electromotor; and I am also aware that it is not new to control the upper carbon by means of a vertically-movable brake-wheel connected with the carbon-holder and raised and lowered and held or released by an electro-magnet; but such features of themselves, or as broadly stated, do not constitute my invention.

I do not claim broadly in this application the combination of the roller-jaws and a brake operated by an electro-magnet for regulating the feed of the upper carbon, such being the subject-matter of a prior application for a patent filed by me December 28, 1881.

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

1. In an electric lamp, the combination, substantially as herein described, of a supporting-standard, two rotary jaws mounted on arbors arranged in said standard and serving to normally clamp and hold the upper carbon, and by their rotary movement permitting the carbon to descend, a cord attached to the carbon holder and wound around one of the rotary carbon holding and releasing jaws, a brake-wheel secured to the arbor of the rotary jaw, around which said cord is wound, and an electro-magnet included in the circuit of the carbons, and having a core arranged adjacent to the periphery of the brake-wheel, and by its attraction serving to retain the latter in a fixed position, essentially as and for the purpose described.

2. In an electric lamp, the combination, with a lower carbon and an electro-magnet and armature for vertically adjusting the same, of two rotary jaws mounted on arbors in a supporting-frame, and by their rotary movement permitting the upper carbon to descend, a brake-wheel arranged on the arbor of one of the rotary jaws, and an electro-magnet included in the circuit of the carbons and having a core arranged adjacent to the periphery of the brake-wheel, the current through which magnet causes its core to attract the brake-wheel and prevent the rotation of the carbon holding and releasing jaws, essentially as and for the purposes described.

3. In an electric lamp, the combination, with a vertically-adjustable lower carbon, of two rotary jaws mounted on arbors in a supporting-frame, and serving to clamp and hold the upper carbon and by their rotary movement to permit the descent of the same, a cord connected at one end with the upper carbon and at its other end wound around one of the rotary jaws, an iron brake-wheel mounted on the arbor of one of the rotary jaws, and a stationary electro-magnet included in the circuit of the carbons and having a core arranged adjacent to the periphery of the brake-wheel, the current through said magnet causing its core to attract and hold the brake-wheel until the current decreases, when the latter will be released and the rotary jaws permitted to revolve and feed the carbon downward, essentially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

LOUIS SEXAUER. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.