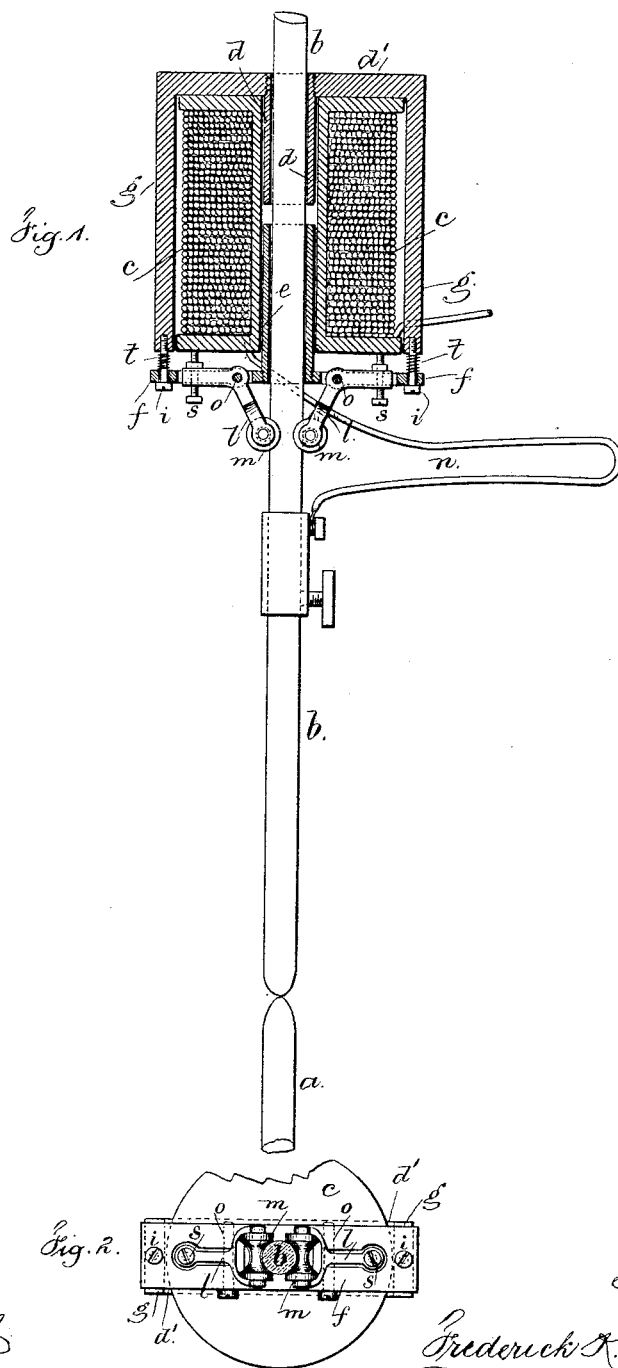


(No Model.)

F. K. FITCH.
REGULATOR FOR ELECTRIC LIGHTS.

No. 263,885.

Patented Sept. 5, 1882.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK K. FITCH, OF NEW YORK, N. Y.

REGULATOR FOR ELECTRIC LIGHTS.

SPECIFICATION forming part of Letters Patent No. 263,885, dated September 5, 1882.

Application filed February 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK K. FITCH, of the city, county, and State of New York, have invented an Improvement in Regulators for Electric Lights, of which the following is a specification.

Electric lamps have been made with axial electro-magnets through which the carbon passes, and the armature has been employed to hold or release the carbon, according to the strength of current passing through such electro-magnet to the carbon.

My invention relates to an improved clamp for holding the carbon when the proper current is passing to the lamp, and for releasing such carbon and allowing it to feed when the current is lessened by the increased length and resistance of the arc between the carbons.

In the drawings, Figure 1 is a vertical section of the electro-magnet and armature, and Fig. 2 is an inverted plan of the same.

The lower carbon, *a*, is to be held in any suitable socket, and it is to be connected with a magnet or other well-known device, by means of which the said carbon is to be drawn down when the current is applied, so as to form the electric arc. This part does not form any portion of my invention.

The upper carbon, *b*, passes through the electro-magnet and the feeding device to which my improvement relates.

The bobbin *c* is wound with insulated wire, and within it is the hollow core *d*, with the base *d'*. The core *d* only extends about half-way through the helix. The other portion, *e*, of the hollow core is connected with the armature *f*, and the ends of the armature are guided by the screws *i*, that pass into the poles *g*, and there are springs *t* around the said screws *i*, that serve to press the armature away from the poles. The poles *g* are of soft iron, and formed with or connected to the base *d'*, so as to become magnetic when a current passes through the helix and attract the armature, and under any circumstances the soft-iron core *e* will act as an axial magnet and tend to raise the armature.

The bent levers *l* are pivoted at *o* to the armature. It is preferable to make mortises in the armature for the horizontal portions of the bent levers, and to insert the pivot-pins *o* across through the armature.

The rollers *m* are made with grooves, so as to be adapted to grasp the carbon between them, and these rollers are in forks at the ends of the bent levers, and these parts are so placed that the carbon will pass vertically through the tubular axial core and between the grooved rollers *m*.

There are adjusting-screws *s* passing through the outer ends of the horizontal arms of the levers, and these screws rest against the end of the spool.

When the electric current passes through the helix, and by the flexible conductor *n* or otherwise to the lamp-carbon, the armature is attracted by the electro-magnet, and the pivots of the bent levers being moved with the armatures, and the outer ends of the levers resting by the screws on the spool, the rollers *m* are forced powerfully against the sides of the carbon, and the same is held rigidly until the electric current is lessened by the increased length of arc as the carbons are consumed, and then the springs *t* and weight of carbon cause the armature to descend sufficiently to allow the rollers *m* to relax their hold on the carbon, so that the same slides down through the electro-magnet, and the normal condition of the lamp is restored, and the increased magnetism, drawing the armature *f*, again clamps the carbon firmly.

I claim as my invention—

1. The combination, with the helix and tubular core, of the armature *f*, bent levers *l*, clamping devices, adjusting-screws *s*, and guide-screws *i*, substantially as set forth.

2. In combination with the tubular core and the carbon passing through the same, the armature *f*, the bent levers *l*, pivoted to said armature, the adjusting-screws at the horizontal ends of the levers, the grooved rollers at the other ends of such levers, the guide-screws *i* for the armature, and the springs *t* between the armature and the poles, substantially as set forth.

Signed by me this 7th day of February, A. D. 1882.

FREDERICK K. FITCH.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.