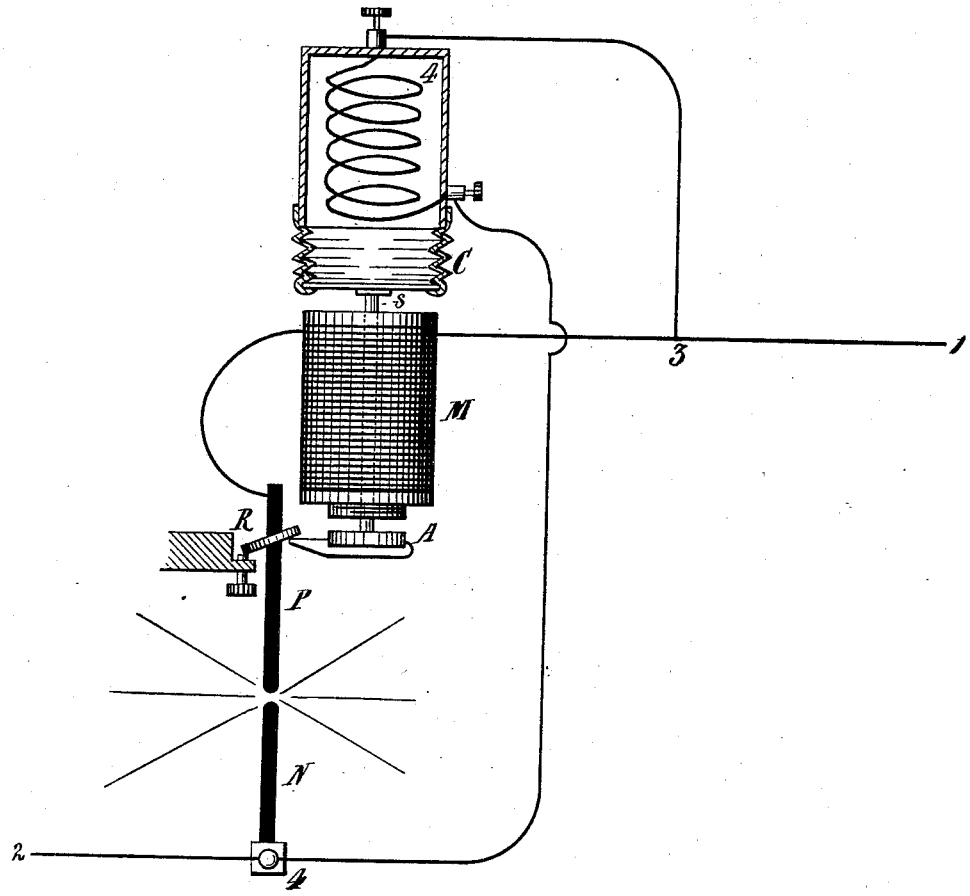
(No Model.)

T. A. EDISON.

ELECTRIC ARC LIGHT.

No. 265,775. Patented Oct. 10, 1882.



WITNESSES:

D. D. Mott

Thomas E. Birch

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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

ELECTRIC-ARC LIGHT.

SPECIFICATION forming part of Letters Patent No. 265,775, dated October 10, 1882.

Application filed November 28, 1881. Renewed August 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the County of Middlesex and State of New Jersey, have invented a new and useful Improvement in Electric-Arc Lights, (Case No. 371;) and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The object of my invention is to produce novel and effective means for regulating the feed of the carbons of voltaic-arc lamps.

In carrying out my invention I place in the main circuit, including the arc, an electro-magnet or a solenoid holding up an armature which holds up the upper carbon; and in a shunt around the magnet and carbons I place a heating-coil whose action raises and lowers the armature, opposing that of the magnet. As the length of the arc increases the resistance of the main line becomes greater and more current passes through the shunt, heating the coil therein and forcing the armature away from the magnet, so as to lower the carbon connected with the armature. The resistance is thus diminished, less current passes through the shunt, and the armature is drawn up and held by the magnet.

Convenient means for carrying my invention into effect are shown in the drawing.

1 2 is the main circuit, including the carbons P N and the electro-magnet M.

3 4 is a shunt around the carbons and magnet, including the heating-coil H.

C is an expansible chamber, the air in which is heated by the coil H, and expands and contracts as the coil is more or less heated. The chamber C is connected by a rod, S, with the armature A, so that such armature is raised and lowered by the alternate contraction and expansion of the chamber. The rod S might be the movable core of a solenoid, R, representing any suitable device operated by the movement of the armature A for regulating the feed of the carbon P.

It is evident that while the use of the expansible chamber produces an increased effect it might be dispensed with and the expansion and contraction of the coil H utilized directly.

What I claim is—

1. In an electric-arc lamp, the combination of the main circuit, containing the carbons and an electro-magnet or solenoid, with a shunt around the arc, containing a heating-coil adapted to oppose by its action the action of the magnet, substantially as set forth.

2. In an electric-arc lamp, the combination of the main circuit containing the carbons and an electro-magnet or solenoid, a shunt around the arc, containing a heating-coil, and an expansible chamber, substantially as and for the purpose set forth.

3. In regulating mechanism for electric-arc lights, the electric heating-coil and expansible inclosing chamber, substantially as and for the purpose set forth.

This specification signed and witnessed this 7th day of November, 1881.

THOS. A. EDISON.

Witnesses:
H. W. SEELY,
RICHD. N. DYER.