

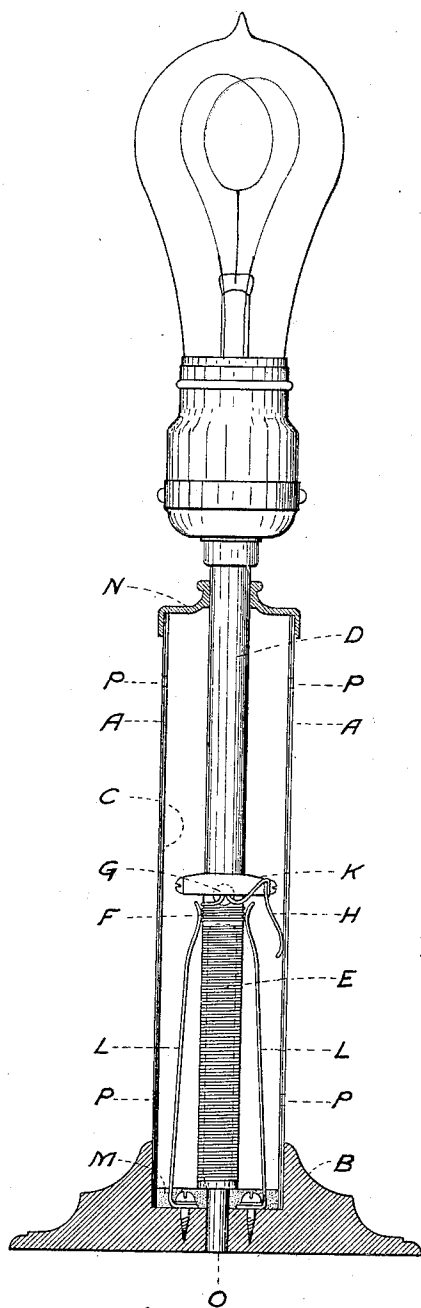
No. 651,473.

Patented June 12, 1900.

F. E. WOODFORD.
ELECTRIC LIGHT DIMMER.

(Application filed Sept. 26, 1898.)

(No Model.)



Witnesses.

G. V. Linsbach
H. Vaughan

Inventor.

Frank E. Woodford

UNITED STATES PATENT OFFICE.

FRANK E. WOODFORD, OF APPLETON, WISCONSIN.

ELECTRIC-LIGHT DIMMER.

SPECIFICATION forming part of Letters Patent No. 651,473, dated June 12, 1900.

Application filed September 26, 1898. Serial No. 691,956. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. WOODFORD, a citizen of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Electric-Light Dimmers or Regulators, of which the following is a specification.

My invention relates to that class of electric lights in which the brilliancy or intensity of the light is regulated by sliding contacts and rheostats.

My improvements are more especially adapted to incandescent lamps. Their object is to simplify the construction of the apparatus by reducing the number of its parts and to render the apparatus more easy of operation. These ends I attain by mounting the lamp directly upon, and thus causing it to move with, the support, to which a resistance-coil is also attached, and which thus moves simultaneously with the lamp, contact devices being employed with circuit connections, whereby as the lamp and the resistance-coil are moved a greater or less number of convolutions of the coil are thrown into or out of the circuit to thus vary the intensity of the light.

The subject-matter deemed patentable is set forth in the claim.

The accompanying drawing, which represents a view partly in elevation and partly in vertical central section through an apparatus embodying my improvements, shows a tubular body having its lower end inserted in a non-conducting base B, such as wood. This body is shown as consisting of two shells or tubes A C, of metal, such as brass or copper, one inside the other and each insulated from the other. Perforations P through these tubes, at top and bottom, permit air to circulate therethrough. The top of the lamp-body is closed by an insulated cap N, having a central perforation through which a lamp-support passes.

The lamp is shown as mounted on a support consisting of a tube D, of sheet metal, such as brass, which extends down through the cap N into the body of the lamp, being capable of moving endwise therein and being guided in its movements by the hole in the

cap N and by an upright central standard or guide-pin O, secured in the base B.

A resistance-coil E of well-known construction and material, such as a German-silver wire coil, is mounted upon but insulated from this supporting-tube D. The upper end of the coil E terminates in a conducting-wire F, which after making a few turns around the tube D enters it and extends upward to the lamp inside the tube, forming one of its terminals. The other terminal likewise extends downward through the tube D and makes contact with the inner tube C through contact-spring G, mounted on an insulated ring H, of fiber or like material, carried by the supporting-tube D.

Contact-springs L are secured at their lower ends in the base B and suitably insulated. The upper ends of these springs are in contact with the conducting-wire F above the resistance-coil E. These springs L are thus connected with one terminal of the lighting-circuit and the inner tube C with the other.

The drawing shows the springs L in direct contact with the circuit-wire F. The lamp is consequently burning with full brilliancy. Raising the lamp causes the support D to rise correspondingly, lifting the resistance-coil E with it, and thus gradually increasing the resistance of the circuit as it slides over the contact-springs L in a way well understood. The organization is such that, assuming the lamp to burn with sixteen-candle power in its lowest position, the light may be reduced to a half-candle power when fully elevated.

It will be observed that when the lamp is lifted the resistance-coil is also lifted, and the arrangement of the springs L is such that a greater or less number of the convolutions of the coil are included in the circuit as the lamp is raised or lowered. I preferably employ two springs L to prevent sparking, as when one spring does not make good electrical connection with the coil the other spring is apt to do so; but one spring may be employed, if desired, as the circuit can readily be made through a single spring.

I claim as my invention—

The combination of a non-conducting base, a metallic shell or casing secured thereto and rising therefrom, an incandescent electric

lamp, a supporting-tube secured to the lower
end thereof and extending down into the shell
or casing and adapted to move up or down
therein, a resistance-coil secured to the lower
5 end of the tube, a circuit-wire connecting the
coil with one terminal of the filament of the
lamp, a contact-spring bearing on the shell
or casing and connected to the other termi-
nal of the filament, a contact-spring bearing
on the coil and circuit-wires connected to the 10
casing and to the contact-spring which bears
on the coil.

FRANK E. WOODFORD.

Witnesses:

A. J. SIMPICH,
W. J. VAUGHN.