

(No Model.)

D. McF. MOORE.
ELECTRIC LAMP VIBRATOR REGULATOR.

No. 494,531.

Patented Mar. 28, 1893.

Fig. 1

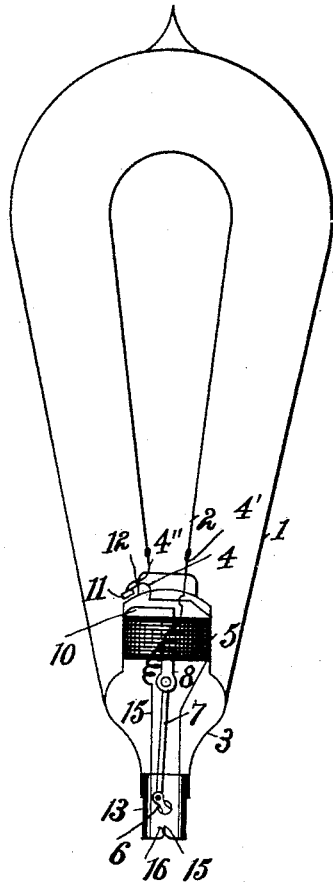
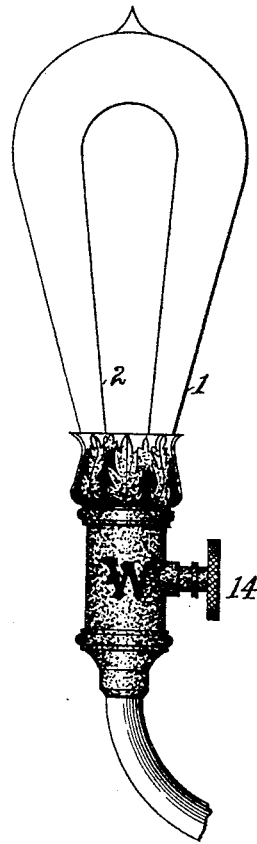


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL MCFARLAN MOORE, OF NEW YORK, N. Y.

ELECTRIC-LAMP VIBRATOR-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 494,531, dated March 28, 1893.

Application filed November 23, 1892. Serial No. 452,960. (No model.)

To all whom it may concern:

Be it known that I, DANIEL MCFARLAN MOORE, a citizen of the United States of America, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Electric-Lamp Vibrator-Regulators, (Case No. 4,) of which the following is a specification.

In former applications, namely Serial No. 420,943, filed February 10, 1892; Serial No. 439,959, filed July 14, 1892; and Serial No. 451,357, filed November 8, 1892, I have shown and described devices for the regulation of the light of incandescent electric lamps on the principle of rapid and variable interruptions of the electric current, all interruptions being so rapid as not to be discernible to the eye.

My present invention relates to an improvement upon the said devices and especially upon that forming the subject matter of my last application above named.

The details of construction are shown in the accompanying drawings.

Figure 1 is an elevation partly in section of a device involving my complete idea. Fig. 2 is a vertical elevation of a lamp equipped with my invention in order to show how it may appear in public use and none of the mechanism show.

1 is the hermetically sealed or air tight bulb; 3 the hollow glass stem supporting the leading-in wires 4, 4'; 5 an electro magnet in the stem and movable up and down therein by means of a rotary crank 6 and connecting rod 7 pivoted to the crank and to the projection of the core 8, which also projects at the opposite end to form the pole piece 10; a vibratory armature 11 in the evacuated bulb 1; and within inductive distance to the magnet 5 and in electric contact with the conductor 4'' which supports one limb of the filament 2, the armature itself being electrically connected to the leading-in wire 4, and elastically supported by the flat spring 12, so that it can vibrate to and from the conductor 4'' under the influence of the joint action of the magnet 5 and spring 12 and a ring 13 fitting in the stem 3 and forming a bearing for the

crank 6. A milled head or handle 14 is fastened to the crank and serves to turn the same when turned.

The points of contact are the armature (or conductor attached thereto) and the conductor 4''. These are located in side of the bulb where the amount of air is so slight that the filament remains uninjured during the usually long life of the lamp. Therefore, the points of contact will remain bright and effective for the purpose intended. It is well known that sparking results in a loss of current, but inasmuch as the contacts are in such a high vacuum, the sparking will be nil, and therefore, this form of regulator will regulate the light without the use of resistance except that of the magnet 5 which is insignificant. The armature need be but the size of a pin head.

The contacts in the lamp may be of carbon, and then the circuit may be varied by the variation in pressure due to the action of the magnet. The current would be vibrated or undulated instead of interrupted.

By means of the circuits shown the current may be followed to the filament 2 through the conductor 4', to the conductor 4'', to the armature 11, which is shown as one of the contacts, 4'' being the other, through the conductor 4, through the magnet 5 and again out of the device. By turning the crank, so that the magnet 5 is at its lowest position the filament is in circuit and the light is at its maximum. When the magnet is moved, by the said mechanism, to the top of the stem, so that the distance between its pole piece and the armature 11 is a minimum, the said armature will be attracted toward the magnet 5 by the force of magnetism acting through the glass of the stem 3 and the current will be interrupted. The armature will therefore spring back and close the current again, the magnet will again attract it and so on, the current being rapidly interrupted. The magnitude of the periods of interruption will be at a maximum and the light will be at its minimum. Variations of light may be obtained by variations in the positions of the magnet 5 in the stem.

The light may be extinguished by turning the crank to the lower position, when it will strike against the spring terminal 15 and separate the same from the opposite terminal 16, thereby interrupting the current.

I claim as my invention—

1. An electric lamp regulator consisting of the combination with the bulb and filament of an incandescent electric lamp, of an armature-controlled current vibrator within said bulb and in circuit with said filament, a magnet outside of the bulb and within inductive action of said armature, and means for varying the relative distance between said armature and said magnet.

2. An electric lamp regulator consisting of the combination with the bulb and filament of an incandescent electric lamp, of an armature-controlled current vibrator within said bulb and in circuit with said filament, a magnet outside of the bulb and within inductive action of said armature, and means for varying the relative distance between said armature and said magnet, said means consisting

of a movable handle and intermediate mechanism between the same and the magnet.

3. An electric lamp regulator consisting of the combination with the bulb and filament of an incandescent electric lamp, of an armature-controlled current vibrator within said bulb and in circuit with said filament, a magnet outside of the bulb and within inductive action of said armature, means for varying the relative distance between said armature and said magnet, said means consisting of a movable handle and intermediate mechanism between the same and the magnet, and a circuit interrupter having terminals *o*, *p*, and controlled by said handle.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 22d day of November, 1892.

DANIEL MCFARLAN MOORE.

Witnesses:

ROBERT S. CHAPPELL,
EDWARD P. THOMPSON.