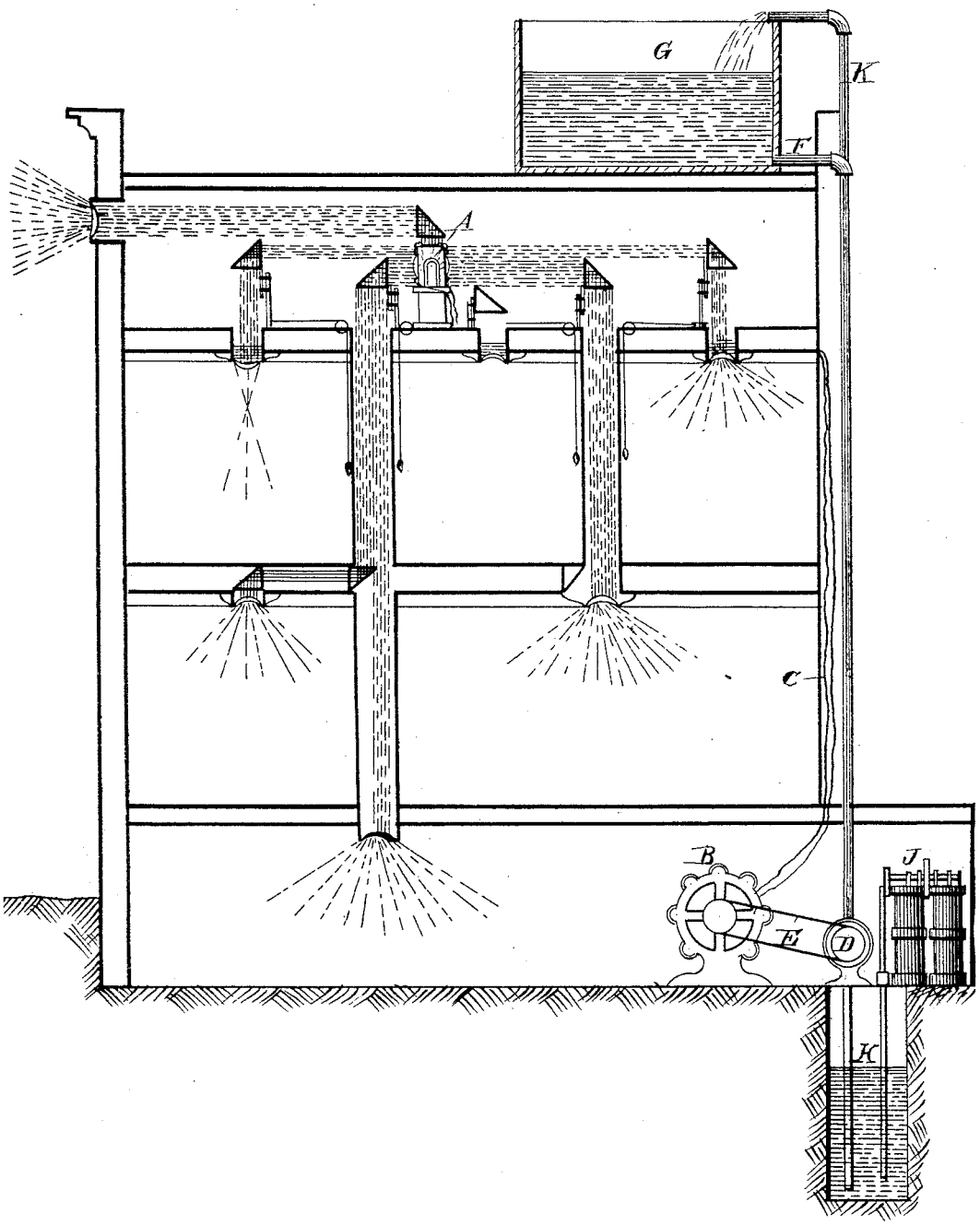
E. J. MOLERA & J. C. CEBRIAN.

Regulator for Electric-Lights.

No. 212,040. Patented Feb. 4, 1879.



WITNESSES

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EUSEBIOUS J. MOLERA AND JOHN C. CEBRIAN, OF SAN FRANCISCO, CAL.

IMPROVEMENT IN REGULATORS FOR ELECTRIC LIGHTS.

Specification forming part of Letters Patent No. **212,040**, dated February 4, 1879; application filed September 21, 1878.

To all whom it may concern:

Be it known that we, EUSEBIOUS J. MOLERA and JOHN C. CEBRIAN, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Electric Lights; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to electric lights, and is designed to provide means whereby the light thus produced may be maintained constant and unvarying in the degree of its brilliancy.

Heretofore one of the disadvantages attendant upon illumination by magneto-electric machines has been the irregularity in the intensity of the same, which results from changes in the amount or force of the driving-power of said machines.

The motors employed to actuate the latter are necessarily subject to variations in their operation, at one time working with greater speed or power than at other times; and since said motors have mechanical connection with the magneto-electric machines, it is evident that whatever irregularity may occur in their working would be directly communicated to and evidenced in the operation of said machines.

Our invention is intended to obviate this disadvantage; and to such end it consists in the combination, with a dynamo-electric machine and a hydraulic motor connected therewith, and adapted to impart motion thereto, of a pumping-engine and water-supply reservoir below the same, a reservoir located above the hydraulic motor connected with the dynamo-electric machine, and pipes leading from the pumping-engine to the lower reservoir, from the latter to the superposed reservoir, and from the latter to the hydraulic motor, whereby the dynamo-electric machine is actuated by a constant force, and the electric light maintained at any predetermined candle-power.

The drawing represents the invention applied as in use to a system of lighting by means of lenses and prisms, and the view is a vertical sectional elevation of a building fitted with the same. It represents the magneto-electric machine, together with the hydraulic motor, well, and pumping-engine, as being located in the cellar or lower story of the building, while the water-reservoir is placed in the attic of the latter.

The electric light is located at any suitable point, A, within the building, and is inclosed by lenses, the latter forming a chamber of light, from which the light is passed out in different luminous beams, each of which is composed of parallel rays. These several beams, respectively, pass through a system of prisms, by which they are deflected into suitable directions, angular to that of their first course, and are finally diffused for use in converging or diverging rays of light by passage through lenses. This system of lighting, however, forms no part of this patent, and constitutes the subject-matter of a separate application for Letters Patent.

The present invention is independent of any special system of lighting, and is applicable to all manner of use.

A magneto-electric machine, B, has wire-connections C, which communicate the electric energy developed thereby to the point of use. It is directly driven by a hydraulic motor, D, and connecting-belt E. A feed-pipe, F, provides communication between the water-reservoir G and said motor, which latter is preferably a water-wheel of any desired character. After the water performs its function of operating said hydraulic motor it falls into a well, H, from which latter it is again elevated into the reservoir by means of a pumping-engine, J, and pipe-connection K.

We do not represent in the drawing or describe herein more specifically the nature of these different devices, inasmuch as the latter may be changed and variously modified without departing from the spirit of our invention.

The magneto-electric machine, hydraulic motor, pumping apparatus, reservoir, and well, together with their connections, may all be of any suitable construction and character.

The operation of the same consists in supplying the hydraulic motor with a constant fall of water, which causes its actuating-power

to be unvarying; and hence the magneto-electric machine is driven with the same force at all times, and as a result the electric energy which is developed insures an illumination unwavering in its brilliancy.

The necessary irregularities in the working of the primary motor or pumping-engine are not sufficient to make a material difference in the quantity of water which is elevated into the reservoir, so as to practically change the level of the latter, and hence by freeing the magneto-electric machine from all mechanical connection with the primary actuating-power, and providing this intermediate system of constant water-power, the desired result is obtained, as previously set forth.

In addition to this an advantage consists in that, if the reservoir be left full when the light is extinguished, by simply turning a water-cock, L, conveniently located, the hydraulic motor may be started in motion instantly; and hence the lights may be relighted at a moment's notice, without waiting for a primary motor to generate power, as has heretofore been necessary.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In electric-light apparatus, the combination, with a magneto-electric machine and a hydraulic motor for actuating the same, of a reservoir located above the motor, and connected therewith by a pipe, and a pumping-engine adapted to elevate the water that passes through the motor to the reservoir, whereby said motor is supplied with a constant fall of water to actuate the magneto-electric machine in an unvarying rate of speed, and maintain the electric light at any predetermined candle-power, substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 7th day of September, 1878.

EUSEBIOUS J. MOLERA.
JOHN C. CEBRIAN.

Witnesses:
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J. M. AHUMADO.