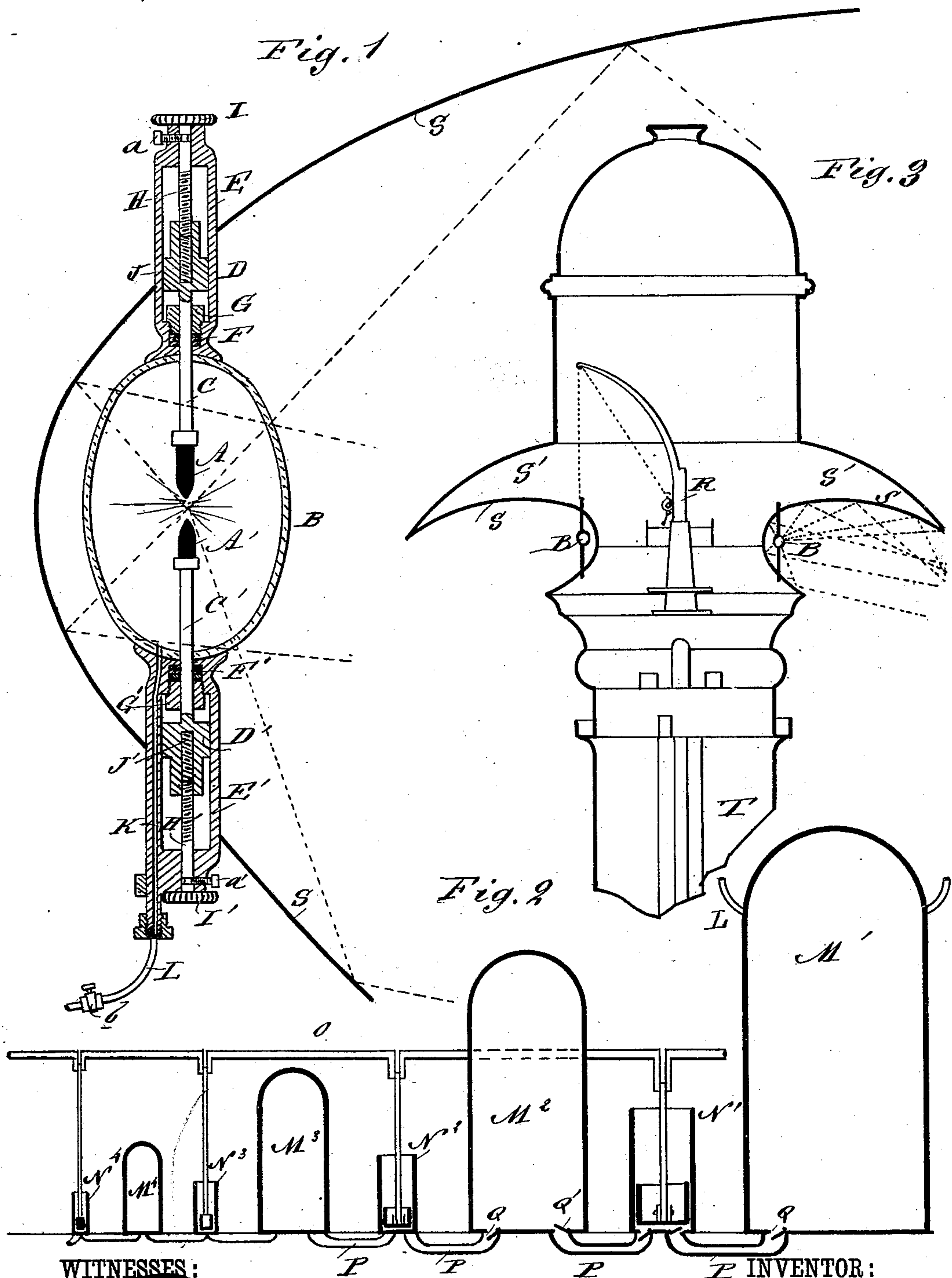


(No Model.)

A. M. G. SÉBILLOT.
ELECTRIC LAMP.

No. 253,770.

Patented Feb. 14, 1882.



WITNESSES:

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AMÉDÉE M. G. SÉBILLOT, OF DENVER, COLORADO.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 253,770, dated February 14, 1882.

Application filed November 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, AMÉDÉE M. G. SÉBILLOT, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and Improved Electric Lamp, of which the following is a full, clear, and exact description.

The object of my invention is to so combine electric lamps with a reflector and an air-exhauster that a vacuum may be continually maintained about the carbons and the rays of light reflected in a proper direction, as hereinafter described. A series of these lamps are arranged within a parabolical or like annular mirror on the top of a high tower or like structure, which mirror throws the light-rays a great distance, whereby a large space can be illuminated.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of the mirror and one of the lamps. Fig. 2 is a longitudinal sectional elevation of the combined air-pumps. Fig. 3 is a cross-sectional elevation of the upper part of the light-tower.

The carbons A A' are contained within a glass globe, B, and are attached to the carbon-holders C C', attached to pistons D D', fitting in the cylinders E E', between which the globe B is held, the ends of the cylinders fitting so closely against the globe as to form air-tight joints. The carbon-holding rods C C' pass through the packing-strips F F', held by the packing nuts or boxes G' G' in the adjoining ends of the cylinders E E', through which packing-nuts the rods C C' also pass. Threaded rods H H', provided with milled buttons I I' at the outer ends, pass into threaded apertures J J' in the pistons D D'. By turning these screw-rods the pistons and the carbon-holders and carbons can be adjusted—that is, they can be brought closer together or a greater distance apart. The screws a a' serve to lock the screw-rods H H', and consequently also the pistons and carbon-holders, in the desired position. An air-channel, K, leads down through the wall or thickness of the cylinder E' to the tube L, leading to the main tank or receiver M' of the compound air-pump, which tube L is provided with a stop-cock, b, to shut off the communication

between the globe B and the tank M', from which the air is being continually pumped, so that when the globe B and the tank M' are in communication there will be a vacuum in the globe B, and this vacuum will be maintained as the pumps are to be operated continually.

The lamp is contained within a parabolic or like mirror, S, which throws some of the light-rays down vertically, whereas others are thrown out a great distance, only slightly inclined or almost horizontally. A large mirror, S, is arranged in the form of a ring or overhanging circular cornice, S', on the top of a high tower or other very high building or structure, T, and a ring of lamps, constructed in the same manner as those described, is arranged within this mirror and below the overhang of the same, as Fig. 3 shows. As these lamps are very heavy, I have provided a central derrick, R, for lifting them.

The globe A of every lamp must be connected with the main tank M' of the compound air-pump. This compound air-pump is composed of a series of air-pumps, N' N² N³ N⁴, and as many air-tanks, M' M² M³ M⁴, which regularly and gradually decrease in size, so that the tank in which there is the least pressure—that is, the tank M'—will be the largest. The pumps decrease in size correspondingly, and are all connected with one and the same crank-shaft, O; but the cranks vary in size with the pumps. The cylinder of each pump is connected with the two tanks, between which it is located, by pipes P P.

The outlet-valves Q of the tanks open downward or outward and the inlet-valves Q' open inward or upward. I do not limit myself to any number of air-pumps and tanks in the compound air-pump; nor do I limit myself to any certain or specified arrangement in the size of the tanks and pumps. Likewise the number of lights arranged under or within the annular mirror S on the top of the tower or structure T may be limited, and the size and form of the annular mirror may be varied. This mirror is so constructed as to send the most powerfully-reflected rays at the circumference, as shown in Fig. 3.

The pumps N' to N⁴ are so constructed that the pressure of the air in the tank M⁴ will be one-tenth of an atmosphere, the pressure of the air in the tank M³ one one-hundredth of an atmos-

phere, in the tank M^2 one one-thousandth of an atmosphere, and in the tank M' one ten-thousandth of an atmosphere. The pressure in the globes B, which are all connected with the tank M' , will also be one ten-thousandth of an atmosphere only. This reduction of the pressure could not be maintained with a single pump, as the back-pressure of the air (which has one atmosphere of pressure) would not permit of such reduction; but by the first pump, N^4 , the pressure is only reduced to one-tenth of an atmosphere, and the back-pressure on the second pump, N^3 , (which rarefies the air to one one-hundredth of an atmosphere,) will only be one-tenth of an atmosphere, and in the same manner the back-pressure on the pump N^2 will only be one one-hundredth of an atmosphere, and that of the pump N' will only be one one-thousandth of an atmosphere—that is, the air is successively pumped from the globes B into the tanks M' M^2 M^3 M^4 , and its pressure gradually increases toward the first pump, N^4 . The car-

bon-holders C C' are connected with the poles of an electric generator of any suitable kind.

These lamps may also be used in private dwellings independently of the pumps, by which, however, the vacuum is created in the globes, which are then sealed, and then arranged at the desired locality.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with a reflector and air-exhauster, substantially as described, of a ring of electric lamps having opposite adjustable carbons surrounded by a transparent vessel connected with the air-exhauster, whereby the vacuum may be maintained and the rays of light reflected, as described.

AMÉDÉE M. G. SÉBILLOT.

Witnesses:

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