P. O. JENKINS.
Electric Lights.

No. 205,962. Patented July 16, 1878.

Fig 7

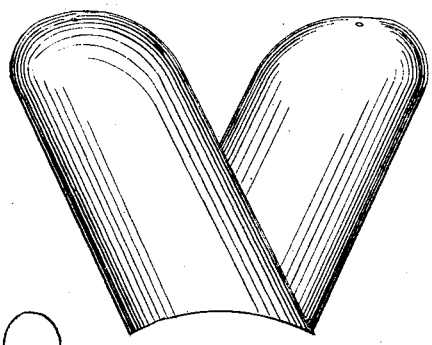


Fig 8

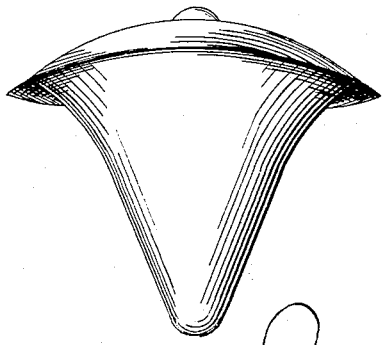


Fig 4

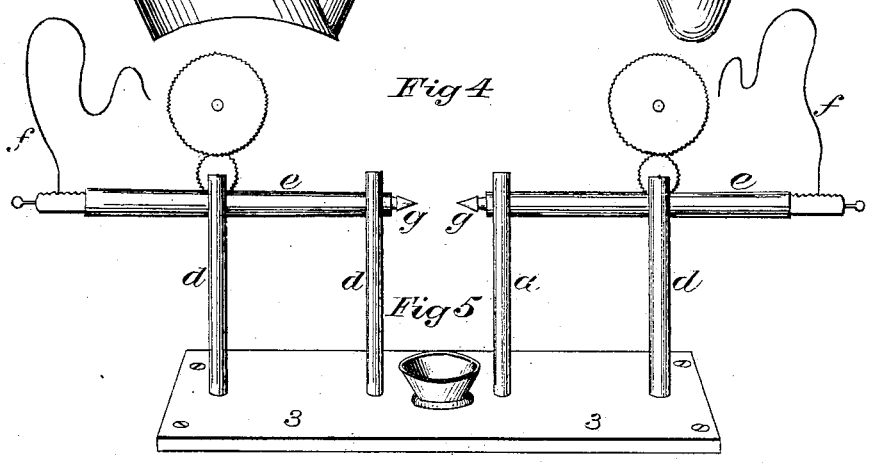


Fig 5

Fig 10

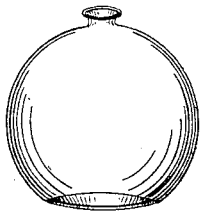


Fig 6

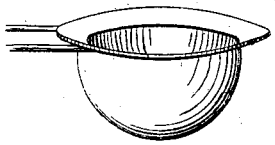


Fig 1

Fig 2

Fig 9

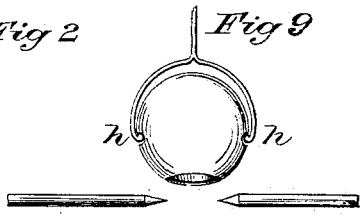
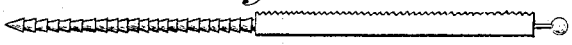


Fig 3



Attest.

Wm B Jones.
Jerm Lockwood

Inventor.

Philip Oscar Jenkins

UNITED STATES PATENT OFFICE.

PHILIP O. JENKINS, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ELECTRIC LIGHTS.

Specification forming part of Letters Patent No. **205,962**, dated July 16, 1878; application filed May 20, 1878.

To all whom it may concern:

Be it known that I, PHILIP OSCAR JENKINS, now a resident of the county and city of Washington, in the District of Columbia, have invented a new and Improved Device for the Utilization of the Electric Light, which improvement is set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to furnish a superior, constant, and yet economical light for streets, light-houses, public halls, and other buildings and places.

The difficulties hitherto encountered more or less in all the methods which have been tried in the use of this light I have met in my device, the chief of which is the necessary maintenance of the carbon points or the uniform interval between them.

Figure 1 in the annexed drawing represents a detached segment of carbon point or other suitable material, excavated, as seen at letter *a*, and in this is inserted one of like form, so that any number of them may thus be successively connected, forming a continuous cylinder of any desired length, as shown by Fig. 2. These points, when composed of carbon, have each a slit at *b* on each side extending to near the point, so that when, by the combustion caused by the voltaic arc, they become too blunt to be efficient, their sides will drop off and their places be filled by new and fresh points as fast as needed for the purpose of continuing the light without intermission. These carbon points also have at *c* lock-notches, which, by inserting and turning to the left, lock to their fellows, and are thereby held intact. Carbon points made and used after this method will maintain a constant light for an indefinite length of time, and can be manufactured with great facility. One of the points, *g g*, may be composed of platinum.

3 3 represent a platform, on which are insulated standards *d d d d*, made of wood, copper, or any other suitable material, to support and allow the movements forward of the carbon cylinder. Transversely with and inserted in these standards at letters *e e* are semi-cylinders of trough-like form, to hold the carbon points and facilitate their movement forward, to be composed of any suitable material, and insulated from said standards.

Fig. 4 represents the carbon and post, the carbon at *g g*, with segments of wire *f f* attached, and which connect the poles, said wires to be of sufficient length to allow the carbons to move forward with ease. The carbons are made to move forward by clock-work or other suitable motive power, so adjusted and connected with the carbon-cylinder as to secure the exact ratio of motion with the widening by combustion of the interval between the carbon points, by which process a new carbon point is brought into use as the one before it ceases to be efficient and the sides fall off, thus maintaining the points, and consequently a continuous light.

Fig. 5 shows a suitable vessel placed under the carbon points to receive their burning sides as they successively fall off in their combustion, thus avoiding any danger by fire.

The light being secured by these methods, it remains to meet the objection of its intensity, and of so adjusting suitable reflectors as to collect all the rays of light obtained, and so reflect them as to light up streets and other places with uniformity, and at the same time counteract the tendency to create long, widening, and disagreeable shadows from intervening objects. This latter object is obtained by primary and secondary reflectors, causing one in a degree necessary to oppose another, and, belonging to the known laws of incidence and reflection, need only be stated, as they will be used according to the priniples of those laws. Reflectors may be single or double, according to the manner in which it is desired the light shall be used.

Fig. 7 represents a double reflector with hinges, and worked by a screw or other arrangement at the top, by which the reflectors may be opened or so adjusted as to obtain the angle desired and throw the light to any desired point. They are to be placed, by suspension or otherwise, above the arc, which will make their sides luminous.

Fig. 8 represents a radius-reflector, to be placed above the arc, and, being made luminous by it, will furnish a light in every direction within a given radius.

Fig. 9 represents a sphere, made of chalk, lime, pipe-clay, zircon, or other suitable material, and of any required size, to be suspended above the arc flame (and not between the points, as in that position it would destroy or greatly retard the flowing of the current) by spring-hooks *h h*, the terminus of the hooks being platinum or other refractory substance of a bulbous form, and let into the sides of the sphere. The under portion of the sphere next the arc is excavated, and the arc flame playing upon it furnishes, by incandescence, an increased amount of light.

Nos. 10 and 6, one of globe and the other of semi-globe form, and to be constructed of ground or stained glass, porcelain, mica, or other suitable material, are used when necessary for the purpose of softening the light, No. 10 being placed around the light and No. 6 in front of a reflector.

What I claim as new, and desire to secure by Letters Patent, is—

1. The excavated carbon points *a*, Fig. 1, the carbon-cylinder, Fig. 2, the slits *b b*, and the lock-notch *c*, substantially as and for the purposes herein described.

2. The combination embracing the sphere form, Fig. 9, of lime or other refractory substance, suspended by hooks *h h* above the voltaic arc, and the arc flame applied to said sphere, contradistinguishing it from other modes of bringing said substance to incandescence, all in the manner and for the purposes herein set forth.

3. The combination of excavated carbon points *a*, with their slits *b*, and lock-notch *c*, forming the cylinder, Fig. 2, composed of continuous carbon points, with clock-work or other motive power to gradually move them forward necessary to maintain the points, and without which a full voltaic arc cannot be maintained without remission.

PHILIP OSCAR JENKINS.

Witnesses:
W. B. JONES,
GEO. M. LOCKWOOD.

1,2 & 3
rejected.