(No Model.)

A. WELSH.

ELECTRIC LAMP.

No. 299,708. Patented June 3, 1884.

Fig. 1.

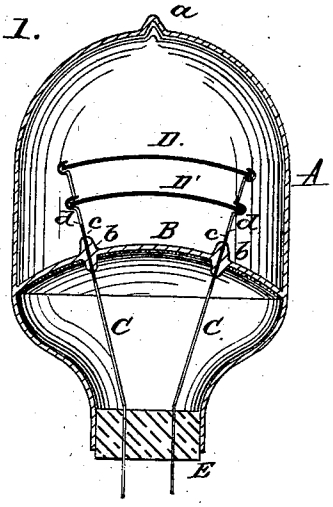
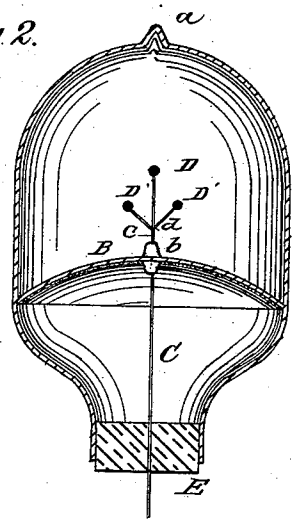


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALEXANDER WELSH, OF ST. DENIS, MARYLAND, ASSIGNOR TO THE VIADUCT MANUFACTURING COMPANY OF BALTIMORE CITY.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 299,708, dated June 3, 1884.

Application filed August 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WELSH, residing at St. Denis, Baltimore county, Maryland, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a transverse vertical section of my improved lamp. Fig. 2 is a similar view of the same, the line of section being at right angles to that of Fig. 1.

The object of my invention is to so arrange and construct the carbon filaments that the light shall resemble in appearance a flame or gas-jet, and for this purpose the wires upon which the filaments are mounted are arranged in three or more branches united to the main wire at or near the point of juncture of the platinum wire.

Referring to the drawings, A designates the globe or body of my improved lamp, which is formed from a glass tube open at both ends. The sides of the body are about straight, while its top is restricted (while the glass is in a semi-fused condition) to a small aperture at *a* when the body is severed from the stock or tube, the lower portion of the body being left open. The base B is formed in a separate piece from the body A, and is in the shape of a tube closed at its upper end by a concavo-convex portion, as shown. The lower end of the base B is restricted, so as to form an aperture to receive the plug E, which is a piece of cork, or rubber, or other suitable material. The upper part of the base B is united to the lower part of the body A by fusion. The wires C pass upward through openings in the plug E, and still further through the upper curved portion of the base B. At the points where the wires C pass through the curved portion of the base B the latter is formed with teats *b*, by which the said wires are sealed. At the points of passage of the wires C through the teats *b* said wires are of platinum, as indicated at *c*, and for this important reason that the coefficient of expansion of glass and platinum is about equal, so that the liability of fracture by expansion is reduced to the minimum. The wires above and below the teats are of copper or other suitable material. At or near the point of juncture of the platinum wires *c* with the main wires C are formed branches of wire *d*, three such branches being shown for each main wire, although the number may be increased, if desired. These wires *d* constitute the supports for the carbon filaments D D′, three of which are shown, but the number of which should always correspond to the number of branches for each main wire. One end of each filament rests upon the extremity of one of the branches of one main wire, and the opposite end of said filament rests upon the extremity of the corresponding branch of the opposite main wire, and so on throughout all of the filaments. Thus, when the lamp is operation or use, the light or focus will resemble a flame or gas-jet, and this resemblance will be heightened by employing filaments having an upward curvature, as shown.

After the lamp has been constructed as above described, the air is exhausted from the interior of the globe through the aperture *a*, and the latter is then closed by fusion, thus hermetically sealing the globe.

It will be seen that each carbon filament is separately and independently connected to the common metallic supports, so that all the filaments will be in circuit at the same time, and any filament which becomes broken or otherwise inefficient may be readily replaced by another; and, further, that there is not that care required and expense incurred in the manufacture of lamps using series of these filaments as in those multiple-filament lamps heretofore used, in which the filaments are formed as integral branches of two main carbon stems.

Having thus described my invention, I claim—

1. An incandescing electric lamp having two opposite metallic filament-supports common to a series of separate carbon filaments, all of which are at the same time in circuit through said supports, and each independent-

ly and removably connected directly thereto, substantially as described.

2. An incandescing electric lamp having two opposite branched metallic filament-supports carrying a series of separate and independently-connected carbon filaments, each of which is supported by two opposite metallic branches of the said two supports, and all in the lamp-circuit simultaneously, substantially as described.

In testimony whereof I affix my signature.

ALEXANDER WELSH.

Witnesses:
S. BRASHEARS,
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