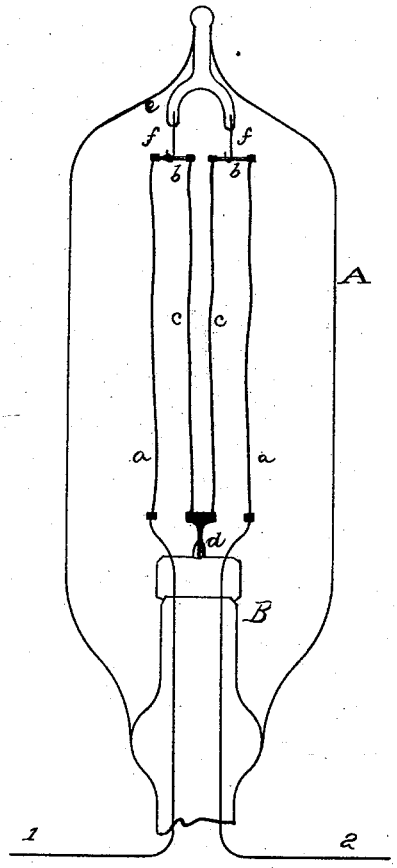
(No Model.)

T. A. EDISON.

INCANDESCING ELECTRIC LAMP.

No. 287,519. Patented Oct. 30, 1883.



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

INCANDESCING ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 287,519, dated October 30, 1883.

Application filed December 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Incandescing Electric Lamps, (Case No. 524,) of which the following is a specification.

The object of my invention is to provide for the expansion and contraction caused by the heating and cooling of the straight carbon filaments of incandescing electric lamps, in order that such expansion and contraction may not injure the filament, while at the same time the filament is held upright. To accomplish this I support the filament loosely from the top of the inclosing-globe in which it is placed, so that it will sag sufficiently to compensate for the contraction and expansion.

My invention is illustrated in the annexed drawing, which is a view in elevation of a lamp embodying said invention.

A is the glass inclosing-globe, and B is the inner stem or wire support sealed within the globe. The leading-in wires 1 2 pass through the stem B, and to their ends are attached the ends of the straight flexible carbon filaments *a a*. The other end of each filament *a* is connected by a wire, *b*, with the upper end of a similar straight filament, *c*, and the filaments *c c* are united, preferably, by electroplating, and supported from the glass of the inner stem, at *d*. A glass tube, *e*, is sealed in the glass at the top of globe A, and two wires, *f f*, terminating in hooks, extend down from said tube. Each hook supports one side of the incandescing conductor; but the wires *f f* are of such length that the filaments are held loosely, and allowed to slacken or bend when they expand under heat, and to straighten out again in cooling.

It is evident that the incandescing conductor might consist of only two straight filaments. If two were used, their upper ends would be connected by a single wire, and a single hook would depend from above to grasp the wire.

It is to be understood that all patentable features of invention described or shown but not claimed herein are reserved for protection by other patents, and have been or will be embodied in other applications for patents.

What I claim is—

1. The combination, with the incandescing conductor of an electric lamp, of one or more supports therefor, in addition to the leading-in wires of the lamp, said support or supports depending from the top of the lamp and being loosely attached to said conductor, substantially as set forth.

2. In an incandescing electric lamp, the combination of two or more straight flexible carbon filaments connected by wires at their upper ends with one or more supports loosely attached to said wires, substantially as set forth.

3. In an incandescing electric lamp, the combination, with two or more straight flexible carbon filaments united at their upper ends by wires, of wires attached to the glass of the lamp, and terminating in hooks which grasp said uniting-wires loosely, substantially as set forth.

This specification signed and witnessed this 28th day of November, 1882.

THOS. A. EDISON.

Witnesses:
H. W. SEELY,
EDWARD H. PYATT.