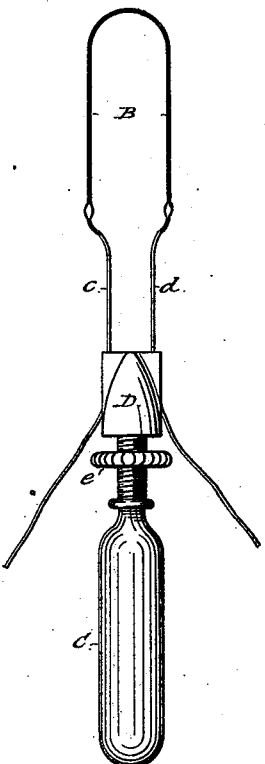
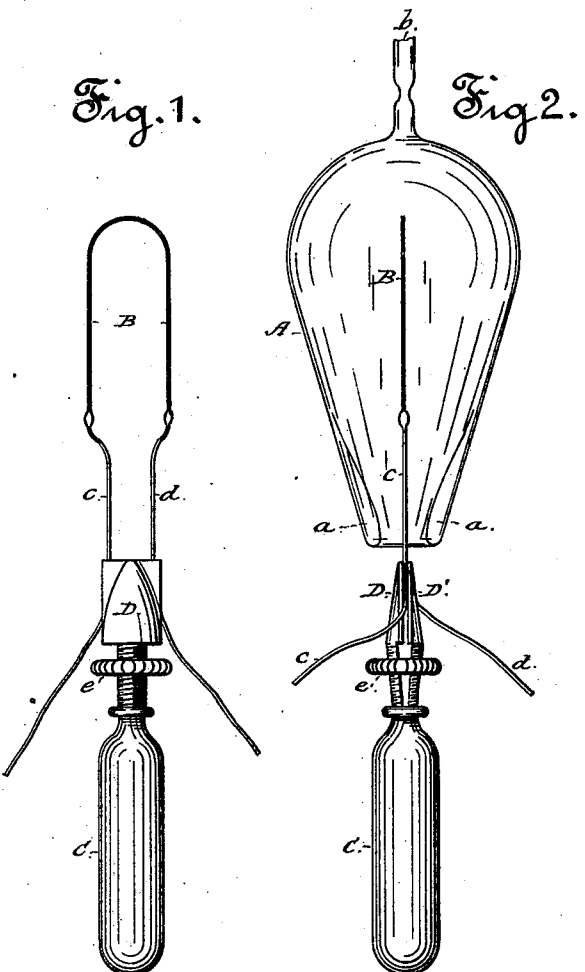
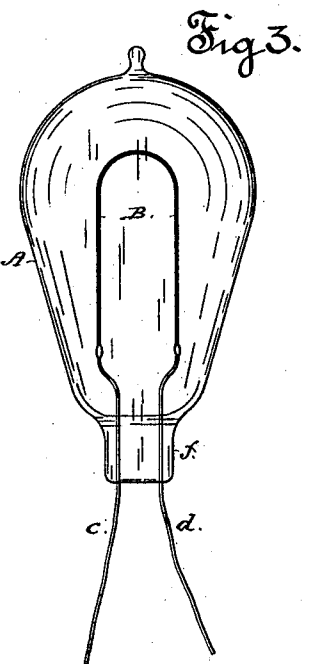
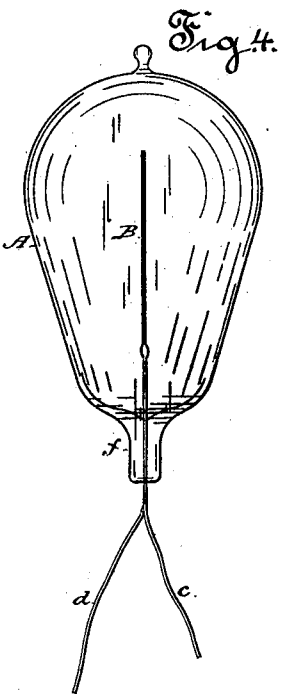


(No Model.)

T. A. EDISON.  
ELECTRIC LAMP.

No. 251,539.

Patented Dec. 27, 1881.



ATTEST:

D. D. MOTT

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per

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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.

## ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 251,539, dated December 27, 1881.

Application filed May 27, 1881. (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 Electric Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 It is desirable for some purposes or locations to provide a shorter lamp and one of simpler and cheaper construction than the incandescent lamp before produced by me. This I accomplish by sealing the leading-in wires which support the carbon directly in the lower end of the bulb, thus making the glass portion of the lamp in one piece instead of in two pieces fused together, as heretofore practiced by me. The glass bulb is blown from a tube, or directly from the pot or molten glass, in which operation the bulb is increased somewhat in thickness at its neck or lower end. The carbon is secured to the leading-in wires by means of clamps, plating, or soldering. The carbon is introduced into the lower end of the bulb, and the carbon and wires are held in the right position by means of a proper clamping-tool. The lower end of the bulb is then heated to the point of fusion, when it is compressed upon the wires, closing tightly such lower end and securing the wires therein. The bulb is then exhausted from its other end and sealed in the manner described in patents already granted to me and in former applications. By setting the bulb into a suitable socket and making the proper connections of the leading-in wires with the metal rings of the socket the lamp is completed ready for use.

40 In the drawings, Figure 1 is an elevation of the carbon and leading-in wires secured together, such wires being held by the clamping-tool which is used for introducing the carbon and wires into the bulb; Fig. 2, an elevation of the bulb, the carbon, the wires, and the clamping-tool, such carbon and wires being shown as introduced into the bulb previous to heating and compressing the same at its lower end; Fig. 3, an elevation of the lamp complete, with the exception of the socket; and Fig. 4,

a similar view when the lamp is turned one-quarter way around. 50

Like letters denote corresponding parts in all four figures.

A is the glass bulb, which is somewhat shorter than those before made by me, and has the walls of its lower open end made thicker than the body of the bulb, as shown at *a*. The upper end of the bulb is provided, as in my other incandescent lamps of this character, with a small tube, *b*, through which the bulb is exhausted. 55 60

B is the incandescent carbon, made of any suitable material; and *c d* are the leading-in wires of the lamp. The carbon is secured to the leading-in wires by means of clamps or by plating or soldering. The carbon and wires are introduced into the bulb A and held properly therein by the clamping-tool, (shown in Figs. 1 and 2,) or by any other suitable device. This tool has a handle, C, and spring-jaws D D', which spring apart normally, and are forced together by a milled nut, *e*, working on the screw-threaded shanks of such spring-jaws. The leading-in wires are grasped by this tool, and the carbon and wires held in the bulb thereby. The lower end of the bulb is then heated to the point of fusion and is compressed upon the wires, as shown at F in Figs. 3 and 4. The lamp is then exhausted and sealed, as will be well understood, and is ready to receive a proper socket. The bulb is compressed upon the leading-in wires for a sufficient distance at its lower end to form a good support for the wires, which in turn support the carbon. 65 70 75 80

What I claim is— 85

An incandescent electric lamp consisting of a glass bulb, A, formed originally with an open lower end having thickened walls, an incandescent conductor, and leading-in wires secured directly in the lower end of said bulb by the compression thereon of the thickened walls, substantially as shown. 90

This specification signed and witnessed this 17th day of May, 1881.

THOMAS A. EDISON.

Witnesses:

WM. H. MEADOWCROFT,  
H. W. SEELY.