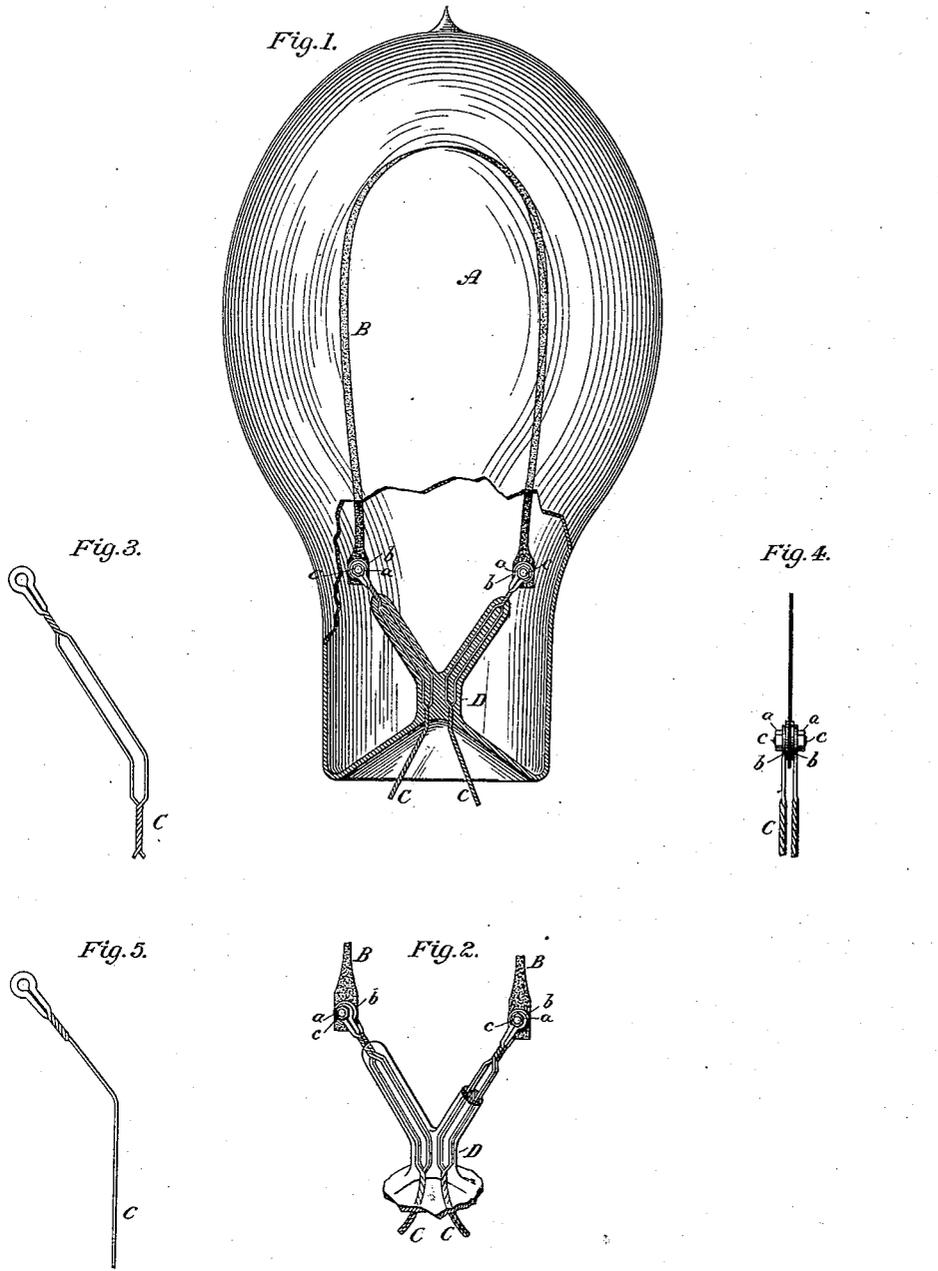


(No Model.)

E. WESTON.  
INCANDESCENT LAMP.

No. 316,094.

Patented Apr. 21, 1885.



Attest:

Almond Barnes  
W. Frisby

Inventor:

Edward Weston  
By Park W. Page  
att'y.

# UNITED STATES PATENT OFFICE.

EDWARD WESTON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF NEW YORK, N. Y.

## INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 316,094, dated April 21, 1885.

Application filed July 3, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD WESTON, a subject of the Queen of Great Britain, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

It is often desirable to construct incandescent electric lamps of much larger size and illuminating capacity than those commonly used; but many and serious difficulties are met with in their manufacture. Not the least of them are in the sealing in of the supporting-conductors and mounting or attaching the carbon strip to the same. As the carbons are much larger than those ordinarily used, and consume a much greater amount of electrical energy, the leading-in or supporting wires are necessarily larger for carrying the increased current without overheating. It has been found, however, impracticable to seal a wire of any considerable diameter in the glass or vitreous composition of which the base of the lamps is usually composed, as in such cases the expansion that takes place during the burning of the lamp impairs the contact between the glass and the metal. This difficulty has been remedied by substituting for a single large conductor two or more distinct and separate smaller conductors in the seal, a perfect and durable adherence between the glass and the metal being in this way obtained. One part of my invention relates to this method of sealing in, and is an improvement on the same.

The other part of my invention involves an improved method of attaching the wires to the carbon strip. This I accomplish by bending a wire—preferably platinum—back upon itself, forming an eye or ring, and then bringing the two parts of the wire together, preferably by twisting them. This and other features of the invention I will now describe by reference to the accompanying drawings.

Figure 1 is an incandescent lamp of the kind to which the invention is more particularly applicable, the figure being partly in side ele-

vation and partly in section, and on a somewhat reduced scale. Fig. 2 is a perspective view of the seal, showing my improvements thereon. Fig. 3 is one of the conductors of Fig. 1. Fig. 4 is an edge view of one of the conductors of Fig. 2. Fig. 5 is a modified form of Fig. 3.

Similar letters of reference indicate corresponding parts.

The lamp-globe A and the conductor B, of carbon, are similar to those used by me, and described in numerous patents granted to the United States Electric Lighting Company as my assignee. The leading-in wires C are sealed in the lamp by a mass of vitreous substance, D, united by heat to the base of the globe. Ordinarily these wires are connected to the carbon by some kind of cement, by being bent round the ends of the carbon and secured to them by the electro-deposition of copper, or by small nuts and screws and washers, the carbon being perforated and the wires provided with an eye for facilitating this. The last-named plan of mounting is the one employed by me. To form the eyes in the supporting-wires, however, I bend the wire C back upon itself, and then bring the two parts together in any convenient manner, as by twisting. In sealing the wires in I cover both parts of the wires, applying the vitreous sealing material around them as near to the eye as may be practicable. Heretofore the eyes have been formed by simply bending the end of the wire around, or by flattening and perforating it. In the first case the bent portion of the wire, being unsecured, is liable to spread and impair contact, while in the other there is not sufficient metal to conduct off the heat from the incandescent strip, so that the joints are unduly heated. These objections are obviated by my method of forming the eyes. The portions of the wire around the eyes *e* may be flattened slightly, if so desired, and secured to the carbons in the usual way by screws and nuts. The eyes may be formed in single wires, as shown in Fig. 5, or in doubled wires, as in the other figures.

When it becomes necessary to divide the

leading-in wires into several branches, I take two wires and form in each eyes by which they may be connected to the carbon. I then twist their other ends together and seal them  
 5 in the glass. The ends of the carbon are then inserted between the two wires and secured to them by nuts *a*, washers *b*, and screw *c*. The wires thus connected may be single or  
 10 double. In Fig. 2 they are doubled and branched or spread, as shown, so that a perfect seal may be obtained.

For the wires I prefer to use platinum, as this makes a better union with glass.

Having now described my invention, what  
 15 I claim is—

1. In an incandescent lamp, the leading-in wires having eyes formed by bending the wire back upon itself and uniting the two parts, in combination with a carbon conductor  
 20 and clamps for securing the same to the wires, as set forth.

2. In an incandescent lamp, the combination

of the leading-in wires, having eyes formed by bending the wire back upon itself, and the vitreous seal surrounding the two parts of the  
 25 wires, all as set forth.

3. In an incandescent lamp, the combination of the leading-in wires, having eyes formed by bending the wire back upon itself and  
 30 twisting the two parts together, and the vitreous seal surrounding the wires and extended up around the twisted portions, as set forth.

4. The combination, with the carbon conductor, of wires attached to both faces of the ends of the same, and twisted together along  
 35 a portion of their length and sealed into the vitreous material of the lamp, all as set forth.

In testimony whereof I have hereunto set my hand this 1st day of July, 1884.

EDWARD WESTON.

Witnesses:

F. N. CRANE,

R. W. BLOEMEKE.