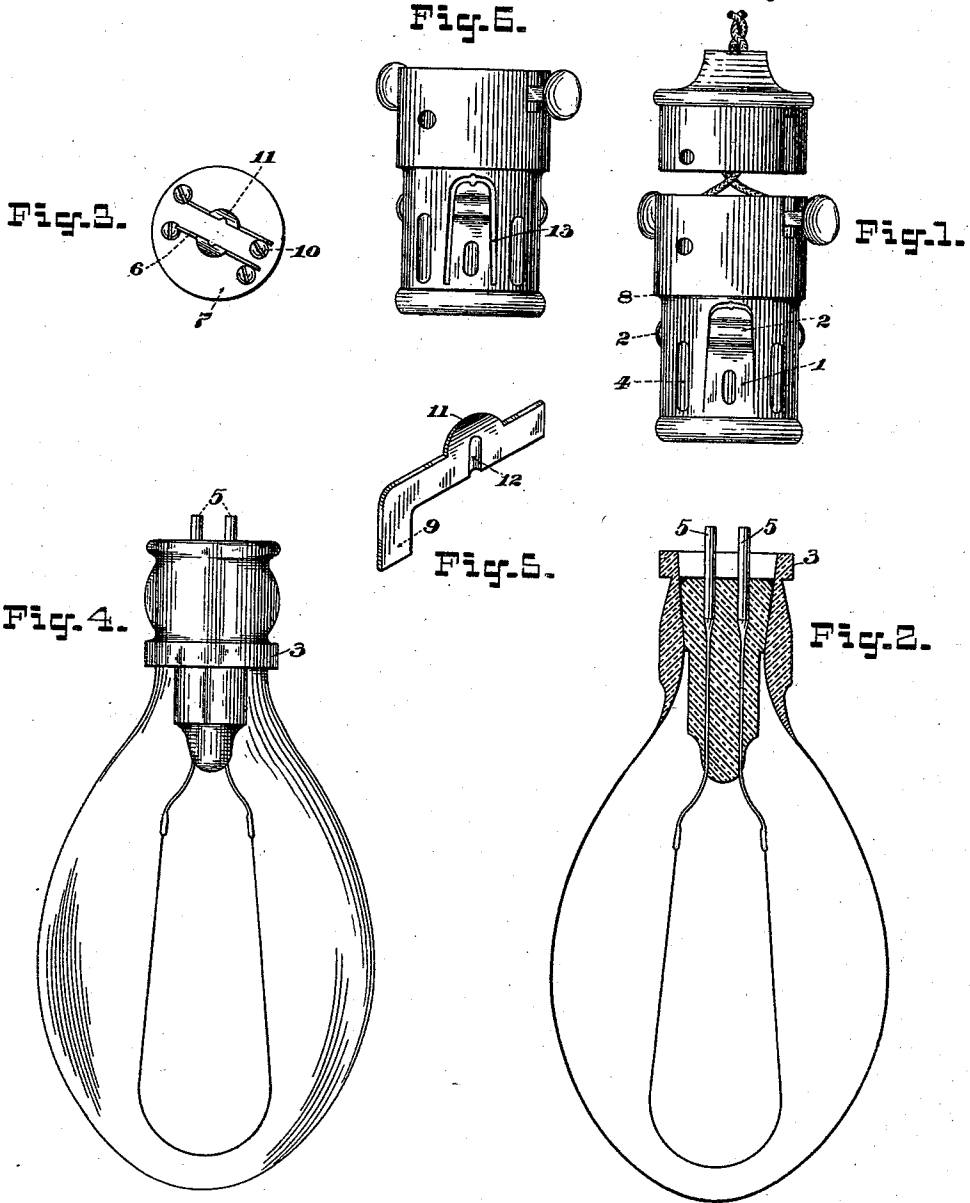


(No Model.)

G. WESTINGHOUSE, Jr.
INCANDESCENT ELECTRIC LAMP.

No. 543,280.

Patented July 23, 1895.



Witnesses *Ernest H. Henrichs*
W. C. Turner

G. Westinghouse, Jr.
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By *his* Attorney *H. Mackay*

UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, JR., OF PITTSBURG, PENNSYLVANIA.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 543,280, dated July 23, 1895.

Application filed August 29, 1892. Serial No. 444,398. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WESTINGHOUSE, Jr., a citizen of the United States, residing in Pittsburg, county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Incandescent Electric Lamps, (Case No. 502,) of which the following is a specification.

This invention relates to means whereby an incandescent-lamp bulb may be supported in its socket without the use of intervening parts, cemented or otherwise fastened to the bulb.

A further object of this invention is the provision of a socket which shall admit the air to the neck of the bulb and thus prevent its reaching too high a temperature. This ventilating feature is particularly useful in connection with those lamps wherein the neck is closed by a stopper, as the mass of glass in the neck of this form of lamp is considerable.

Another object of this invention is to render it possible to make direct contact with the leading-in wires at the socket without the use of springs or other auxiliary parts on the bulb. For this purpose leading-in wires are preferably used, having their outer ends enlarged, and when this form of leading-in wire is applied to the stopper-closed lamps above referred to they present convenient means for handling the stopper in the process of manufacture.

In the drawings, Figure 1 represents the socket with the cap slightly removed. Fig. 2 represents a stopper-closed bulb provided with my improved leading-in wires. Fig. 3 is a bottom plan view of the springs for clipping the wires and their support. Fig. 4 shows a modified form of bulb, and Fig. 5 is a perspective detail of a preferred form of wire-clipping spring.

As shown in Fig. 1, the portion of my socket which surrounds the neck of the bulb is provided with springs 1, preferably integral with the body of the socket, as illustrated, and having near their upper ends a bend 2, which is adapted to engage with a flange at the upper end of the neck of the bulb. (Shown at 3, Fig. 2.) In order to admit the air to the neck of the bulb, openings 4 are made in the side of the socket, and also, if desired, in the spring portions 1.

A modified form is shown in Fig. 6, wherein ventilation is secured by cutting away the edges of the springs at 13. Upon inserting the neck of the bulb within the socket the flange 3 opens the springs 1, which spring back into place when the flange reaches the bends 2, thus supporting the bulb in place. In Fig. 4 the flange 3 is shown near the lower end of the neck instead of at its extremity. In using this modified form of bulb the springs 1 would be inverted and the bends 2 therein would occur near the lower end of the socket for the purpose of engagement with the flange. I do not consider this latter form of bulb to be as desirable as that shown in Fig. 2, as it necessitates a greater mass of material at the hotter end of the neck.

The form of leading-in wire which I have devised is shown at 5, Fig. 2. As there seen, these wires are provided with a thickened cylindrical portion at their outer ends, a part of which is embedded in the glass. This form of leading-in wire is of special usefulness when employed with a stopper, as illustrated in Fig. 2, since the protruding ends 5 enable the workman who is finishing the stopper to hold the same with great security. A further advantage of this form of wires is found in their increased strength, whereby they form better abutments for the contact-springs on the socket.

In order to make connection with the ends of the leading-in wires, I provide two leaf springs 6. (Shown in Fig. 3.) The length of these springs lies across the bottom of the support 7 and at right angles to the normal direction of the leading-in wires. The support 7 is itself held in the upper portion of the socket and upon the shoulder 8. Fig. 5 shows, in detail, a preferred form of clipping-spring, and, as there shown, this spring is provided with a shank 9, adapted to be held within a proper cavity made in the support 7 by means of the screws 10. The yielding portion of the spring is provided with an outwardly-flaring lip 11, and beneath the lip the spring is itself crimped, as shown at 12.

It will be obvious that when the lamp is pressed in place the protruding ends 5 of the leading-in wire, being placed a little farther apart than the crimped portions of the springs when left free, engage with the lips 11 and

force the springs apart until they drop into the crimps 12.

The form of key used for turning the current on and off is immaterial, as my invention only applies to the mode of supporting the lamp-bulb and making direct connection with the leading-in wires. It will be seen, indeed, that in case of the key getting out of order the light may be turned on and off by simply revolving the bulb within the socket through an angle of ninety degrees, thus bringing the plane of the leading-in wires parallel with or perpendicular to the clipping-springs 6. Where it is necessary to place lamps in remote corners difficultly accessible this feature becomes important.

I make no claim in this application to the particular form of stopper shown in the drawings, as that forms the subject-matter of certain claims in an application of even date herewith, Serial No. 444,397.

What I claim is—

1. An incandescent lamp socket having integral leaf springs, the free ends of which extend inwardly toward the base of the socket and are provided with bends for engagement

with a flange on the neck of the lamp bulb, substantially as described.

2. An incandescent lamp-socket having a continuous outer end or rim and provided with integral springs having bends near their free ends and a bulb provided with an integral flange adapted to be supported in said bends.

3. An incandescent lamp-socket having a continuous outer end or rim and integral springs provided with bends near their free ends and containing clipping springs, in combination with a bulb having an integral flange for engagement with said bends and leading-in wires provided with thickened outer portions projecting from the seal of said bulb and adapted to engage with said clipping springs.

In testimony whereof I have hereunto subscribed my name this 25th day of August, A. D. 1892.

GEO. WESTINGHOUSE, JR.

Witnesses:

ERNEST H. HEINRICHS,
HAROLD S. MACKAYE.