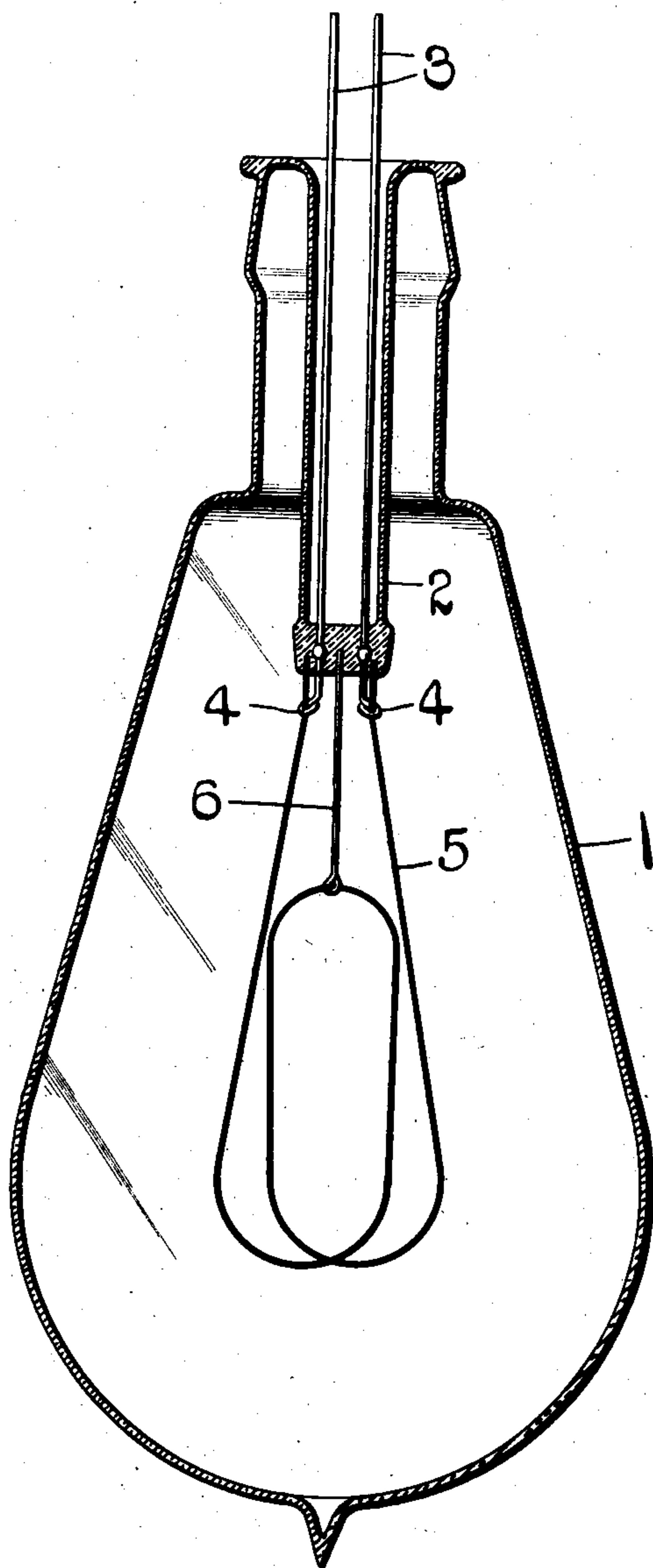


No. 834,990.

PATENTED NOV. 6, 1906.

G. P. McDONNELL.
INCANDESCENT ELECTRIC LAMP.
APPLICATION FILED SEPT. 1, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE P. McDONNELL, OF ST. LOUIS, MISSOURI, ASSIGNOR TO AMERICAN ELECTRIC COMPANY, OF EAST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

INCANDESCENT ELECTRIC LAMP.

No. 834,990.

Specification of Letters Patent.

Patented Nov. 6, 1906

Application filed September 1, 1905. Serial No. 276,729.

To all whom it may concern:

Be it known that I, GEORGE P. McDONNELL, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Incandescent Electric Lamps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the figure represents a sectional view of my improved incandescent electric lamp.

15 This invention relates to a new and useful improvement in incandescent electric lamps, the object being to dispense with the paste joint that is usually employed between the inlead-wires and the carbon filament.

20 With this object in view the invention consists in the construction, arrangement, and combination of the several parts, all as will be hereinafter described, and afterward pointed out in the claims.

25 In the drawing, 1 indicates the bulb or globe into whose neck portion is sealed the usual filament support or stem 2.

3 indicates the copper inlead-wires, and 4 the platinum inlead-wires electrically connected to the copper wires 3 and over which connection the glass constituting the closed end of the stem 2 is fused.

5 indicates the carbon filament, and 6 the usual anchor wire therefor.

35 In assembling the parts the flanged tube constituting the stem 2 is fused at one end and pressed about the joints between the copper wires 3 and the platinum wires 4, as usual. At the same time the anchor wire or

40 wires 6 are inserted in the molten glass. The ends of the platinum wires 4 are then preferably formed with eyes, as shown, and bent to one side. The fused end of tube 2 is then heated and the ends of the carbon filament 5 inserted close to the platinum wires 4. After the glass is cooled off the eyes of the platinum wires are arranged over the filament some distance from the fused end of the glass stem and clamped upon the filament. Should the

45 carbon filament not be properly centered with respect to the stem 2, the platinum wires can be bent, which bent position they

will retain and in that manner exert pressure on the carbon filament tending to hold it in its central position. Indeed, even though the carbon filament is properly centered with respect to the stem 2 it is desirable to slightly deflect the same by bending the projecting ends of the platinum wires, but not so as to disturb their central position, so that the tension under which the carbon filament is placed by being so deflected will insure good electrical contact between the eye of the platinum wire and the carbon filament. It is also desirable to locate the connection between the platinum wire and the carbon distant from the glass stem 2, because by so doing the solid end of the glass stem where the ends of the carbon filament are mounted will not be subjected to severe variations in temperature or to an intensive heat which would tend to crack or break the same.

In the construction shown in the drawing the electric current will not pass through the filament 5 above the eyes of the platinum wire, and consequently the filament will not be heated to a state of incandescence in proximity to its glass mount and being a poor conductor of heat will not transmit a sufficient heat to cause the glass mount to crack.

80 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In an incandescent electric lamp, the combination with a carbon filament, a mount into which said filament extends for supporting said filament in position, and inlead-wires extending through said mount and connected directly to said carbon filament some distance from said mount; substantially as described.

2. In an incandescent electric lamp, the combination with a carbon filament whose extremities are embedded in a glass mount which forms a support for said filament, and inlead-wires sealed in the glass constituting said filament-support and electrically connected to said filament some distance from the ends of said filament; substantially as described.

3. In an incandescent electric lamp, the combination with the bulb and its stem, of a carbon filament whose ends are embedded in the ends of said stem, and inlead-wires pass-

ing through and sealed in said stem and connected to said carbon filament at points remote from the ends thereof; substantially as described.

5 4. In an incandescent electric lamp, the combination with a bulb and its stem, of a carbon filament whose ends are embedded in said stem, wires for conducting an electric
10 current to said carbon filament, at points remote from the embedded ends thereof, said wires laterally deflecting said carbon filament so as to make better electrical contact; substantially as described.

15 5. In an incandescent electric lamp, the combination with a glass bulb and its stem, of a carbon filament whose ends are embedded in said stem, inlead-wires passing through said stem adjacent the embedded ends of said carbon filament, said inlead-wires being
20 clamped upon said filament at points distant

from said embedded ends; substantially as described.

6. In an incandescent electric lamp, the combination with a glass bulb and its stem, of a carbon filament whose ends are embed- 25 ded in said stem, inlead-wires passing through said stem and being formed with eyes at their extremities which embrace the legs of said carbon filament at points distant from the embedded ends thereof, said projecting 30 inlead-wires being bent so as to deflect the legs of said carbon filament; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, 35 this 25th day of August, 1905.

GEORGE P. McDONNELL.

Witnesses:

F. R. CORNWALL,
CORA BADGER.