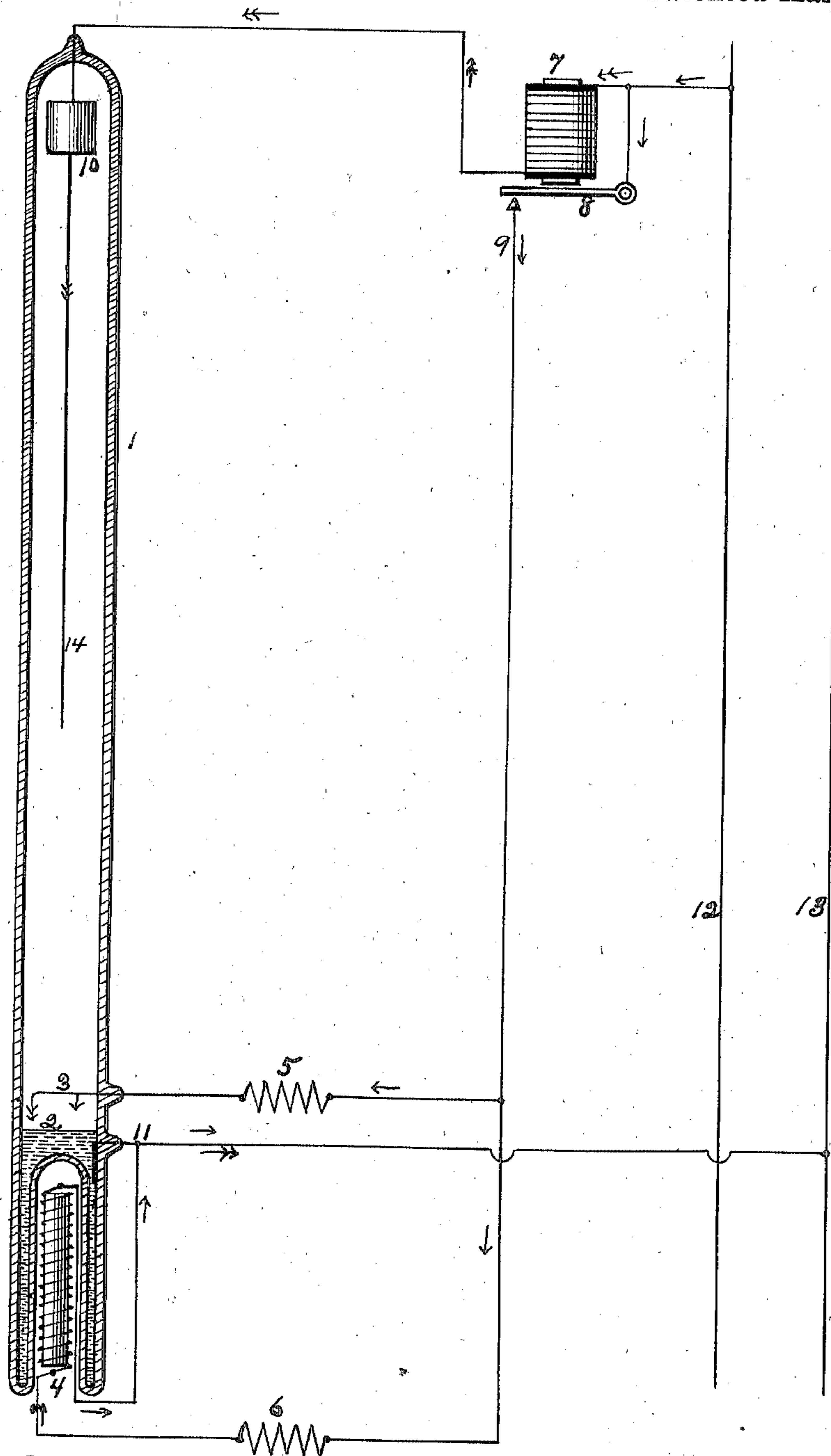


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W. ANCK, ADMINISTRATOR.  
ELECTRIC MERCURY ARC LAMP.  
APPLICATION FILED MAY 13, 1904.

950,760.

Patented Mar. 1, 1910.



WITNESSES

*Strode Jeffers*  
*Thomas J. Bradley*

INVENTOR

*John M. Anck.*

# UNITED STATES PATENT OFFICE.

JOHN M. ANCK, OF PHILADELPHIA, PENNSYLVANIA; WILLIAM ANCK, ADMINISTRATOR OF SAID JOHN M. ANCK, DECEASED, ASSIGNOR OF ONE-TWELFTH TO JOHN A. WIEDERSHEIM, ONE-TWELFTH TO WILLIAM CANER WIEDERSEIM, ONE-TWELFTH TO E. HAYWARD FAIRBANKS, AND ONE-FOURTH TO WILLIAM STEELL JACKSON, ALL OF PHILADELPHIA, PENNSYLVANIA.

## ELECTRIC MERCURY ARC-LAMP.

950,760.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed May 13, 1904. Serial No. 207,849.

*To all whom it may concern:*

Be it known that I, JOHN M. ANCK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Electric Mercury Arc-Lamps, of which the following is a specification.

This invention consists of an improvement in electric mercury arc lamps, as will be hereinafter fully described and claimed.

One of the objects of my present invention has been to produce a starting device for electric mercury arc lamps, using a low voltage current and dispensing with a high voltage current produced by an induction coil for starting an arc in the tube as heretofore constructed. I secure this result by using a heater to heat the mercury contained in the tube as one electrode, and in doing so I vaporize part of the mercury, and at the same time cause the mercury to boil, which jumps in contact with an electrode sealed in the tube that causes an arc to be formed which instantly flashes through the tube and causes a conducting path for the electric current in the mercury vapor.

Referring to the drawings: 1 is a sealed glass tube exhausted of air to a partial vacuum, 2 is mercury inclosed in said tube as one electrode, 3 is an arc forming electrode, 4 is the electric heater, 5 and 6 is resistance in the sparking circuit and heater circuit, 7 is an electromagnet in the main circuit of the tube, 8 is the armature in circuit with the heater, and arcing electrode, and is adapted to be moved out of contact with the side branch wire 9 when the main circuit is passing through the tube, and maintaining the arc, 10 is the upper main circuit electrode composed of graphite iron or platinum, 11 is an electrode sealed in the glass contacting with the mercury, 12 and 13 are the line wires, 14 is a carbon or platinum wire attached to electrode 10 which assists

in starting the current through the main tube.

The operation of the lamp is as follows:— The circuit, as shown in the drawing, is closed and the main circuit is operating through the tube; the side branch is shown cut out. When the circuit is closed the current first flows through the circuit shown by single arrows, and the resistance 6. The heater 4 heats the mercury 2 and brings it to boil, causing an intermittent make and break with the arcing electrode 3 and forming an arc which instantly flashes through the tube to the terminal 10 and so establishes the arc in the tube. The cut-out magnet 7 in the circuit 10 and 11 of the main tube shown by double arrows operates the armature 8 and cuts out the two side branches when the arc has been established in the main tube.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In an electric mercury arc lamp, a tube, mercury contained in said tube, an arcing electrode above said mercury, an electric heater adapted to boil and vaporize said mercury, and cause contact with the arcing electrode.

2. In a starting device for an electric vapor lamp, spaced electrodes of which the lower one is mercury, an intermediate arcing electrode, an electric heater for said mercury electrode, line wires connected to the electric heater terminals, a connection between one of said line wires and the intermediate terminal, an armature in the connection between the intermediate electrode and the line wire, and an electrode-magnet controlling said armature and connected between the last named line wire and the upper of the spaced electrodes.

JOHN M. ANCK.

Witnesses:

THOMAS J. BRADLEY,  
HARRY E. PARK.