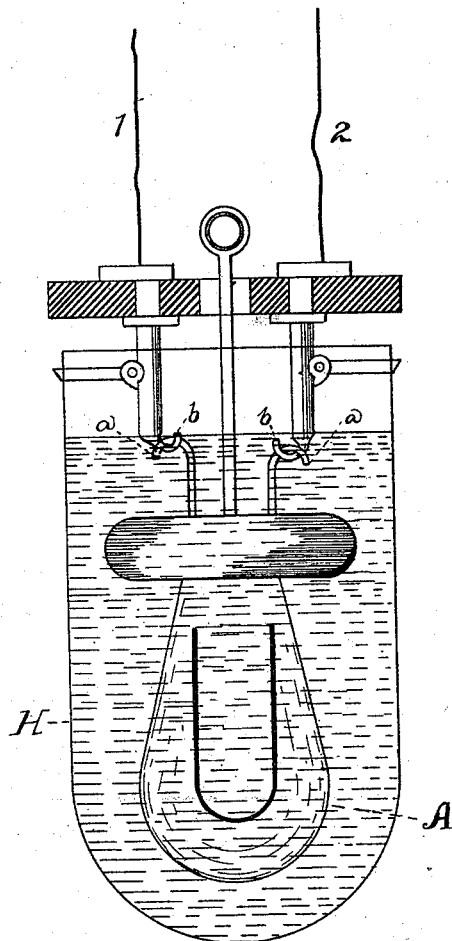


(No Model.)

T. A. EDISON.  
INCANDESCING ELECTRIC LAMP.

No. 264,655.

Patented Sept. 19, 1882.



WITNESSES:

*E. C. Rowland,*  
*Witness*

INVENTOR:

*Thomas A. Edison,*  
*By Rich<sup>d</sup>. S. Dyer,*  
*Att<sup>y</sup>.*

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY.

## INCANDESCING ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 264,655, dated September 19, 1882.

Application filed August 7, 1882. (No model.) Patented in England September 27, 1881, No. 4,174; in Italy November 9, 1881; in France December 5, 1881, No. 145,554; in Canada December 14, 1881, No. 13,835, and in India January 18, 1882, No. 74.

*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 Incandescing Electric Lamps, (Case No: 444;) and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

In the use of incandescent electric lamps it is exceedingly convenient in some cases to have the leading-in wires of a lamp attached to the conductors in such a manner that they may be readily connected or disconnected at will, in order that a lamp may be used in one place or another, as desired. Such connecting and disconnecting of electrical conductors, however, produces a considerable spark, which in some locations—especially in mines, flouring-mills, powder-mills, or other places where explosions are likely to occur—would be very dangerous.

The object of this invention is to so arrange a lamp of this kind that all danger from the spark will be avoided. I accomplish this by submerging the points at which the connection is made in a transparent liquid not ignited by the spark. Glycerine is suitable for the purpose, it not being decomposed by the action of the current. The wires are preferably electrically insulated with a substance impervious to the liquid—such as rubber—so that only the points at which contact is made are exposed. The escape of electricity across from one conductor to the other at the exposed points will be quite inconsiderable.

A convenient form of my invention is shown in the accompanying drawing, which is a view thereof in elevation.

A is an incandescing electric lamp placed in a vessel, H, made entirely of glass or having one or more glass sides, and filled with glycerine or other suitable liquid. The lead-

ing-in wires *a a* of the lamp are formed into hooks, as shown, which engage with hooks *b b* connected with the conductors 12. Instead of two pairs of hooks, either pair could be rings or eyes and the other hooks. A weight, *c*, preferably a lead ring dropped over the neck of the lamp, is used to maintain good connection and to keep the lamp in a vertical position. The wires, except the hooks, should be coated with an insulating substance impervious to the liquid used.

It will be seen that the lamp can be readily connected and disconnected, and that any spark produced thereby, being in liquid, will not be liable to ignite any gases, flour-dust, or other inflammable substance which might exist in the neighborhood.

Instead of keeping the connections constantly submerged in liquid, they may be made and broken in a water-jar, but may be removed therefrom after being made, since no spark occurs, except on the making or breaking of the circuit.

What I claim is—

1. An incandescing electric lamp the leading-in wires of which are connected removably with the conducting-wires, the connections being submerged in liquid, substantially as set forth.

2. An incandescing electric lamp the leading-in wires of which are connected by hooks or hooks and eyes with the conducting-wires, such hooks or hooks and eyes being submerged in liquid, and the wires being insulated, except at the points of contact, with a coating impervious to the liquid, substantially as set forth.

This specification signed and witnessed this 9th day of June, 1882.

THOS. A. EDISON.

Witnesses:

RICHD. N. DYER,  
EDWARD H. PYATT.