

No. 677,238.

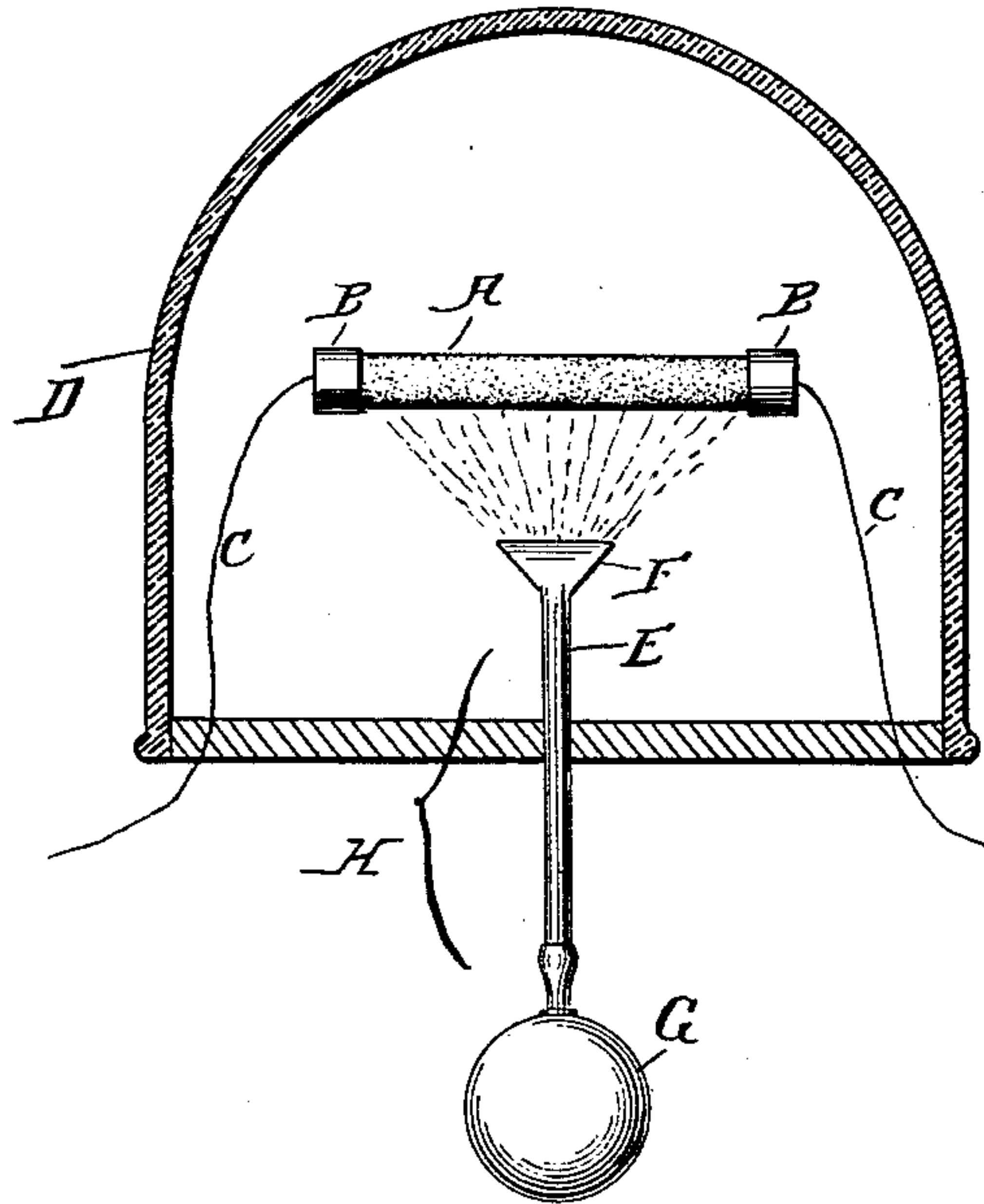
Patented June 25, 1901.

I. KITSEE.  
INCANDESCENT LAMP.

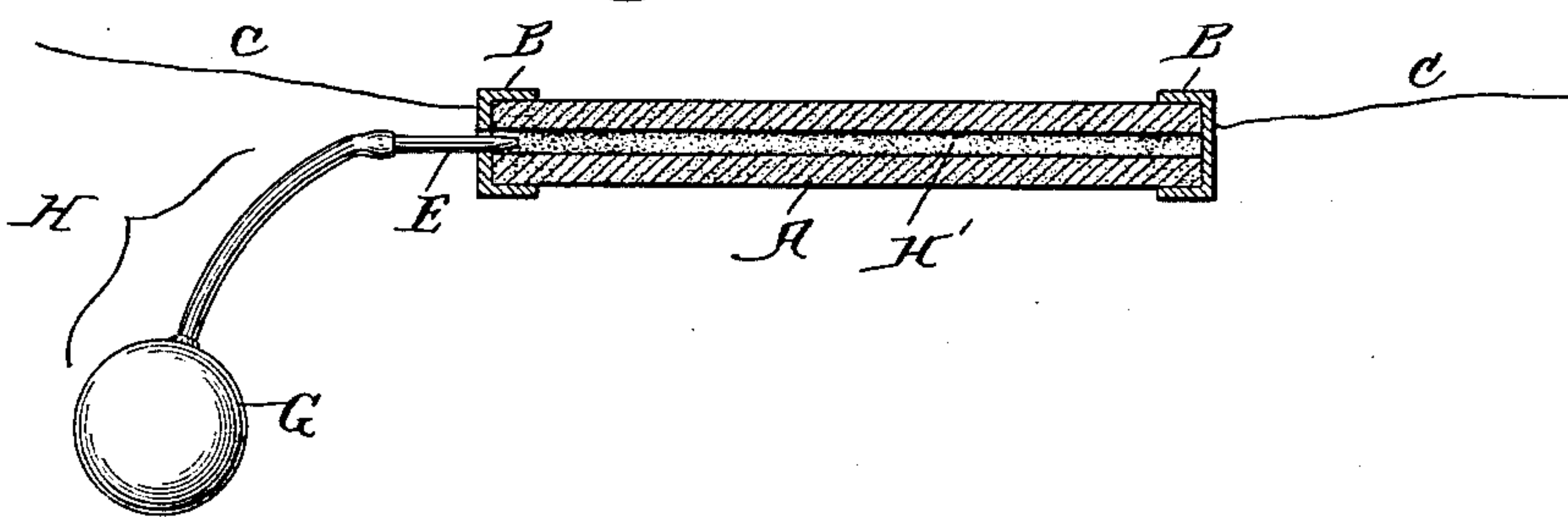
(Application filed Mar. 2, 1900. Renewed Apr. 23, 1901.)

(No Model.)

*Fig. 1.*



*Fig. 2.*



Witnesses:  
H. B. Hallock.  
E. R. Stille.

Inventor.  
*I. Kitsee*

# UNITED STATES PATENT OFFICE.

ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA.

## INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 677,238, dated June 25, 1901.

Application filed March 2, 1900. Renewed April 23, 1901. Serial No. 57,157. (No model.)

*To all whom it may concern:*

Be it known that I, ISIDOR KITSEE, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification.

My invention relates to an improvement in incandescent lamps, and has more especial reference to incandescent lamps wherein a material is used capable of conducting the electric current when heated. In these lamps the pencil designed to become incandescent consists generally of an oxid of one of the rare metals—such as zirconium, thorium, yttrium, cerium, &c. Even though there is a great advantage in the economy of the electric current consumed, these lamps are not generally used, for the reason that the primary process of heating the filament has involved so far great difficulties; and the object of my invention is to provide such lamps with means whereby the resistance of the pencil is temporarily reduced for the purpose of raising the temperature of this pencil through the passage of the electric current.

Referring to the drawings, Figure 1 is a plan view of an incandescent lamp embodying my invention, and Fig. 2 is a sectional view of the pencil as illustrated in Fig. 1 with a slight modification.

A is the pencil designed to become incandescent. B B are the terminals to which said pencil is secured; C C, the circuit-wires; D, the globe around said pencil, and H the spraying apparatus, of which G is a compressible bulb, E the tube, and F the perforated part.

In my experiments I have found that if the pencil, formed of a material normally non-conducting at a low, but conducting at a high, temperature, is moistened with a solution acidulated even to the lowest degree or containing in solution a slight percentage of metallic salt this pencil becomes a partial conductor, and the passage of the current will raise the temperature of the pencil to such a high degree that the moisture will evaporate and will leave the pencil at a temperature sufficiently high for the passage of the current even after the moisture has entirely dis-

appeared. The *modus operandi* in lighting this pencil is as follows: The bulb G is filled with water, preferably with a slight addition of a metallic salt, sulfate of magnesium preferred. The switch connecting the pencil to the circuit is then closed and the pencil sprayed with the liquid. In a short time the moisture will have been evaporated and the high temperature of the pencil will allow the current to flow through, making the same incandescent.

Fig. 2 is a slight modification for applying the spraying apparatus. Instead of being provided with a spraying end F, as shown in Fig. 1, the tube E is inserted in the center cavity H', with which the pencil is provided.

The *modus operandi* is the same in Fig. 2 as in Fig. 1.

I have not shown any of the mechanical devices which may be employed in conjunction with the spraying device or any of the different alterations, as the same will suggest themselves readily to persons versed in the art.

In my experiments I used as a spraying liquid sometimes acidulated water acidulated with one per cent. of acid, at other times water having in solution two per cent. of sulfate of magnesium, and in all cases the result was satisfactory.

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

1. The method of lowering the resistance of an incandescent lamp, consisting of a material non-conducting at low, but conducting at high temperatures, which consists in moistening the material designed to become incandescent with a liquid conductor of electricity.

2. The method of lowering the resistance of an incandescent lamp, consisting of a material non-conducting at low, but conducting at high temperatures, which consists in providing the material designed to become incandescent with a moist spray.

3. The method of lowering the resistance of an incandescent lamp, consisting of a ma-



terial non-conducting at low, but conducting  
at high temperatures, which consists in mois-  
tening the normally dry material, designed  
to become incandescent, with a liquid capable  
5 of imparting to said material a conductivity  
it formerly did not possess.

In testimony whereof I hereby sign my

name, in the presence of two subscribing wit-  
nesses, this 26th day of February, 1900.

ISIDOR KITSEE.

Witnesses:

E. R. STILLEY,

W. B. ELDRIDGE.