

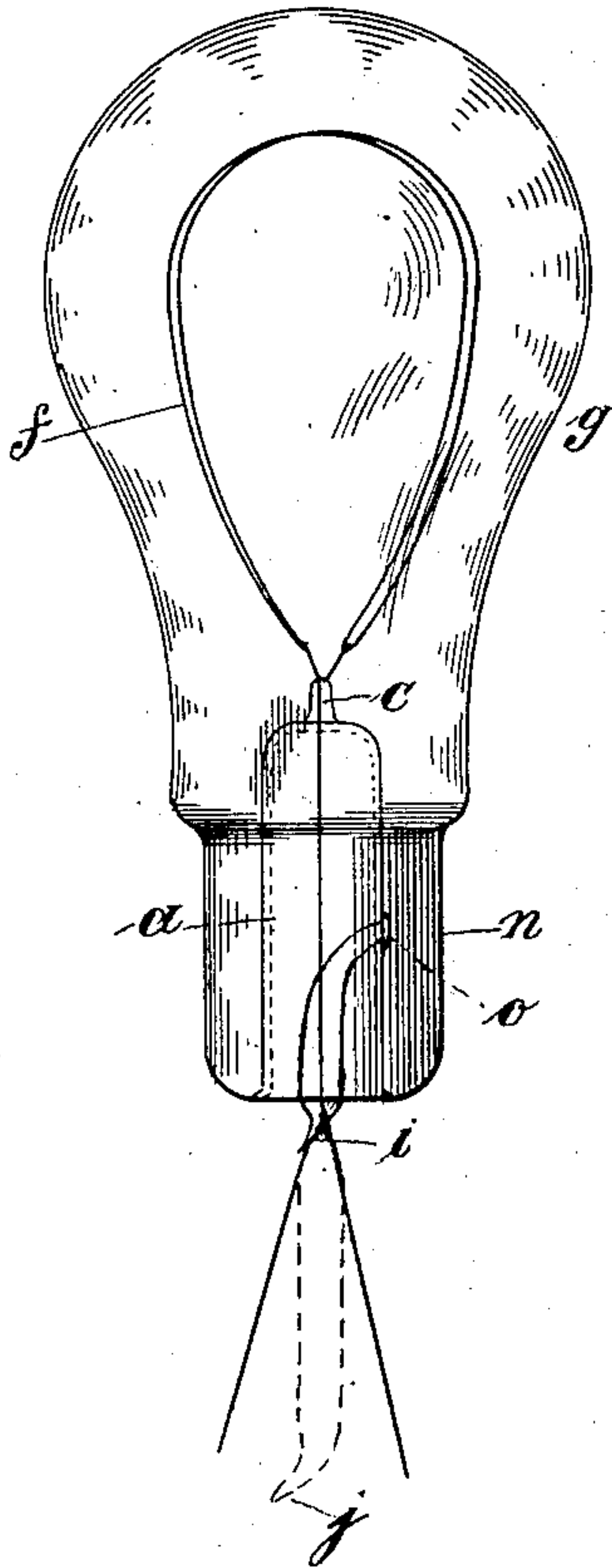
No. 729,182.

PATENTED MAY 26, 1903.

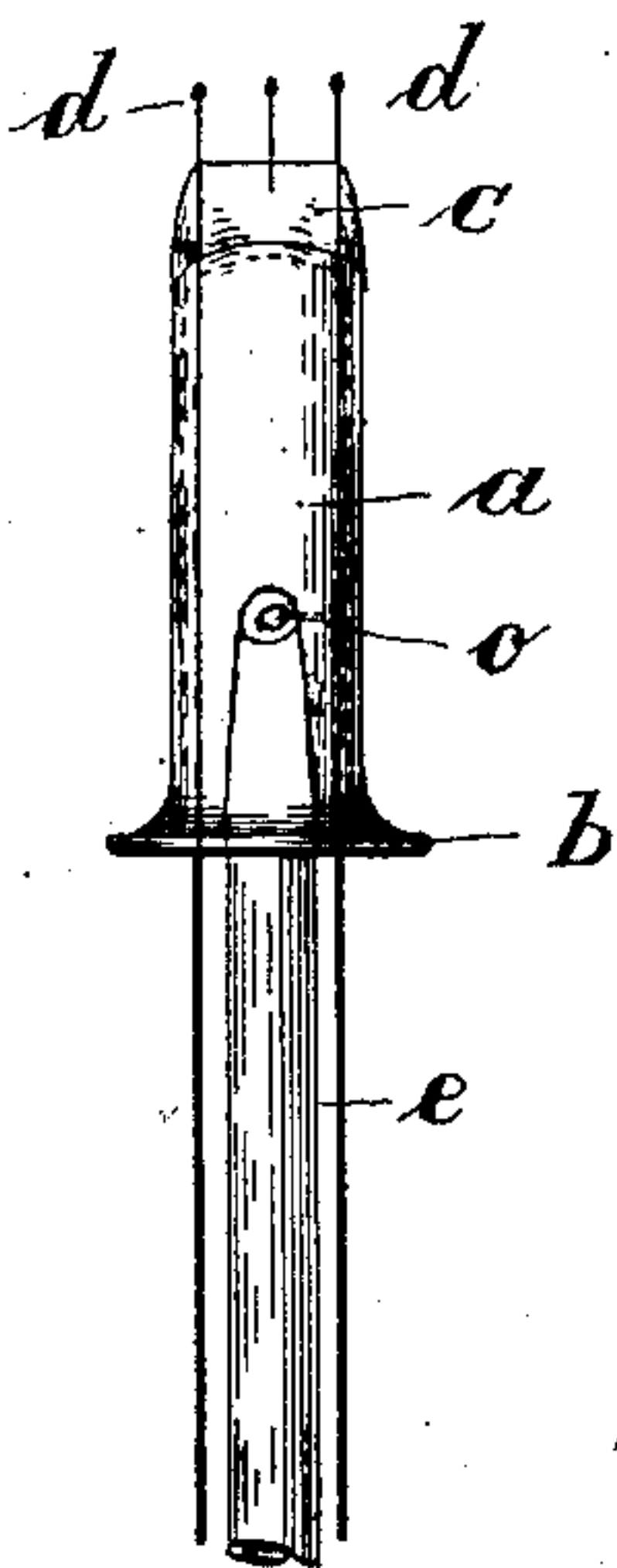
H. J. JAEGER.  
INCANDESCENT ELECTRIC LAMP.  
APPLICATION FILED JAN. 27, 1903.

NO MODEL.

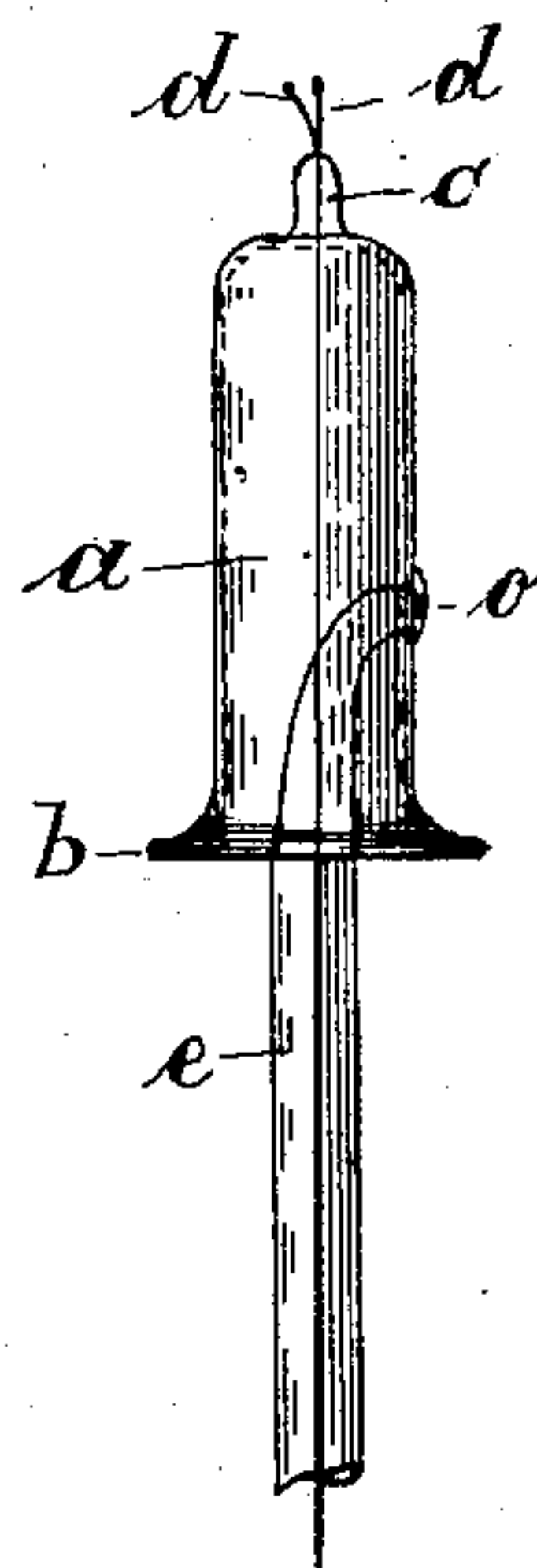
*Fig. 1,*



*Fig. 2,*



*Fig. 3,*



WITNESSES:

*Stanley Cross.*  
*Harry Duedes.*

INVENTOR

*Herman J. Jaeger*

BY

*L. C. Schindler*  
his ATTORNEY

# UNITED STATES PATENT OFFICE.

HERMAN J. JAEGER, OF NEW YORK, N. Y.

## INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 729,182, dated May 26, 1903.

Application filed January 27, 1903. Serial No. 140,803. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN J. JAEGER, a citizen of the United States of America, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

My invention has reference to incandescent electric lamps, and pertains particularly to a novel construction of tipless lamps which are exhausted from the bottom or base part or neck of the lamp. These lamps do not possess the usual tip at the top of the globe or vacuum-chamber, and therefore do not cast an undesirable shadow when the lamp is used near the eyes of a person, the top of the globe or vacuum-chamber being entirely smooth.

Heretofore tipless incandescent lamps were manufactured which were exhausted by means of an exhaust-tube blown on directly to the lower portion or neck of the globe or vacuum-chamber or at the bottom end of same. These lamps are hard to manufacture, and the tip on the neck or at the bottom presents some difficulties in mounting the lamp in the socket. Other incandescent lamps of that type were made in which the exhaust-tube was contained longitudinally within the hollow stem which carries the filament. In these lamps the platinum wires passing through the glass are closely located to the inner and open top end of the exhaust-tube, and the sealing-in of same is very difficult and uncertain, because the top portion of the exhaust-tube may be easily fused together during the process of sealing-in the wires, and in cases when but little solid glass is formed around the platinum wires then the seal is in many instances defective.

In my improved tipless lamp the above-described deficiencies are fully avoided and the lamp is exhausted from its bottom or neck part without imperiling the safety of the seal of the platinum wires. At the same time the bottom or neck portion of the lamp remains completely smooth and intact, making thus the mounting of the lamp in the socket as easy as it is with common lamps. This is accomplished by providing an exhaust-tube, which is sealed or joined to the inside wall of the hollow stem between its bottom end

and the platinum-wire seal. In this way connection with the vacuum-chamber is made without endangering the platinum-wire seal and leaving the neck portion smooth.

This invention is illustrated in the accompanying drawings, in which—

Figure 1 represents an incandescent lamp in front elevation which embodies my invention. Fig. 2 illustrates in front elevation a stem with platinum wires sealed therein and the exhaust-tube blown on the inside wall of the stem, and Fig. 3 shows in side elevation the stem with exhaust-tube in a position which is rectangular to the one shown in Fig. 2.

Similar letters of reference denote like parts in all the figures.

In the accompanying drawings, *a* represents the hollow stem, which is open at the bottom and forms there a circular flange *b*. At the top of the stem there is formed the solid glass portion *c*, and the platinum wires *d* are sealed therein, as usual. The exhaust-tube is designated by the letter *e*. It is bent at the top and blown onto the inside wall of the hollow stem by the fusion of the glass in such a manner that a small opening *o* is formed in the side wall of the stem, as is shown in Fig. 2. By means of this opening communication is later on established with the vacuum-chamber *g* and the air-pump.

As is shown in Figs. 1 and 3, the exhaust-tube *e* is curved or bent at the top, so that it stands in the center line of the stem. This facilitates the joining of the flange of the stem to the lower end of the neck *n* of the globe, because in this way the exhaust-tube and stem are easily rotated during the process of joining or fusing the stem and the vacuum-chamber together.

In manufacturing this novel lamp I substantially proceed as follows: The globe or vacuum-chamber *g* and the stem *a* are made separate. In making the stem a sufficiently long piece of glass tubing is first drawn off. The wires are then sealed in and the solid flat top portion of the stem simultaneously formed in the usual manner. Now the flange is made at its bottom end and the previously-bent top portion of the exhaust-tube joined to the inside wall of the stem by fusing same thereto. The small opening for establishing communication with the vacuum-chamber



when the lamp is finished is simultaneously formed during the process of fusing the exhaust-tube to the stem. When this is done, then the filament *f* is secured to the platinum wires, and the stem and vacuum-chamber or globe are joined together. Immediately after joining the globe and stem a small contraction *i* is made in the exhaust-tube for the purpose of finally sealing the lamp when same has been exhausted. Now the lamp is joined to the fork of the air-pump and a second contraction *j* made and the lamp exhausted. It is sealed off from the air-pump at the contraction *j* and finally at *i*.

In the described manner a tipless incandescent lamp is produced in which the exhaust-tube is not near the seal of the platinum wires and does not project from the side or bottom portion of the neck, the exhaust-tube being fused to the inside wall of the stem between the seal of the platinum wires and the bottom flange, so that it is completely within the hollow stem, but does not endanger the seal of the platinum wires.

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

1. An incandescent lamp comprising a vacuum-chamber, a hollow stem with platinum wires sealed therein, and an exhaust-tube joined or fused to the inside wall of the hollow stem between its bottom end and the platinum-wire seal.

2. In an incandescent lamp a hollow stem having platinum wires sealed therein at the top, a flange at its bottom and an exhaust-tube bent at the top joined or fused to the inside wall of the hollow stem between its bottom flange and the platinum-wire seal so that it stands in the center line of the stem.

3. An incandescent lamp comprising a vacuum-chamber with neck, a hollow stem with platinum wires sealed therein which carry the filament, and an exhaust-tube bent at the top and joined or fused to the inside wall of the hollow stem between its bottom end and the platinum-wire seal.

Signed at New York, N. Y., this 26th day of January, 1903.

HERMAN J. JAEGER.

Witnesses:

HATTIE LUEDERS,  
LILY DORA WILLIAMS.