

No. 894,625.

PATENTED JULY 28, 1908.

E. G. GILSON.
INCANDESCENT LAMP.
APPLICATION FILED DEC. 22, 1906.

Fig. 1.

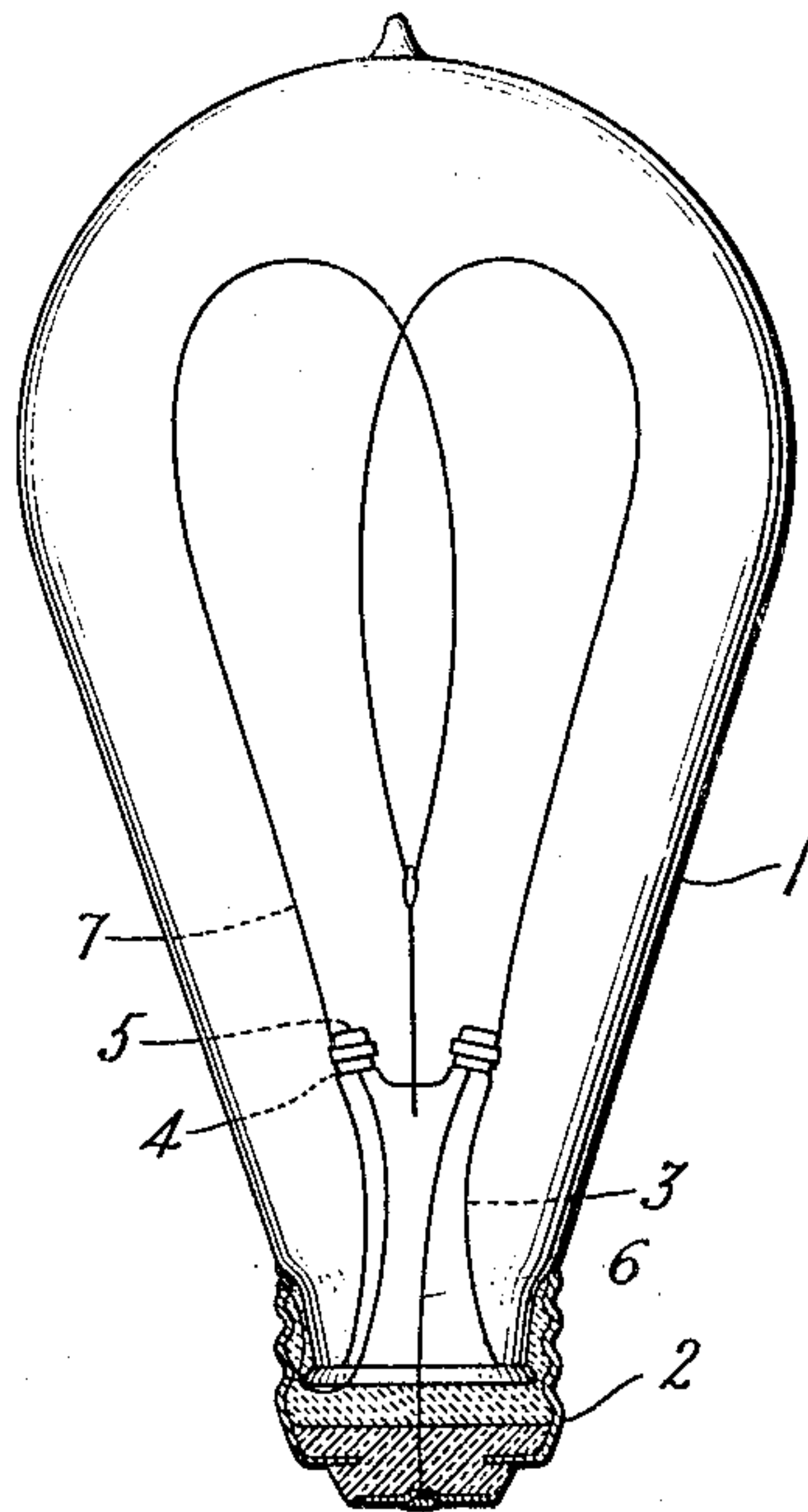


Fig. 2.

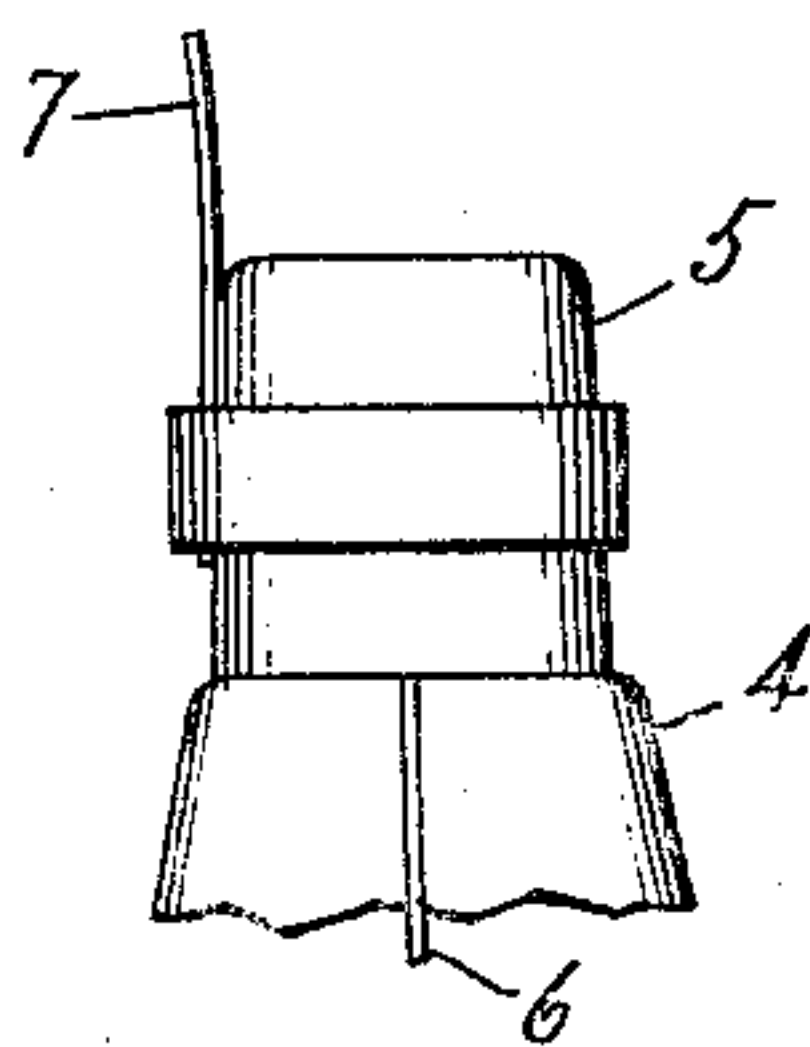


Fig. 3.

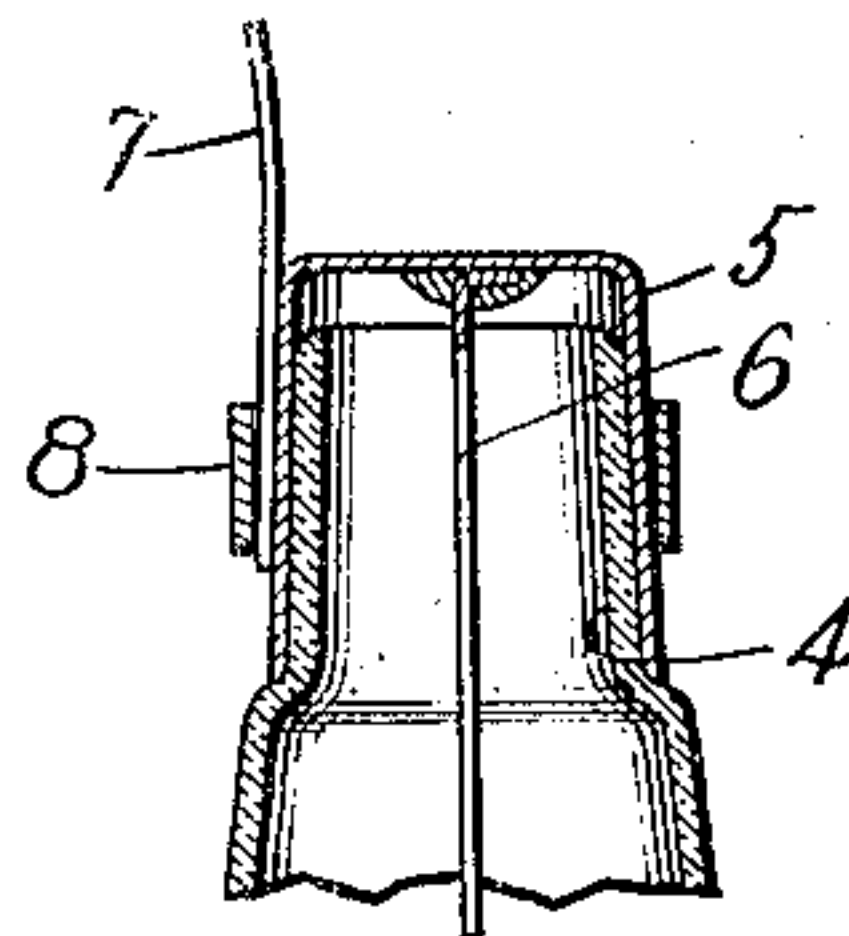
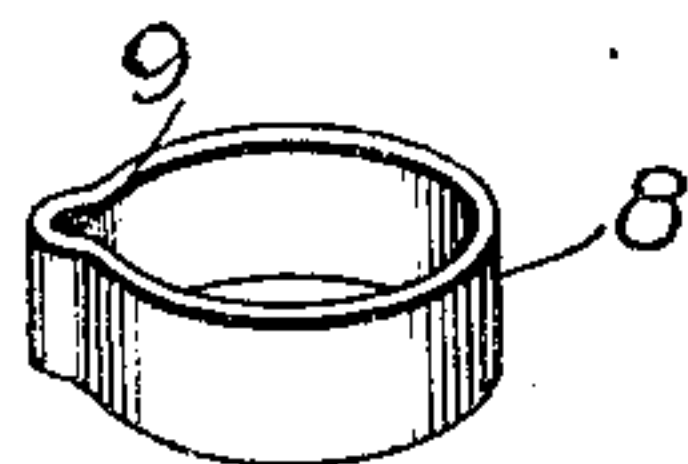


Fig. 4.



Witnesses:

George H. Tilden.
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Inventor:

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by *Albert H. Davis*
Att'y.

UNITED STATES PATENT OFFICE.

EMERY G. GILSON, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

INCANDESCENT LAMP.

No. 894,625.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed December 22, 1906. Serial No. 349,054.

To all whom it may concern:

Be it known that I, EMERY G. GILSON, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification.

My present invention relates to incandescent lamps and comprises an improved means for conducting current to and from the filament of the lamp.

The details of my invention will be better understood by reference to the drawings forming a part of this specification, in which Figure 1 is an elevation of the finished lamp with some of the parts shown in section; Fig. 2 is an elevation of the means attached to the end of the filament for conducting current thereto; Fig. 3 is a sectional elevation of the same, and Fig. 4 is a detail illustrating a modified form of clamping ring.

In Fig. 1 the glass envelop 1 and its attached base 2 may be of ordinary construction. The stem 3 of the lamp is not provided with platinum leading-in wires sealed in the glass according to common practice, but is shaped at its upper end into a plurality of upwardly projecting tubes 4. A metal cap 5 fits over the end of each of these tubes and forms an air tight joint therewith and is clamped to the filament in such a way that it serves as means for conducting current thereto. These caps may be made of copper, iron or other metal having a greater coefficient of expansion than glass. In mounting the caps on the tubes I may proceed by slipping the cap over the end of the tube, then heating the tube in a gas flame until the glass softens and then blowing the glass outward by gentle pressure until it makes intimate contact with the metal cap throughout its entire circumference. The joint is then allowed to cool and the greater contraction of the metal causes the cap to grip the glass more tightly as the joint cools. I find it advantageous to make the cap of sheet metal such as iron or copper, of sufficient thinness to prevent shearing away of the glass when the metal contracts. A thickness of one one-hundredth of an inch or less is quite satisfactory for this work. The tightness of the joint is probably assisted by

some combination between the oxidized surface of the metal and the parts of the glass in contact therewith.

The cap 5 may be connected to the external circuit by means of a copper wire 6 soldered or electrically welded thereto. The filament 7, however, is attached to the metal cap without the use of any solder, paste or other binding means, by clamping the filament directly against the metal cap 5 by means of a ring or band 8 slipping down over the metal cap 5. The metal cap may be made slightly conical to insure a good grip with the ring but the expansion of the metal during cooling gives the cap a slightly conical shape usually sufficient for this purpose. The ring may be made with a transverse groove or swage 9 as shown in Fig. 4.

My improved attaching means is not only applicable to carbon filaments of usual types, but is also applicable to special filaments such as those made of refractory metal as tungsten, tantalum, molybdenum, etc. When used in connection with these refractory metals my improved filament supporting means has the advantage that it does not require the use of any carbonaceous paste or binding material within the evacuated envelop of the lamp and thereby reduces the danger of contaminating the filament by foreign material.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. The combination of a lamp filament, tubular members through which current may be introduced to said filament, metal caps sealing said tubular members, and means for clamping said filament to said caps.

2. The combination of a filament, a stem having a sealing cap and removable means for clamping said filament to said cap.

3. Means for conducting current to the filament of an incandescent lamp, comprising a metal cap connected with the source of current and a ring holding said filament tightly against said cap.

4. Supporting means for a lamp filament, comprising a metal cap, and a ring holding said filament securely in contact with said cap.

5. In an incandescent lamp having a filament, a stem through which conductors pass,

tapering metal closures for said stem, and rings engaging said closures to hold the filament in electrical contact therewith.

6. In an incandescent lamp, a filament, a
5 tubular sealing cap, and a ring for clamping said filament in contact therewith, said ring having a groove.

In witness whereof I have hereunto set my hand this 21st day of December, 1906.

EMERY G. GILSON.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.