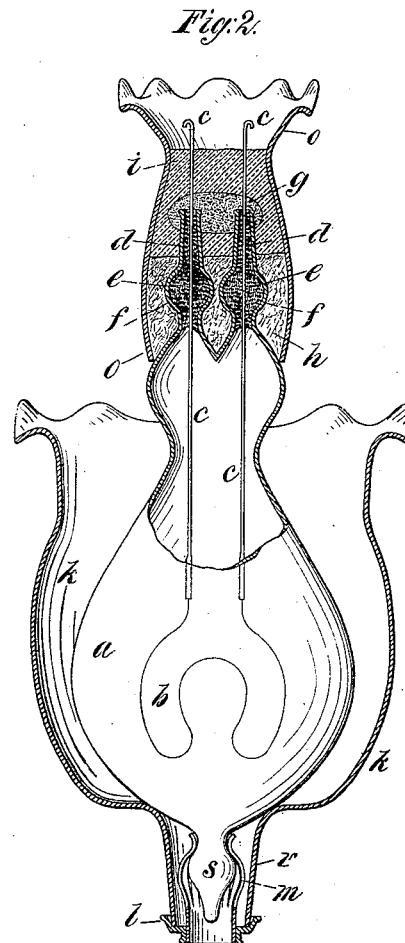
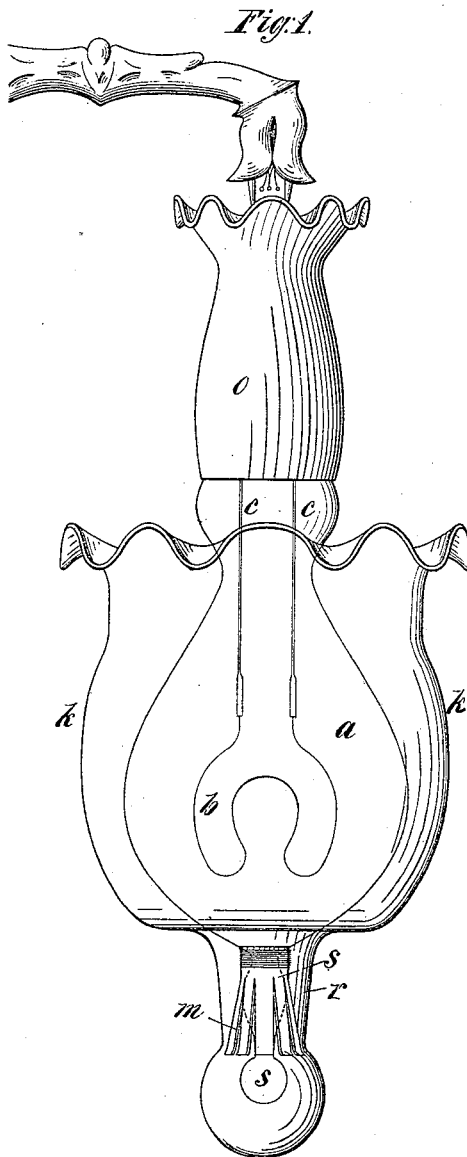


(No Model.)

J. H. GUEST.
ELECTRIC INCANDESCENT LAMP.

No. 265,410.

Patented Oct. 3, 1882.



Witnesses;
C. C. Perkins
Frank A. Meade

Inventor;
John H. Guest
by Chas. M. Higgins
Attorney

UNITED STATES PATENT OFFICE.

JOHN H. GUEST, OF BROOKLYN, NEW YORK.

ELECTRIC INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 265,410, dated October 3, 1882.

Application filed December 6, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GUEST, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Electric Incandescent Lamps, of which the following is a specification:

My invention relates to incandescent electric lamps in which the luminous loop is inclosed in exhausted or sealed glasses having sealed necks through which the conducting-wires issue.

A portion of my present invention includes certain improved details at the sealing end of the lamp for more perfectly sealing the issuing wires in the lamp; and a leading feature of my invention consists in a shade or external globe removably applied to the pendent end of the sealed lamp-globe, as hereinafter fully set forth.

Figure 1 of the drawings annexed presents a full side elevation of my improved lamp and its inclosing-shade, the whole being represented as suspended from a chandelier or bracket arm. Fig. 2 presents a sectional elevation of the lamp removed from the chandelier, showing the improved details at the sealing end of the lamp, and illustrating a modified means of supporting the external globe or shade on the pendent end of the luminous globe.

In the drawings, *a* indicates the sealed lamp-globe, which is preferably of the usual pear shape.

b indicates the carbon or luminant loop, and *c* indicates the conducting-wires, which extend therefrom and issue from the globe through tubular necks *d d*, drawn on the upper end of the globe. The wires are securely sealed in these necks in the manner claimed in a pending application filed September 12, 1881—that is, by a charge of molten metal, *e*, which is sucked up or drawn into the necks when the necks are inverted and dipped into a quantity thereof, which molten metal immediately solidifies in the necks around the wires, and thus effectively seals the same. The metal used should have a chemical adhesion for both the metal wires and the glass of the necks, so that the wires thus become, as it were, soldered or chemically cemented in the necks, thereby insuring a tight seal.

In my former applications I showed the

necks of a tapering form throughout, but flared at both ends. In my present improvement I blow bulbs *f f* about midway in the necks, which bulbs will contain a larger mass of metal around the wires and insure a better chemical contact both with the glass and the wires, thereby rendering the seal much more perfect, as will be readily appreciated. Thus when the necks are formed without the bulbs the wires are sometimes liable to touch one side of the necks, which prevents the metal flowing perfectly between the wire and the glass. With the bulbed necks, however, the wires cannot possibly touch the sides of the glass in the bulbs, which hence become filled with metal around the wires, thereby insuring a perfect metallic seal or weld between the wires and the glass sides of the bulbs. The mouths or open ends of the necks *d d* are covered or sealed over with some simple cement, preferably of a waxy and fusible nature—such as sealing-wax or shellac—as shown at *g*, thereby forming a double seal in connection with the metal *e*.

Around the necks is placed an inclosing-sheath, *o*, similar to that shown in my previous application, the lower end of which rests upon the top bulb of the lamp, while its upper end is flared and scalloped to present a neat finish simulating a tulip flower. The lower half of this sheath is stuffed with a layer of cotton, *h*, or other equivalent cushioning material, which rises to a point above the bulbs *f f* of the sealing-necks. Over this cotton is poured a layer of plaster-of-paris, *i*, which submerges the waxed ends of the necks and rises to about the narrow end of the tulip-shaped top, and through this plaster the conducting-wires rise and protrude above the same, but terminate within the tulip-shaped top, where their ends are turned down or hooked to hang in the usual manner on the corresponding hooked ends of the circuit-wires of the chandelier. The cotton layer *h* forms an elastic packing around the base and bulbed parts of the glass necks, which prevents cracking by changes of temperature or by jars, while the plaster *i* protects and conceals the upper ends of the necks, and also protects and retains the cement *g*, which cannot escape or become displaced, although it may be melted by the heat of the lamp, as it becomes imprisoned in a cell in the

plaster, which is of course infusible and unaffected by the heat. Furthermore, the plaster serves to fasten the sheath *o* in its position, and gives a neat finish in the top of the sheath, as will be understood. In lieu of the cotton packing *h*, any other elastic material may of course be used, and instead of the plaster any equivalent cement may be employed.

The remaining and more conspicuous feature of my invention relates to the shade or globe *k*, which surrounds the luminous lamp-globe in Figs. 1 and 2. This is formed at least sufficiently large to freely admit the luminous lamp-globe, but preferably about twice as large as the same, and of globular or other shape, open at the top, with preferably a flaring scalloped termination, similar to the top of the sheath *o*, while its lower end is provided with a central pendent neck, *r*, which may be either closed or open at the bottom, as shown in Figs. 1 and 2. In Fig. 1 the neck is shown closed at the bottom and terminates with a bulb, while in Fig. 2 the neck is open at the bottom and terminates flat or abruptly. The lower end of the luminous lamp-globe is usually terminated with a pendent stem, *s*, formed by drawing the glass out in sealing the globe after its exhaustion. This stem in Fig. 2 is narrow where it springs from the lamp-globe, and thence swells into a pear-shaped bulge, diminishing downward to a point, as shown. Now, *l* indicates a loose metal ring, having a shallow flared rim on its upper side and a tube rising from its center, which tube is divided into a number of spring tongues or prongs, *m*, which spread apart at the middle, converge toward the top, and again diverge at the extremities. It will therefore be readily seen that the shade-globe *k* may be easily slipped up over the lamp-globe *a* till the lamp-globe seats against the bottom of the shade-globe, and that the ring *l*, with its spring-clasps *m*, may now be put in place by pressing the clasps up through the neck of the globe around the stem *s* of the lamp, when the clasps will spring around the narrow part of the stem and the ring will seat against the base of the neck *r* of the shade-globe, as shown in Fig. 2, and the shade-globe will thereby be attached to the lamp-globe in a neat, simple, and secure manner, yet may be as readily detached when not required or when it is desired to clean the globe.

The globe of course serves to mellow or modify the light from the luminous loop and conceal the intensity of its outline, and is preferably ground for this purpose, and may also be used to tinge or color the light, if made of colored glass. The globe also protects the fragile exhausted globe from drops of water or from irregular or sudden drafts of air, which frequently crack it, and, moreover, imparts a much better appearance to the lamp, and may be etched or ornamented in many ways and decorated with the initials or other devices of the owner. Where the neck of the shade-globe is closed, as in Fig. 1, the globe may be

filled with water around the luminous globe, thereby serving to keep the luminous globe from becoming too highly heated, and also mellowing the light and giving the effect of a lens or prism around the lamp. If filled with colored fluids, the lamps may then be advantageously employed as show-bottles in druggists' windows.

In Fig. 1 the spring-clasps *m* are formed somewhat different to that in Fig. 2. In this case the clasp is affixed to the pendent stem *s* of the luminous globe, which is made a little longer than the stem in Fig. 2, and preferably terminates in an ornamental bead or knob, *n*. The clasp consists of a cleft metal sleeve or tube, preferably fastened to the root of the stem *s* by a binding of wire, as illustrated, and divided at its lower end into a number of divergent spring-tongues, *m*, whose extremities are hooked or turned slightly upward, as fully shown in Fig. 1. It will hence be seen that if the stem of the lamp, which forms in effect an elastic tenon, is pressed down in the neck of the shade-globe, or vice versa, the spring-tongues *m* will spring out over the end of the neck, and thus hold the shade-globe securely and neatly in its position upon the lamp with the same effect as in Fig. 2. I prefer the construction just described, and shown in Fig. 1; but either construction may be used, and obviously other modifications may be employed without departing from the general plan. Thus instead of the spring-tenon and socket, the stem of the lamp-globe may be provided with a screw-thread to screw into a threaded socket on the lamp-globe, but the spring-tenon and socket is preferred.

I claim—

1. The combination, with an electric-lamp globe formed with a pendent or projecting stem, of a detachable shade-globe adapted to encircle the same, and formed with a corresponding neck or socket, in which said stem is received, substantially as and for the purpose set forth.

2. The combination, with an electric-lamp globe formed with a pendent or projecting stem, of a detachable shade or globe adapted to surround the same, formed with a corresponding neck or socket, into which said stem fits, and a spring-clasp serving to detachably engage the stem with the socket by slipping the one into the other, substantially as herein shown and described.

3. An electric-lamp globe provided with an elastic or expansible and contractible tenon or stem, in combination with a detachable shade-globe adapted to surround the lamp-globe, and formed with a neck or socket in which the said elastic tenon or stem may be sprung to detachably support the shade-globe upon the lamp-globe, substantially as herein shown and described.

4. An electric-lamp globe formed with the neck or necks *d d*, through which the conducting-wires issue, with swells or bulbs *f f* formed on said necks, and a charge of solidified metal

or equivalent cement therein, substantially as and for the purpose set forth.

5 5. The combination, with an electric-lamp globe formed with tubular necks, through which the conductors issue, of a primary sealing of solidified metal in said tubes, and a secondary sealing of wax or equivalent cement applied to the external ends of said stems, substantially as herein shown and described.

10 6. The combination, with an electric-lamp globe having the apertures or necks through

which the conductors issue sealed externally with a fusible cement, of a sheath surrounding said necks or apertures, and a filling of infusible cement within said sheath surrounding said necks and submerging the said fusible cement, substantially as herein shown and described. 15

JOHN H. GUEST.

Witnesses:

CHAS. M. HIGGINS,
E. C. PERKINS.