

(No Model.)

J. UNGER & S. O. EISELE.

ELECTRIC LAMP.

No. 290,150.

Patented Dec. 11, 1883.

Fig. 1.

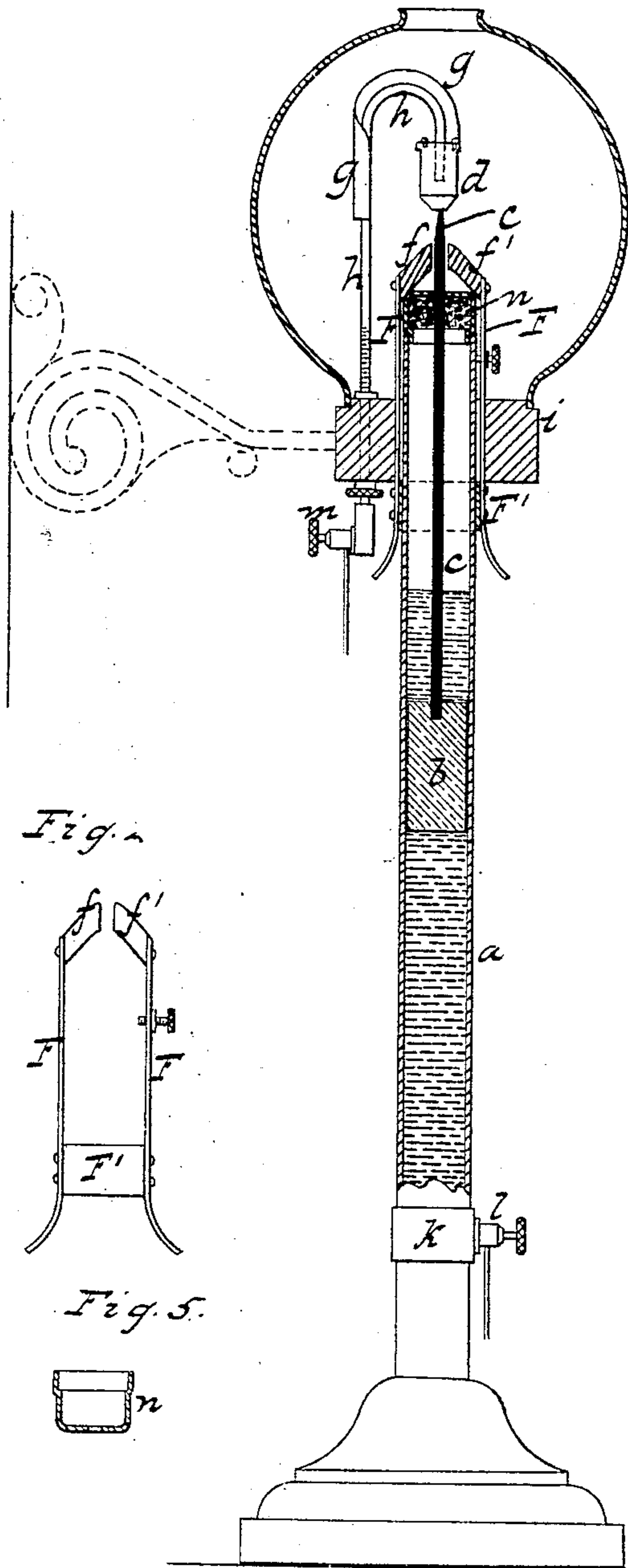


Fig. 4.

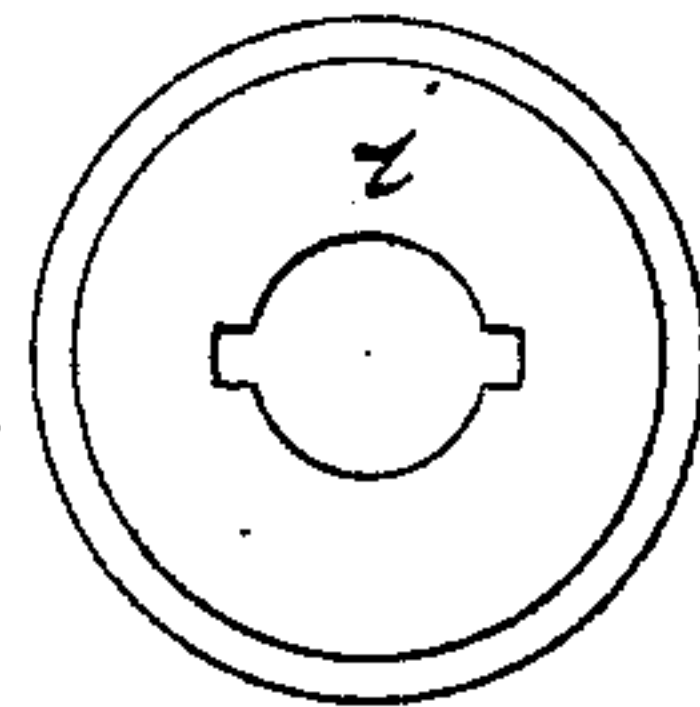


Fig. 3.

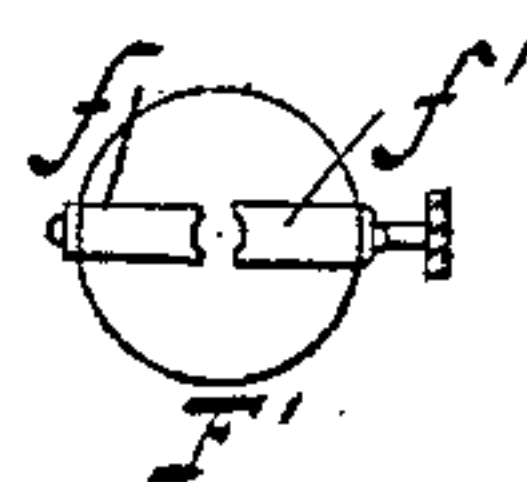


Fig. 2.

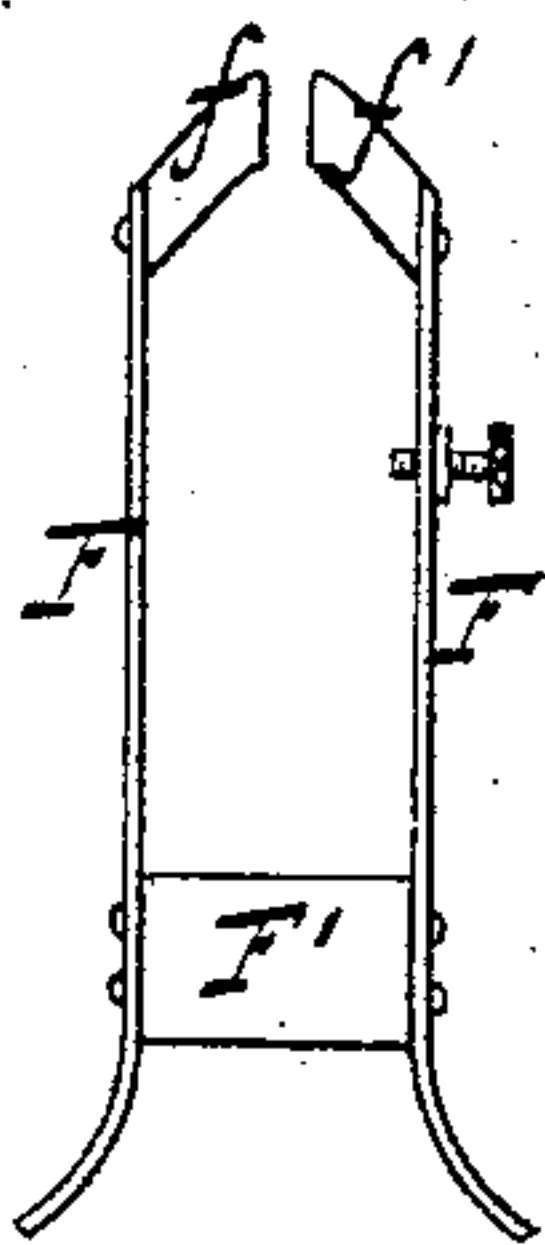


Fig. 5.



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JULIUS UNGER, OF CANNSTADT, AND SAMUEL OTTO EISELE, OF HEUCHLINGEN, GERMANY; SAID EISELE ASSIGNOR TO SAID UNGER.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 290,150, dated December 11, 1883.

Application filed June 26, 1883. (No model.) Patented in Belgium December 16, 1882, No. 59,579.

To all whom it may concern:

Be it known that we, JULIUS UNGER, a citizen of the German Empire, residing at Cannstadt, Germany, and SAMUEL OTTO EISELE, a citizen of the German Empire, residing at Heuchlingen, Germany, have invented new and useful Improvements in Electric Lamps, of which the following is a specification.

This invention relates to improvements in electric lamps; and it consists in a vertically-adjustable elastic electrode-holder adapted to be turned or moved laterally, as hereinafter more fully set forth; also, in a clamping apparatus consisting of a supporting device provided with clamping-arms. The illuminating-power of the electric-light carbons is increased by suspending the same in a solution of zinc salts. A reservoir for the reception of fluid is also provided, as hereinafter set forth.

In the accompanying drawings, Figure 1 shows an elevation of a complete lamp, which is adapted for use as a stand-lamp, as well as a hanging lamp or wall-lamp, as shown by the bracket in dotted lines. The remaining figures will be hereinafter referred to.

Similar letters indicate corresponding parts.

The letter *a* indicates a brass tube, which is to be filled with a fluid, hereinafter more closely defined, in which is placed the float *b*, of a lighter specific gravity than the fluid. To the float *b* is attached a carbon rod, *c*, which is thus raised by the fluid, and in being consumed is continually pressed against the upper electrode, *d*, which is an iron cylinder. The carbon *c* is guided by the elastic or yielding clamping apparatus *f f' F F'*. The iron cylinder *d* is suspended from a thin but broad copper spring, *g*, which with its lower bent end is screwed or attached to the iron cylinder *d*. The spring *g* is soldered to the bent brass rod *h*, and allows a rising or lifting of the iron cylinder *d* for the space of a few millimeters, or a fractional part of an inch, whereby the latter is guided by the brass rod *h*. The spring *g* thus effects a slight counter-pressure to the pressure of the float *b*. The brass rod *h* is movable, its screw-thread running in a nut in the wooden ring *i*, so that by turning the said nut the guide-rod *h* is raised or lowered and the length of the incandescent carbon end

regulated, and by turning the guide-rod *h* the carbon rod can be freed, and, when worn out, replaced by a new one.

The elastic clamping apparatus *f f' F F'* (shown in Fig. 2 on an enlarged scale) consists of the massive copper arms *f f'*, which lead the electric current to the carbon rod, and which are soldered to the broad thin brass rods *F*, which form part of the sleeve or cylindrical part *F'*, and its downwardly-projecting clamps or spring-arms, which fits tightly over the brass tube *a*, and the spring-arms of which sleeve *F'* enable the latter to be firmly fixed at any position. The arms *f f'* by the springs *F* are pressed gently against the carbon *c* and grasp or encircle the same while leaving it free to glide upward.

In order to be able to use carbon of varying diameters in one and the same lamp, a set-screw is provided for one of the springs *F*, by which the pressure may be regulated. The surfaces of the arms *f f'* which grasp or touch the carbon *c* are provided or faced with platinum plates.

Fig. 3 shows a plan view of the clamping apparatus just described in connection with Fig. 2. The wooden ring or sleeve *i* is formed as shown in plan view in Fig. 4, the edge of the opening in the central portion of the sleeve *i* sitting upon the upper rim of the sleeve *F'* of the spring-clamp, and a set-screw being provided to hold the ring *i* in position on the tube *a*. The elongations of the cut in the ring *i* serve to give play-room to the springs *F* when the carbon is changed.

Fig. 5 represents a side view in section of the capsule *n*, which rests with its edge on the upper rim of the tube *a* and prevents dust and strange matter falling into the same. The capsule has an opening, as seen in Fig. 5, through which the carbon passes out and is further guided.

To the under side of the dust-capsule *n* a sponge is to be attached, which bears against the carbon and which is intended to keep the surface of the carbon smooth.

At the lower part of the tube *a* the brass sleeve *k*, provided with a clamping device, *l*, is attached, which latter serves for the attachment of the wire for the entering of the cur-

rent. The current then takes the following course: Entering at *l*, it flows along the tube *a* to the clamping device *f f'* *F F'*, thence to the carbon. From there the current flows
 5 through the iron cylinder *d*, copper spring *g*, and brass rod *h*, where it is led out of the lamp through the clamp *m*.

The fluid in the brass tube is such a one as is calculated to increase the illuminating-power
 10 of the carbon, which result may be accomplished by solutions of zinc salts—as, for example, by a solution of chloride of zinc in water. The carbon absorbs the fluid, and on the evaporation of the water the chloride of zinc remains in
 15 the pores of the carbon, which considerably increases the illuminating-power of the carbon and gives an agreeable color to the light.

What we claim as new, and desire to secure by Letters Patent, is—

20 1. The combination, in an electric lamp, of a vertically-adjustable rod, *h*, a spring, *g*, having one end attached directly to the upper end of the rod, and an electrode, *d*, secured to the other end of the spring, substantially as de-
 25 scribed.

2. The combination of a carbon, *c*, suspended in a fluid of an electrode, *d*, a spring, *g*, to which the electrode is secured, and a rod, *h*, supporting the spring, said electrode being
 30 adapted to move laterally, substantially as described.

3. A clamping apparatus consisting of a supporting device, *F F'*, provided with clamping-arms *f f'*, substantially as and for the pur-
 35 pose set forth.

4. The method of increasing the illuminating-power of electric-light carbons by suspending the same in a solution of zinc salts, substantially as and for the purpose set forth.

5. The combination, in an electric lamp, of 40 a reservoir, *a*, containing a fluid, a float suspended in the fluid and carrying an absorbent, *c*, and a guide-cap, *n*, for guiding the absorbent, substantially as described.

6. The combination, in an electric lamp, 45 of a reservoir containing a fluid, an absorbent suspended in the fluid, a cap for guiding the absorbent, and a yielding electrode suspended directly over the upper end of the absorbent and in contact therewith, substantially 50 as described.

7. The combination, with the reservoir *a*, containing a solution of zinc, of the carbon electrode *c*, having a float, *b*, and the electrode
 55 *d*, substantially as described.

8. The combination, with the reservoir *a*, containing a solution of zinc, of the carbon *c*, having a float, *b*, the vertically and laterally adjustable electrode *d*, and spring *g*, substan-
 60 tially as described.

In testimony whereof we have hereunto set our hands and seals in the presence of two subscribing witnesses.

JULIUS UNGER. [L. S.]
 SAMUEL OTTO EISELE. [L. S.]

Witnesses:

TH. ABENHEIM,
 ROSINA SHÜDUL.