(No Model.)

G. W. BEARDSLEE.

ELECTRIC LAMP.

No. 265,737. Patented Oct. 10, 1882.

FIG. 1.

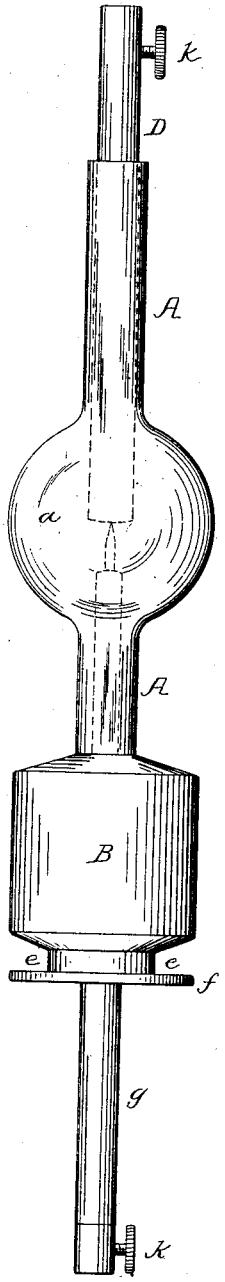


FIG. 2.

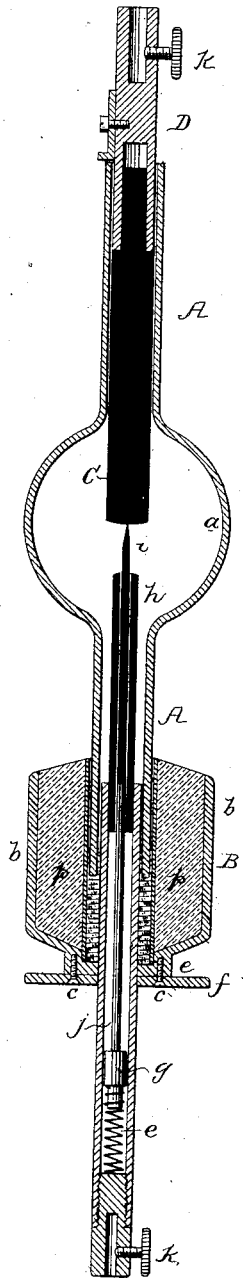
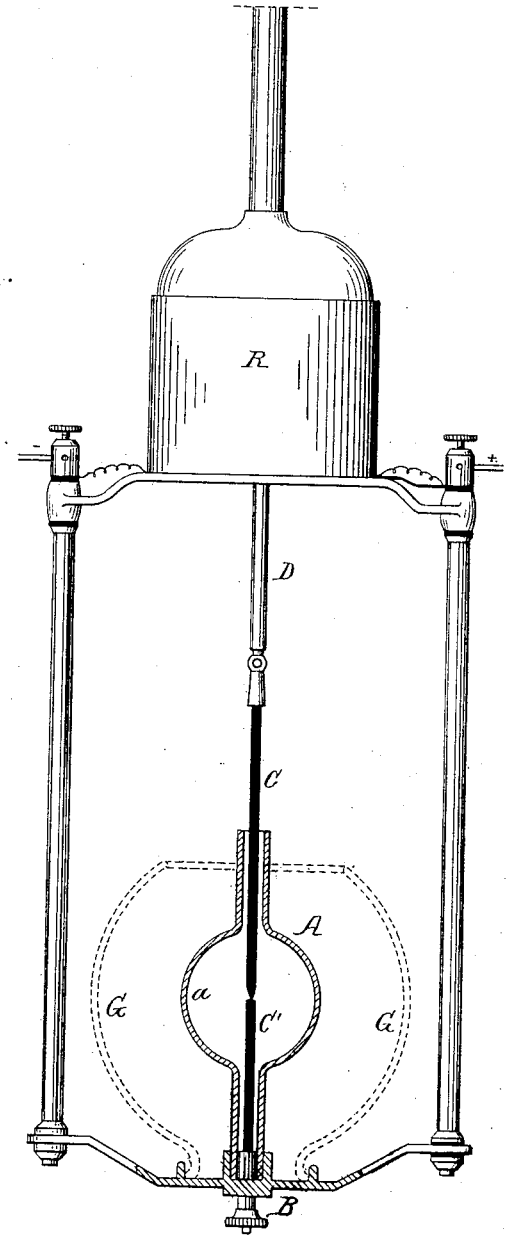


FIG. 3



WITNESSES:
James F. Tobin
Harry Drury

INVENTOR:
George W. Beardslee
by his attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

GEORGE W. BEARDSLEE, OF BROOKLYN, NEW YORK, ASSIGNOR TO WILLIAM F. JOBBINS, OF EAST ORANGE, NEW JERSEY.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 265,737, dated October 10, 1882.

Application filed June 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BEARDSLEE, of Brooklyn, Kings county, State of New York, have invented certain Improvements in Electric Lamps, of which the following is a specification.

The main object of my invention is to so construct an electric lamp as to lessen the consumption of the carbons when the lamp is in operation; and this object I attain by providing the globe or inclosure for the light with a closed bottom and a contracted opening at the upper end, as more fully described hereinafter.

My invention also relates to certain improvements in the detailed construction of the lamp, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a side view of an electric incandescent lamp embodying my invention; Fig. 2, a vertical section of the lamp shown in Fig. 1; and Fig. 3, a view of an arc-light lamp embodying my invention.

Electric lamps, as usually constructed for the burning of carbon or equivalent points, are provided either with open globes, allowing a free circulation of air about the carbons, or with a closed glass case, so that the carbons are practically in a vacuum. In the one case the admission of a free circulation of air about the carbon points induces an unnecessarily-rapid consumption of the carbons, while in the other case there is the trouble and inconvenience attending the opening of the air-tight inclosure whenever a change has to be made in the carbons.

In my invention the globe for the carbons is closed at its lower end, and has at the upper end a contracted opening of such a character that while it will prevent a free circulation of air about the carbons will allow expanded air to escape from the globe and permit the free passage of the carbon through said opening.

Referring to Figs. 1 and 2 A is a glass globe, having an enlarged spherical portion, *a*, in which the carbons are intended to burn, and contracted tubular portions above and below, the lower end being fitted tightly into the base B of the frame, as hereinafter described.

C is a cylindrical piece of carbon, which is secured in a suitable holder, D, and in the type of lamp shown in Figs. 1 and 2 is preferably made thick, so as to consume slowly. This carbon passes freely through the upper tubular portion of the globe A, so as to leave a small space between the inner face of the tube and the carbon, and the latter is held in the proper position, so that it will be about the center of the globe, by an adjustable stop, *m*, secured to the holder D and resting on the top of the tubular portion of the globe A. This holder D is provided with a recess and set-screw, *k*, for the connection of the terminal wire.

Against the end of the carbon C bears the carbon pencil *i*, which passes through a tube, *h*, of carbon secured in and forming a continuation of a metal tube, *g*. This tube *g* is closed at its lower end by a plug carrying a screw, *k*, for the terminal wire, and within the tube is a rod, *j*, supported on a spiral spring, *e*, which keeps the pencil *i* in contact with the bottom of the carbon C.

The base B may be in the form of a cylinder, *b*, contracted at its lower end, and within this may be fitted a tube, *e*, of smaller size. The space between the cylinder *b* and tube *e* may be filled with plaster-of-paris or other poor conductor of heat. A metal plate, *f*, is secured to the lower end of the base B, and in a central opening in this plate and the neck *c* is fitted the tube *g*. The tubular lower end of the globe fits into the tube *e* and may be hermetically sealed therein by any suitable sealing material, *p'*—such as powdered asbestus, plaster-of-paris, or similar material—so that air cannot enter the lower end of the globe. The light is produced by the incandescence of the pencil *i* when an electric current is passed through the carbons. The intense heat caused by the action of the electric current upon the carbons will highly rarefy the air in the globe, so that it will pass out between the carbon C and the tube; but this, the only opening, is too contracted to permit the air to enter and circulate about the carbons while the lamp is lighted. The result will be that the carbons will burn in an atmosphere so rarefied as to be almost a vacuum, so that the combustion of the carbons will be very slow. Thus, while securing nearly all the advantages attending the use of a vacuum,

the construction described permits the ready renewal of the carbons.

In Fig. 3 I have shown my invention as applied to an arc electric light. C and C′ are the positive and negative carbons, the former being secured in the holder D, while the carbon C′ is fixed in the base B. Into this base is fitted the lower end of the globe A, so as to practically prevent the entrance of air at that point, while the upper end of the globe has a contracted opening for the purpose described above. Through this opening passes the carbon C and its holder D, which latter is under the control of the regulating devices in the case R, for forming and maintaining the arc.

It will be understood that the form and dimensions of the globe or inclosure for the lighting devices may be varied without departing from my invention; and an outer globe, G, may also be employed.

I claim as my invention—

1. An electric-light lamp provided with carbons and carbon-holders, in combination with a globe or inclosure having one end closed, and at the other end a contracted opening, through which one of the carbons freely passes, substantially as and for the purpose set forth.

2. The combination of the carbon C of an electric lamp with a tube, *h*, of carbon, and a pencil, *i*, within said carbon tube, as and for the purpose described.

3. The combination of the carbon points of an electric lamp and globe, A, with the carbon-holder D, having a stop, *m*, adjustably secured thereto, and adapted to rest on and be supported by the top of the globe, as and for the purpose specified.

Witness my hand, June 11, 1881.

GEORGE W. BEARDSLEE.

In presence of—
P. B. VERMILYA,
A. G. W. VERMILYA.