

(No Model.)

J. R. GROVE.
INCANDESCENT LAMP.

No. 530,838.

Patented Dec. 11, 1894.

Fig. 1.

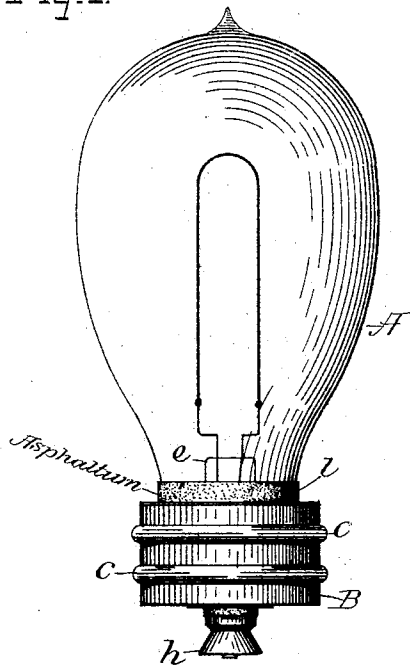


Fig. 2.

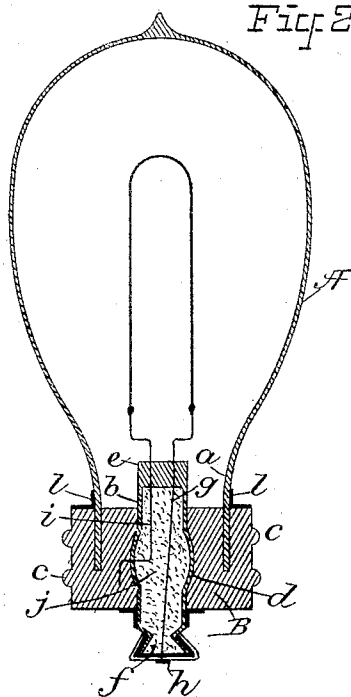


Fig. 4

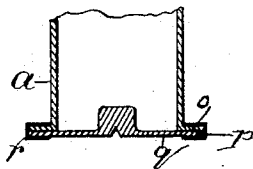
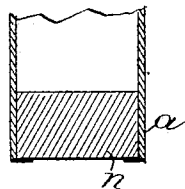


Fig. 3.



Witnesses
Geo. H. Miller,
Alfred D. Wickes

Inventor
Jacob Ross Grove,
By his Attorney
William H. Brown

UNITED STATES PATENT OFFICE.

JACOB ROSS GROVE, OF NEW YORK, N. Y., ASSIGNOR TO WALTER E. PECK,
TRUSTEE, OF SAME PLACE.

INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 530,838, dated December 11, 1894.

Application filed May 26, 1893. Renewed May 14, 1894. Serial No. 511,256. (No model.)

To all whom it may concern:

Be it known that I, JACOB ROSS GROVE, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification.

My present invention is directed to the production of an incandescent lamp of the so-called two-part type which shall not only be of durable and inexpensive construction but which will at the same time, provide for the complete sealing of the neck, so as to maintain the vacuum and hence insure the maximum candle power and operativeness of the filament.

Under certain conditions, a two part lamp will be especially valuable from the fact that the independent character of the neck closing section will admit of its detachment, the renewal of the filament and the readjustment of the said neck closing section. In all forms of two-part lamps with which I am familiar the desideratum noted has been defeated owing to the impossibility of securing a perfect sealing of the bulb.

The difficulties alluded to are obviated by my improvements and many other important advantages secured.

In the drawings accompanying this specification Figure 1, is a vertical elevation of so much of an incandescent lamp as embodies my invention. Fig. 2, is a vertical sectional elevation of the construction shown in Fig. 1. Figs. 3 and 4, are also vertical sectional elevations showing further modifications.

In so far as the construction shown in Figs. 1 and 2 is concerned, the neck *a*, of the bulb *A*, is closed by a section of fusible material *B* cast thereon and centrally in which, a vertical glass tube *b*, is embedded in the operation of casting. The section *B*, is preferably of metal although other materials such for instance as gutta percha, may be substituted. The section *B*, is cast with socket engaging provision—that is to say with side threads or otherwise. In the drawings the section is shown as being provided with annular projections *c*, an arrangement familiar in a prior construction. The central portion of the tube *d*, is of expanded form so as to reduce the

amount of metal or material in the section *B*, to a minimum. The upper solid end of the tube extends into the bulb to constitute the mount *e*, while the lower open end *f*, which is below the section *B*, is a dovetail form in longitudinal section. A "leading in" wire *g*, pierces the mount, extends vertically in the tube and is electrically connected at its lower terminal to a metal cap *N*, for a key contact as will be obvious to those familiar with the general subject. The other "leading in" wire *i*, passes through the wall of the tube and is embedded in the section *B*, to complete the lamp circuit through the socket. In order to absolutely insulate the "leading in" wires within the hollow part of the tube, the latter is preferably filled with some agent *j*, such as plaster of paris. The cap *N*, which closely embraces the dovetail end *f*, is securely attached thereto by means of an interposed layer of cement.

When the filament has become so impaired that it is no longer serviceable, the section *B*, can be subjected to heat, the bulb detached, the filament superseded by a fresh one and the parts restored to their proper operative relation.

While in a majority of cases, the casting of the section *B*, on the bulb neck will result in such an intimate union of the adjacent portions of the glass and cast material, that the vacuum will be effectually preserved, still in most instances and as an additional precaution I prefer to externally apply a sealing medium impervious to the air.

In practice, I may employ any one of a number of agents for the purpose stated. In Figs. 1 and 2, I have indicated by solid lines *l*, the application of a varnish of asphaltum, the same being applied to the outer adjacent portions of the section *B*, and bulb neck, and also to the adjacent parts of said section *B* and lower depending portion of the tube. Asphaltum varnish has been ascertained to be particularly suitable as a sealing agent both on account of its capacity for adhering to the parts and its extreme imperviousness to the air.

The embodiment of the invention can be modified to the extent of applying the additional sealing agent to a construction wherein

the neck is closed by an internal plug, held in position by being cemented, or otherwise. Thus for instance in Fig. 3, I have shown the neck *a*, of the bulb closed by a plug *n*, of glass or other material cemented in position; a sealing agent such as asphaltum varnish being applied on the underside to completely seal the lamp.

Fig. 4, shows still another form, the neck *a*, of the bulb being provided with a lateral flange *o*; against which a corresponding flange *p*, of the neck closing section *g*, bears, the connection of the two being made by cementing. The flanges are covered by the sealing agent as indicated by the solid line *r*.

The application of the external sealing medium requiring as it does only a small amount of time and labor does not appreciably increase the expense of manufacturing the lamp, while on the other hand, the result obtained is most important.

While this specification contains subject matter similar to that presented in companion cases filed by me on May 17, 1893, Serial No. 474,605, and on September 14, 1893, Serial No. 485,453, I make no claim to the same herein except in so far as it is specifically covered.

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

1. In an incandescent lamp, the combination with a bulb having its neck closed by an

independent section of fusible material spanning the neck opening of a non-metallic yielding sealing medium located on adjacent parts of glass and said section, substantially as set forth.

2. In an incandescent lamp, the combination with a bulb having its neck closed by an independent section of fusible material spanning the neck opening of a coating of asphaltum applied to adjacent parts of glass and said section, substantially as set forth.

3. In an incandescent lamp the combination with the bulb, of an independent section of cast material closing the neck of the same and having integral ridge or thread to adapt it for engagement with the socket, substantially as set forth.

4. In an incandescent lamp, the combination with a bulb having its neck closed by an independent section of fusible material spanning the neck opening, of a vertical tube of insulating material embedded in said fusible section and expanded as described, together with leading in wires and a filament, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 24th day of May, 1893.

JACOB ROSS GROVE.

Witnesses:

WILLIAM PAXTON,
ALFRED D. WICKES.