No. 696,100. Patented Mar. 25, 1902.

P. M. J. JUGE & A. E. GRISEL.

INCANDESCENT LAMP.

(Application filed Sept. 8, 1900.)

(No Model.)

Fig. 4.

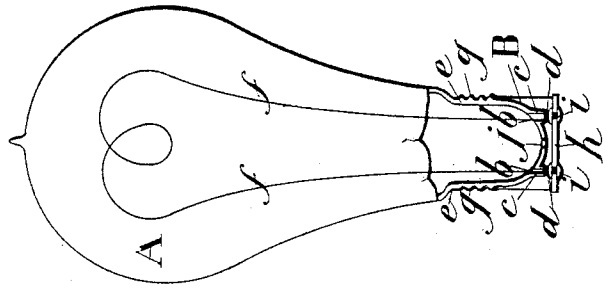


Fig. 3.

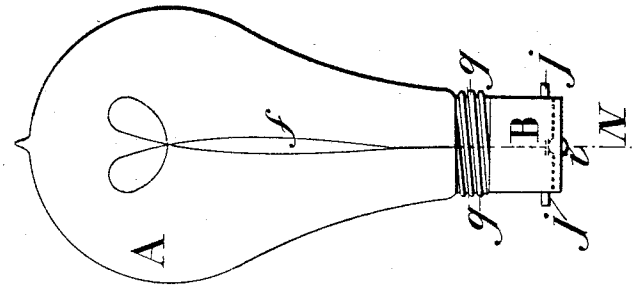


Fig. 2.

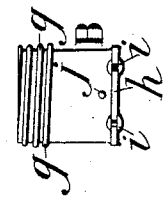
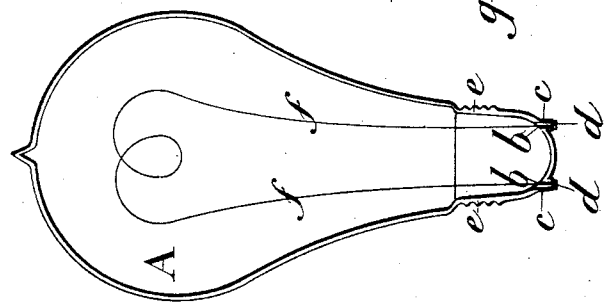


Fig. 1.



Witnesses:
Richard B. Maxwell
Thomas M. Smith

Inventors:
Paul M. J. Juge and Alphonse E. Grisel,
By J. Walton Douglass
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PAUL MARIE JOSEPH JUGE AND ALPHONSE EUGÈNE GRISEL, OF PARIS, FRANCE; SAID JUGE ASSIGNOR TO JOHN PETER PERSCH, OF NEW YORK, N. Y.

INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 696,100, dated March 25, 1902.

Application filed September 8, 1900. Serial No. 29,361. (No model.)

To all whom it may concern:

Be it known that we, PAUL MARIE JOSEPH JUGE and ALPHONSE EUGÈNE GRISEL, citizens of the Republic of France, and residents of Paris, France, have jointly invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification.

The incandescent lamp which forms the subject-matter of the present application for a patent consists, as do all lamps of this class, of a bulb in which a vacuum has been formed and in which in the interior is arranged a filament of carbonaceous matter intended to be made incandescent by the passage of an electric current.

The distinguishing feature of this lamp is that its bottom, in place of being, as is usual, a plaster stopper in which are inclosed and sealed the ends of the platinum wires to which the filament is joined, is entirely of glass. The two platinum wires pass through the bottom and are solidly sealed in the glass and terminate outside the glass in two expanded heads or contacts through which the electric current can be passed with certainty. In order that lamps of this sort with bottoms entirely of glass can be put in place, like ordinary incandescent lamps, in the fittings of lighting apparatus, the glass bottom of the lamp is elongated into a foot or neck so arranged as to receive a metallic cap fixed by screwing or otherwise applied to said foot or neck. At the bottom of the cap or thimble there are two contacts secured or riveted in an insulating-base, corresponding to and fitting against the heads or contacts at the ends of the wires of the bulb when the cap is in place. The lamp, entirely of glass, with this cap fixed by screwing or otherwise, can be used in an ordinary fitting or socket—for example, a fitting or socket with a bayonet-joint.

The nature and scope of our invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a longitudinal section of a bulb with its internal filament in place. Fig. 2 is a side elevational view of the interchangeable cap detached from the bulb. Fig. 3 is an external view of the complete lamp with the cap screwed on; and Fig. 4 is a section on the line N, Fig. 3.

The lamp consists of a glass bulb A, of any shape, in which a vacuum has been formed and which incloses a filament of carbon or other material adapted to become incandescent and to be bent into required form. The ends of the filament *f* are connected to two platinum conducting-wires *b*, which pass through the glass foot or neck of the bulb A and are hermetically sealed therein, as at *c*. The platinum conductors *b* are provided outside the foot or neck of the bulb A with shoulders or rounded heads *d*, insulated from each other by the glass of the bulb and fused into the foot or neck, thereby permitting a certain and intimate contact with the contacts of the cap hereinafter described. At the top of its glass foot the lamp is provided with a screw-thread *e*, preferably formed in the glass itself and on which is intended to be secured by screwing the cap B, which is shown separately in Fig. 2. In certain cases the lamp may be made with a bulb not furnished with a screw-thread, and the base of the bulb may have a screw-ring of metal or other material secured to it by plaster or other convenient cement, to which screw-ring the cap B may be secured. The cap B may be formed of metal or any other suitable material—such as copper, glass, ebonite, wood, &c.—and is provided at its upper part with an internal screw-thread *g*, of which the diameter and pitch correspond exactly with the screw *e* of the bulb of the lamp, so that the cap can be solidly connected to the base of the bulb simply by screwing on the cap. The bottom of the cap is a disk *h* of insulating material, which is traversed by two buttons or contacts *i*, which are insulated the one from the other by the disk *h*. These two contacts *i* are intended to come exactly against the two plates or rounded heads *d* at the ends of the platinum conductors *b* when the cap has been screwed home onto the bulb. The contacts *i* are also intended to make contact through their exterior heads with the metallic surfaces of the fitting or socket for the lamp. The cap is preferably provided with two dia-

metrically opposite pins *j*, projecting from its base, which are intended to enable the lamp to be fixed with a bayonet-joint to its fitting or socket.

For certain lamps or certain fittings, in which the conductors of the current are one at the bottom of the fitting and the other at its side and the incandescent lamp is fixed otherwise than with a bayonet-joint, the cap may be arranged to correspond with the fitting and the contacts *i* may be suitably placed.

The chief advantage possessed by the construction above described is that the bottom of the incandescent lamp contains absolutely no plaster and the cap which is screwed into the foot of the glass bulb is interchangeable and capable of being employed for other bulbs when the latter are damaged.

Having thus described the nature and object of our invention, what we claim as new, and desire to secure by Letters Patent, is—

An incandescent lamp, comprising a bulb constructed wholly of glass and provided at its base with an exteriorly-screw-threaded closed foot or neck formed integrally with the body of the bulb, two conducting-wires sealed in the wall and base of the foot or neck and thereby insulated from each other, a head or button formed on each wire outside the neck or foot, and a filament located within the bulb and secured to the conducting-wires, in combination with a cap adapted to be screwed upon the exterior of the foot or neck, an insulating-disk formed in the base of said cap and two metallic contacts secured to said disk and adapted to register with the heads or buttons of the neck or foot of the bulb.

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

PAUL MARIE JOSEPH JUGE.
ALPHONSE EUGÈNE GRISEL.

Witnesses:
EDWARD P. MACLEAN,
PAUL DE MESTRAL.