(No Model.)

W. P. KOOKOGEY.

INCANDESCENT LAMP.

No. 351,869. Patented Nov. 2, 1886.

Fig. 1.

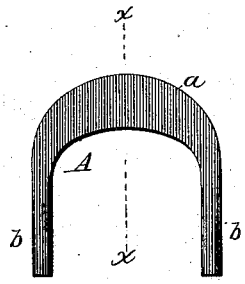


Fig. 2.

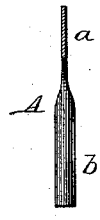
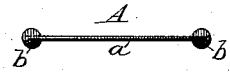


Fig. 3.



Witnesses:

James F. Duvall

Walter J. Dodge

William P. Kookogey.
Inventor,

by Dodger Son,

his Attys.

UNITED STATES PATENT OFFICE.

WILLIAM P. KOOKOGEY, OF BROOKLYN, NEW YORK.

INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 351,869, dated November 2, 1886.

Application filed June 12, 1886. Serial No. 204,982. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. KOOKOGEY, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification.

My invention relates to filaments or light-giving bodies for incandescent electric lights; and the invention consists in a filament having a very thin but broad middle portion to produce a large radiating-surface with little resistance, and having its ends or points of attachment thickened to prevent burning away, all as hereinafter set forth.

Prior to this invention incandescing lamp-filaments have been made in a variety of forms, and, among others, in the form of a flat strip widest at its mid-length and narrowing gradually toward its ends, or in the shape of a slender thread having its ends thickened to prevent burning away. The more common forms, however, have very small bodies, and consequently offer an exceedingly high resistance, besides being difficult to produce and liable to be destroyed in a short time.

My invention is designed to produce a filament of low resistance but of large radiating or light-giving surface. This I find produces a light more nearly resembling in appearance the ordinary gas-light, which is commonly deemed desirable.

In the drawings, Figure 1 is a face view of my improved filament; Fig. 2, a cross-section of the same on the line *x x* of Fig. 1; Fig. 3, a top edge or plan view of the filament.

A indicates the filament as a whole, composed of a crescent-shaped body, *a*, and ends or terminals *b b*. The crescent shape of body *a* causes the light to assume a curve or arched form not unlike that of a gas-flame, and the broad flat surface gives a large radiating-face, and consequently large amount of light. Being wider in the middle than elsewhere, the greatest amount of light will be at the middle, and will gradually lessen toward the ends or terminals *b b*. The ends *b b* are thickened in any convenient manner, according to the material of which the filament is made.

In practice I prefer to cut or form the filament from bond tissue or other tough and fibrous paper, and when such material is employed the ends *b b* may be thickened by rolling, folding, or building up of different thicknesses, and after being brought to proper form the whole is carbonized in the usual way, when it is ready for use.

The body portion should be made as thin as practicable, and the ends should be made to present as great or greater cross-section (though in different form) in order that there may not be undue resistance and consequent burning out at the points of attachment—a fault common to many lamps heretofore made.

It is not essential that the filament be curved, nor that, if curved, it be set with the bowed side uppermost.

The essential feature of the invention consists in making the filament wider or broader at its middle than at its ends and thickening said ends to prevent undue resistance to the electric current thereby.

I do not claim, broadly, either the widening of the central portion or the thickening of the end portions of the filament, separately considered, my purpose being to produce a filament which shall combine the advantages and avoid the objectionable features of both types heretofore used, as above mentioned.

Filaments having the broadened middle portion without the thickened ends offer undue resistance and rapidly burn away at the ends, and do not give the greatest intensity of light in the broad middle portion, where it should be given. Filaments having slender thread-like bodies and thickened ends also offer undue resistance, and do not offer the extent of radiating or illuminating surface that is desirable. Filaments constructed according to my invention are not liable to burn away at the ends sooner than elsewhere, and they give a larger radiating-surface, which is heated to a greater degree, and consequently rendered more highly luminous than other portions. Thus I produce a filament unlike any heretofore known and possessing marked advantages over any other known to me.

Having thus described my invention, what I claim is—

1. A filament for incandescing electric lamps having its middle portion made broader than its ends and its ends made thicker than its middle portion, substantially as and for the purpose set forth.

2. The herein-described incandescing electric-light filament, consisting of crescent-shaped body *a* and thickened ends *b b*.

3. A carbonized-paper filament for incandescing electric lamps having a thin and broad middle portion and narrow thickened ends.

WM. P. KOOKOGEY.

Witnesses:
WILLIAM W. DODGE,
WALTER S. DODGE.