(No Model.)

# J. BRADLEY.

## INCANDESCENT LAMP.

No. 590,786. Patented Sept. 28. 1897.

*Fig. 1.*

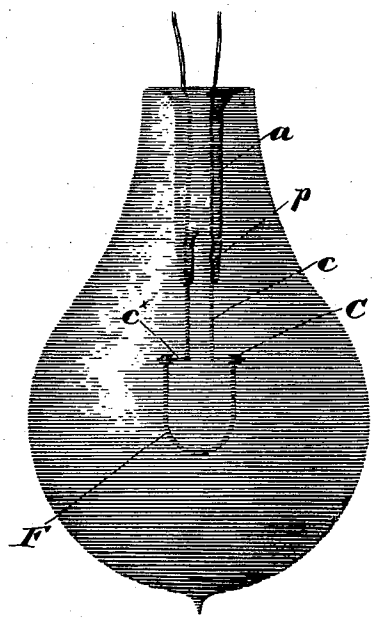
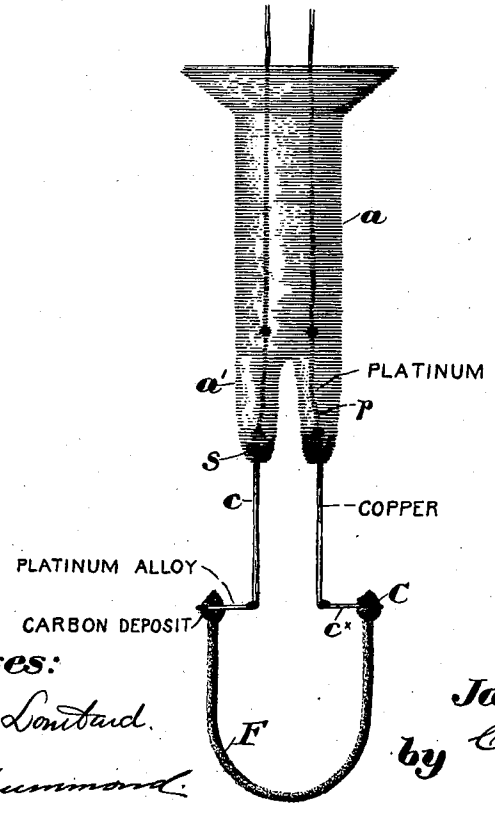



*Fig. 2.*




*Witnesses:*
Walter E. Lombard.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JAMES BRADLEY, OF BOSTON, MASSACHUSETTS.

## INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 590,786, dated September 28, 1897.

Application filed October 15, 1896. Serial No. 609,013. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES BRADLEY, a subject of the Queen of Great Britain, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Incandescent Lamps, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to incandescent electric lamps; and it has for its object the cheapening of the construction thereof without any deterioration in the quality.

An important item of expense in incandescent lamps is the platimum wire, which is used for the leading-in wires and usually for the filament-supports, the filament being attached to the said supports by a carbon deposit precipitated from a hydrocarbon liquid by the action of great heat.

In order to prevent the fusing of the supports, they must be made of some heat-resisting electrically-conductive material, and platinum fulfils these conditions, but on account of its great cost it is objectionable.

In the course of my experiments to find a suitable and cheap substitute for platinum for this purpose I have discovered that an alloy of platinum with a baser metal fills all the requirements and greatly decreases the cost of the lamp.

Figure 1 is a side elevation of an incandescent electric lamp, illustrating my invention; and Fig. 2 is an enlarged view of a lamp-stem, the leading-in wires, filaments, and filament-supports.

The lamp-stem *a* has separated legs *a'*, through which the platinum leading-in wires *p* pass, the latter being united to copper filament supports or wires *c*, sealed in the legs *a'*, at *s*, by suitable cement. At the lower ends the supports *c* are soldered to heat-resisting tips $c^{\times}$, laterally extended in opposite directions, and to the tips the ends of the filament F are secured by deposited carbon C. The filament cannot be attached to the copper supports *c*, as the copper will not stand the necessary heat, so I make the tips of a platinum alloy instead of using platinum, as is now common.

I may use from ten to twenty-five per cent. platinum with from ninety to seventy-five nickel for the alloy, the nickel being very cheap; yet the resulting alloy is highly electroconductive and having great heat-resisting properties fully able to withstand the heat required to attach the filament.

Instead of nickel I may use alloy platinum with silver in about equal proportions.

By the use of the alloy I am enabled to very considerably reduce the cost of construction without any deterioration in the efficiency and durability of the lamp.

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

1. In an incandescent lamp, filament-supports, and tips therefor between the ends of said supports and the filament, and consisting of an alloy of platinum and a baser metal, substantially as described.

2. In an incandescent lamp, platinum leading-in wires, copper filament-supports attached thereto, and electroconductive and heat-resisting tips for said supports composed of a platinum alloy, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES BRADLEY.

Witnesses:

JOHN C. EDWARDS,

AUGUSTA E. DEAN.