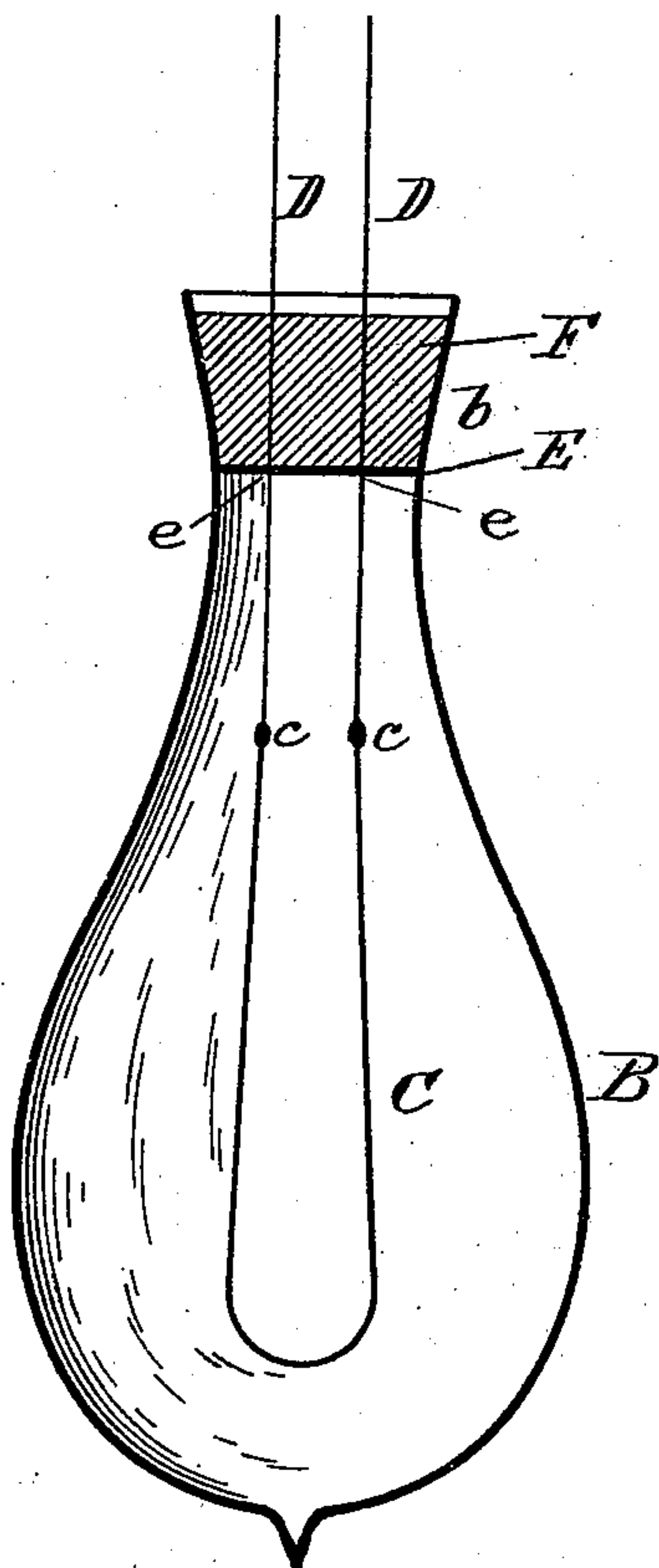


(No Model.)

W. E. NICKERSON & E. E. CARY.
INCANDESCENT ELECTRIC LAMP.

No. 501,529.

Patented July 18, 1893.



WITNESSES.

Frank H. Parker
Frank G. Hattie

INVENTORS.

William Emery Nickerson
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UNITED STATES PATENT OFFICE.

WILLIAM EMERY NICKERSON, OF CAMBRIDGE, AND EDWARD EGBERT CARY,
OF BOSTON, MASSACHUSETTS.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 501,529, dated July 18, 1893.

Application filed March 29, 1893. Serial No. 468,142. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM EMERY NICKERSON, of Cambridge, county of Middlesex, and EDWARD EGBERT CARY, of Boston, county of Suffolk, State of Massachusetts, have invented a new and useful Improvement in Incandescent Electric Lamps, of which the following, taken in connection with the accompanying drawing, is a specification.

Our invention relates to an improvement in the manufacture of incandescent electric lamps, and consists in the use of a non-conducting flexible disk of laminated structure and glass-like reflecting surface to support a fusible plug, the function of said plug being, to hold the leading-in wires and to close the neck of the lamp and render it air tight.

Our invention is illustrated in the accompanying drawing, which shows in vertical section the improvement to which our invention relates.

In the drawing, B is the glass globe of an incandescent electric lamp, having a conical neck *b*. C is the filament and D D the leading-in wires to which the filament is attached at *c c*. E is a disk or plate of such a size as to fit into the conical neck of the lamp globe, and through which the leading-in wires D D pass at *e e*. This disk serves incidentally to support the leading-in wires during the process of manufacture, and also serves to prevent the cement plug F from running into the lamp when poured in the melted state into the lamp neck.

In order that the disk may fit the walls of the lamp neck sufficiently tight to prevent the melted cement from running into the lamp during manufacture, it must be somewhat flexible. To secure the necessary flexibility we use a disk of laminated structure, by which the flexibility required is obtained. In order that the disk may reflect as much of the heat of the filament as possible it must have a vitreous or glass-like surface. This highly reflecting surface tends to prevent the heat from the filament from passing into the cement.

We have found by experiments, that mica possesses the required characteristic and is exceedingly well adapted to be used for a disk to support a plug of fusible cement for closing the neck of the lamp, since it contains

little or no matter which is volatile or affected in any way by heat, until a very high temperature has been attained. Moreover it is a non-conductor and is furnished by nature in a form from which the disks may be stamped with great facility and at a moderate expense. Its flexibility arising from its laminated structure is just sufficient to enable it to close the neck of the lamp globe tight enough to prevent the melted cement from running into the lamp during manufacture, while its glass-like surface causes it to reflect most of the radiant heat of the incandescent filament, rather than allow it to pass into and soften the cement.

We claim—

1. In an incandescent electric lamp the combination of a flexible non-conducting disk of non-volatile substance having a laminated structure and a glass-like reflecting surface, said disk being located within the neck of the lamp and forming a part of the inclosing wall of the vacuum chamber and supporting a plug of fusible cement by which the lamp is sealed air-tight; with a lamp globe having a neck adapted to retain the said disk, and said cement, substantially as and for the purpose set forth.

2. In an incandescent electric lamp, the combination of the glass globe B, having a neck adapted to receive a cement supporting disk and cement plug, the filament C and the leading-in wires D D; with the fusible cement plug F and the flexible non-conducting disk E of a non-volatile substance having a laminated structure and glass-like reflecting surface, located within the neck of the lamp and forming a part of the inclosing wall of the vacuum chamber and supporting the said cement plug and the said leading-in wires, substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 27th day of March, A. D. 1893.

WILLIAM EMERY NICKERSON.
EDWARD EGBERT CARY.

Witnesses:

FRANK G. PARKER,
FRANK G. HATTIE.