(No Model.)

J. E. CRIGGAL.

INCANDESCENT ELECTRIC LAMP.

No. 523,305. Patented July 17, 1894.

Fig. 1.

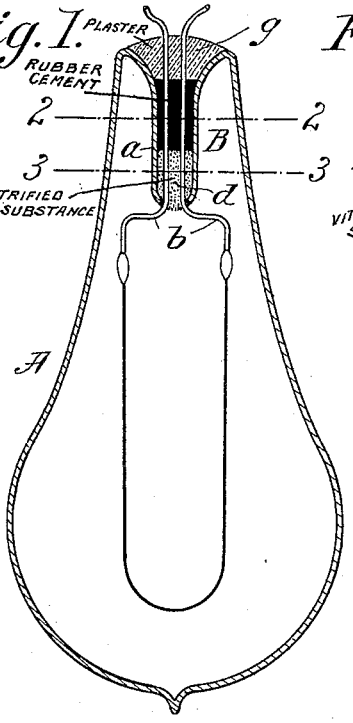


Fig. 2.

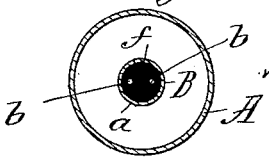


Fig. 3a.

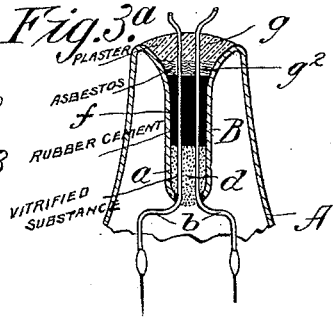


Fig. 3.

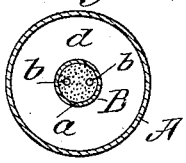


Fig. 4.

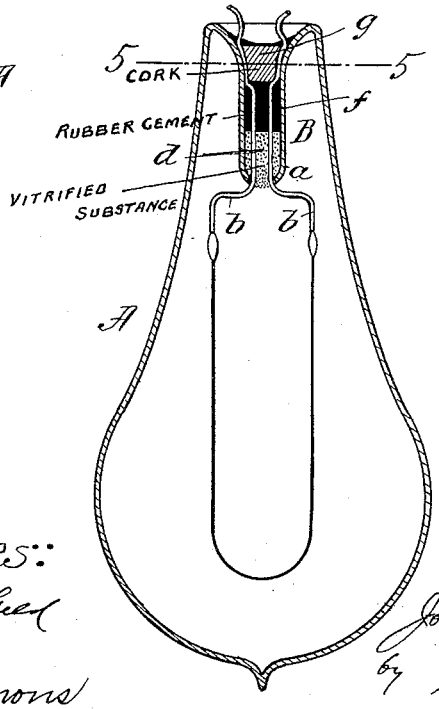
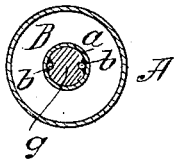


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN E. CRIGGAL, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE DAVIS ELECTRICAL WORKS, OF SAME PLACE.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 523,305, dated July 17, 1894.

Application filed June 11, 1894. Serial No. 514,140. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. CRIGGAL, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

The object of this invention for improvements in electric incandescent lamps is to provide a construction of "mount" for the lamp which permits the successful use of iron or steel leading-in wires, or some leading-in wires other than platinum, the mount effectually excluding the air under any expansions or contractions thereof, or of the leading-in wires, and affording perfect insulation of the leading-in wires from each other without embodying two separated glass tubes as has been heretofore proposed in certain and various other constructions of incandescent lamps having in view the same objects and advantages as the present invention. And the invention consists in the construction of the mount of the lamp, all substantially as will hereinafter more fully appear and be set forth in the claims.

Reference is to be had to the accompanying drawings forming part of this specification in which the improved lamp is fully and clearly illustrated.

Figure 1 is a central vertical section through the improved lamp. Figs. 2 and 3 are cross sections on lines 2—2, and 3—3, Fig. 1. Fig. 3^a is a sectional view of the mount showing a similar construction to that of Fig. 1 but comprising a supplemental layer of material for the more effective closure of the mount. Fig. 4 is a sectional view similar to Fig. 1 but showing a slight modification as consisting in a substitution in the outer stoppering material for the mount. Fig. 5 is a cross section on line 5—5, Fig. 4.

In the drawings, A represents the bulb, or globe, of the lamp, and B the mount which comprises the single tube, *a*, of comparatively large diameter longitudinally through which the leading-in wires, *b*, *b*, of iron, or steel, run in separation and usually in parallelism. The mount is closed and the leading-in wires insulated, the one from the other, by the provision in, and the combination with, the tube essentially of a column of vitrified substance, *d*, and an overlying column of a non-hardening rubber cement, *f*; and in addition to these there is a body or layer, *g*, of an appropriate stoppering material at the mouth of the mount for the retention of the rubber cement.

The vitrifiable material, *d*, is, in practice, provided in the mount previous to the connection of the mount in the lamp, and consists, for instance, of a quantity of fine silica together with a flux of borax which, while in the mount tube, is subjected to sufficient heat to vitrify the silica. The rubber cement is of a character to remain plastic and viscous.

The stoppering material for the retention of the non-hardening rubber cement, as indicated in Fig. 1, consists of a layer of plaster embedded in the flaring mouth of the mount-tube and directly next to the cement; this is adequate and sufficient in ordinary occasions, although to render the mount more permanent a layer, g^2, of asbestus, as seen in Fig. 3^a, is interposed between the plaster and plastic rubber cement. This material, being non-absorptive, prevents the plaster from in any measure drawing the life out of the rubber cement.

In Figs. 4 and 5, a stopper of cork is indicated as closing the mouth of the mount tube against the displacement of the cement.

Lamps, substantially as described, have been constructed and subjected to protracted use with the best results, and it becomes apparent that in view of this important fact a lamp with the mount consisting of but a single tube having the iron leading-in wires and means for rendering them as efficient as platinum and perfectly insulated, without the use of two tubes, without the employment of mercury (which while somewhat expensive is also hard to hold in confinement) and which means consists in the vitreous substance in combination with the suitably stoppered rubber cement, is capable of production at a cost far below any lamp embodying in any extent, however economical, leading-in wires of platinum.

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

1. A mount for an incandescent electric lamp comprising a single tube of glass, the leading-in wires extending in separation longitudinally through said tube, a vitrified substance embedded within the tube, and a body of rubber cement also contained in said tube, substantially as described.

2. A mount for an incandescent electric lamp comprising a single tube of glass, the leading-in wires extending in separation longitudinally through said tube, a vitrified substance and a body of rubber cement contained in said tube, and a body of stoppering material for retaining the cement, substantially as described.

3. A mount for an incandescent electric lamp comprising a single tube of glass, the leading-in wires extending in separation longitudinally through said tube, a vitrified substance and a body of viscous rubber cement contained in said tube, a layer of asbestus above the cement, and a body of plaster above the asbestus and closing the mouth at the top of the tube, substantially as described.

4. In an incandescent electric lamp, a tube of glass having the leading-in wire which is extended longitudinally through it, a vitrified substance in the lower portion of the tube, a body of rubber cement next thereabove and a body of plaster closing the mouth at the top of the tube, substantially as described.

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