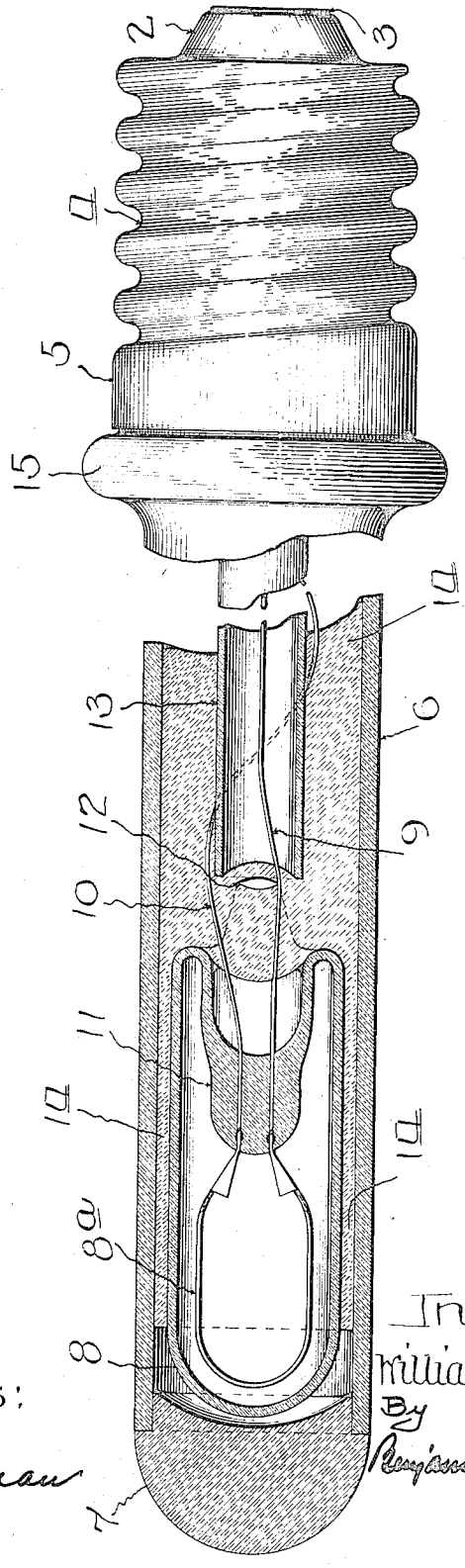
W. J. CAMERON.

INCANDESCENT ELECTRIC LAMP.

APPLICATION FILED FEB. 14, 1916.

1,208,743.

Patented Dec. 19, 1916.



Witness:

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UNITED STATES PATENT OFFICE.

WILLIAM J. CAMERON, OF CHICAGO, ILLINOIS.

INCANDESCENT ELECTRIC LAMP.

1,208,743. Specification of Letters Patent. Patented Dec. 19, 1916.

Application filed February 14, 1916. Serial No. 78,125.

To all whom it may concern:

Be it known that I, WILLIAM J. CAMERON, a subject of the King of Great Britain, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

My present invention has relation to improvements in the construction of incandescent electric lamps and has for its object the provision of such a lamp which shall be particularly suitable for use in dental surgery, and, in fact, in surgical operations of a certain class generally.

The special object I have had in view is the provision of a lamp of very small dimensions. My lamp may be easily made with a quarter inch transverse section and as long as desired, a very useful length being some five inches.

Other objects of my invention are to construct the lamp so that the radiation of heat therefrom is reduced to a minimum, and to secure the various parts together in such a manner that there is no relative motion between the parts.

Another object to be secured is to inclose and hermetically seal the various portions of my lamp in a liquid-resisting casing which will permit of the same being sterilized by subjecting to steam or boiling water or immersion in a suitable sterilizing solution. By making the side walls of the inclosing casing of a white material and the end thereof of clear glass of a lenticular form, I have materially increased and controlled the illumination so as to be able to more easily direct it to the particular locality under inspection.

I attain the aforementioned objects by means of the structure illustrated in the accompanying drawing, the same showing the outer of filament end of a lamp embodying my invention in longitudinal section and the threaded plug end thereof in elevation. The central portion of the lamp has been broken away and the respective ends shown on an exaggerated scale for greater clearance.

The lamp consists of an outer casing comprising a screw plug having a central non-conducting vitreous or porcelain core, 2, with a central terminal or contact, 3, surrounded by a threaded metallic casing, 4, the upper or inner portion, 5, of which is adapted to receive the end of the lamp stem casing, which is preferably cemented therein by means of a suitable moisture and chemical resisting cement.

The stem and lamp casing consist of a tube, 6, preferably of white glass, of a desired diameter (approximately a quarter of an inch), the outer end of which is closed by cementing or fusing therein a lenticular plug, 7, of clear glass.

The bulb, 8, is of preferably cylindrical form so as to secure a greater length of filament, 8^a, without adding to the diameter. The conductors, 9 and 10, pass downward through the inturned filament supporting base, 11, and are kept separate by leading them respectively on either side of a downwardly and inwardly turned teat, 12. The teat, 12, abuts the end of a glass tube, 13, which extends to the core, 2, of the plug.

The conductor, 9, is carried through the bore of the tube, 13, to the base where it is attached to the central terminal or contact, 3, while the conductor, 10, is preferably wound spirally upon the outside of the tube, 13, and its lower end secured to the threaded metallic casing, 4.

After the bulb, conductors and central tube have been arranged, as above described, there is cast about them sufficient suitable cement or plaster, 14, to form them into a cylinder which will just fit within the bore of the casing tube, 6. The composition of the cement or plaster may be varied, but, a cement or plaster having a considerable proportion of carbonate of magnesium has been found satisfactory as it prevents the radiation of heat.

After the bulb, tube and conductors have been cast in the plaster cylinder, the cylinder is inserted into the casing tube, 6, and the end thereof is inserted and cemented in the inner portion, 5, of the threaded casing, 4. A bead, 15, is preferably formed near the lower end of the tube, 6, which abuts the end of the threaded casing and somewhat strengthens the structure.

It will now be perceived from the description taken in connection with the drawings, that I have provided a lamp which will radiate but little, if any, heat, which may be sterilized by steaming, boiling or by immersion in chemicals, which may be made with a very small diameter, and which will fur-

nish a considerable and sufficient amount of illumination. In other words, I have provided a lamp having characteristics which will render it suitable for making examinations in the mouth, nose, and throat, and elsewhere, and may be easily left in a sterile condition.

What I claim is:—

1. An incandescent electric lamp comprising a plug, a glass tube extending therefrom, a bulb, a filament therein, conductors leading from said filament and out of said bulb, respectively upon the outside and inside of said glass tube to terminals in said socket, a cylinder of heat-insulating material cast about said bulb, conductors and tube, and a tubular casing having a lenticular closure in the end thereof surrounding the cylinder of heat-insulating material and being cemented in said plug.

2. An incandescent electric lamp comprising a plug, a glass tube extending therefrom, a bulb, a filament therein, conductors leading from said filament and out of said bulb respectively upon the outside and inside of said glass tube to terminals in said socket, a cylinder of heat-insulating material cast about said bulb, conductors and tube, and a tubular casing of white glass, having a lenticular closure of clear glass in the end thereof surrounding the cylinder of heat-insulating material and being cemented in said plug.

3. An incandescent electric lamp comprising a plug, an insulating tube extended therefrom, a light bulb, conductors leading from said bulb to said plug and respectively disposed exteriorly and interiorly of said tube, a tubular casing extending from said plug and surrounding said bulb, conductors and tube and provided with a light-transmitting member at its outer end, and heat-insulating substance interposed between said casing and the elements inclosed therein.

4. An incandescent electric lamp comprising an outer casing, a light bulb disposed therein, an insulating tube also disposed in said casing, conductors leading from said bulb and respectively disposed exteriorly and interiorly of said tube, heat-insulating substance interposed between said casing and the elements inclosed therein, and means connecting said conductors with a suitable electric circuit.

Signed at Chicago, county of Cook and State of Illinois, this 10th day of February 1916.

WILLIAM J. CAMERON.

Witnesses:
E. K. LUNDY, Jr.,
WM. HAROLD EICHELMAN.