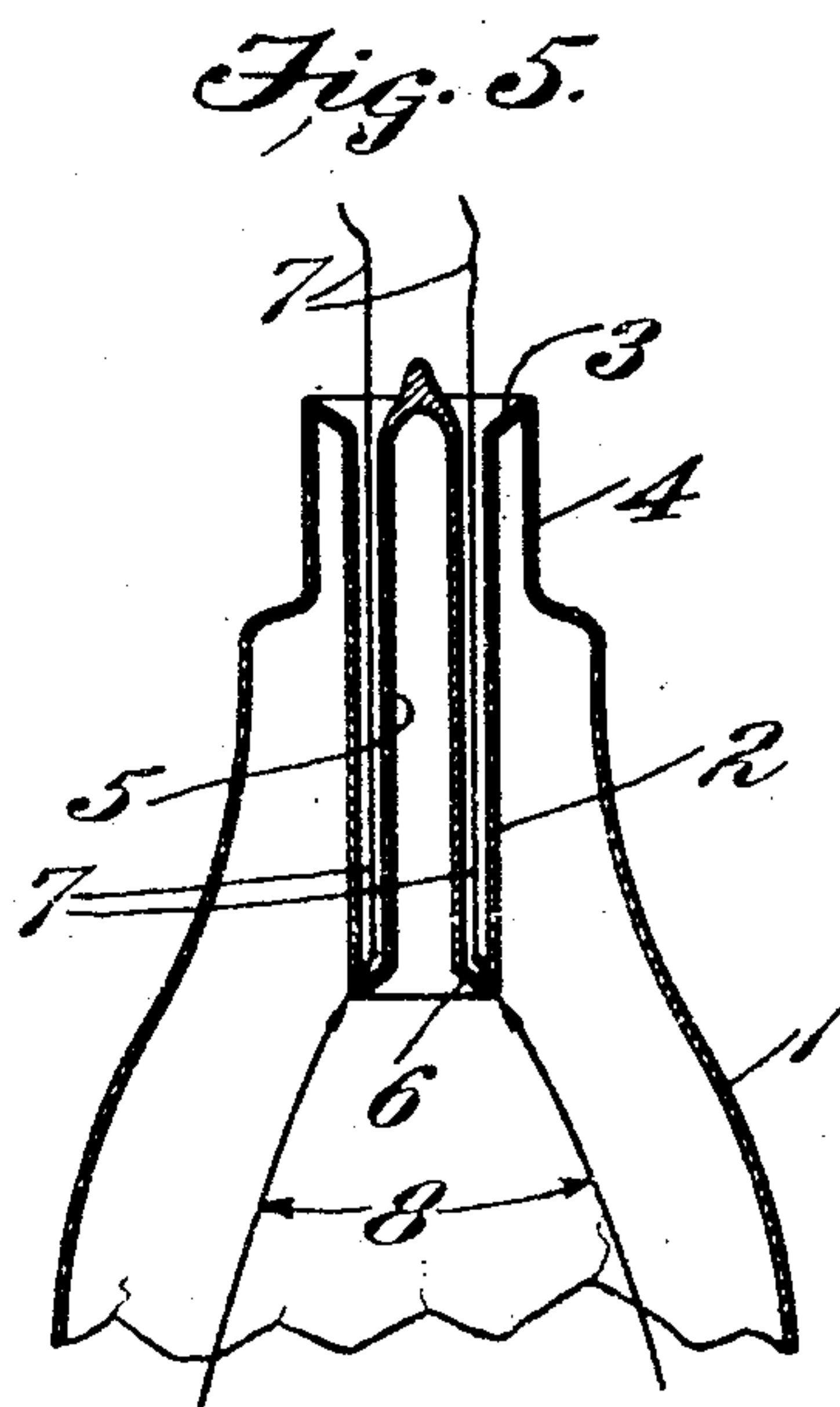
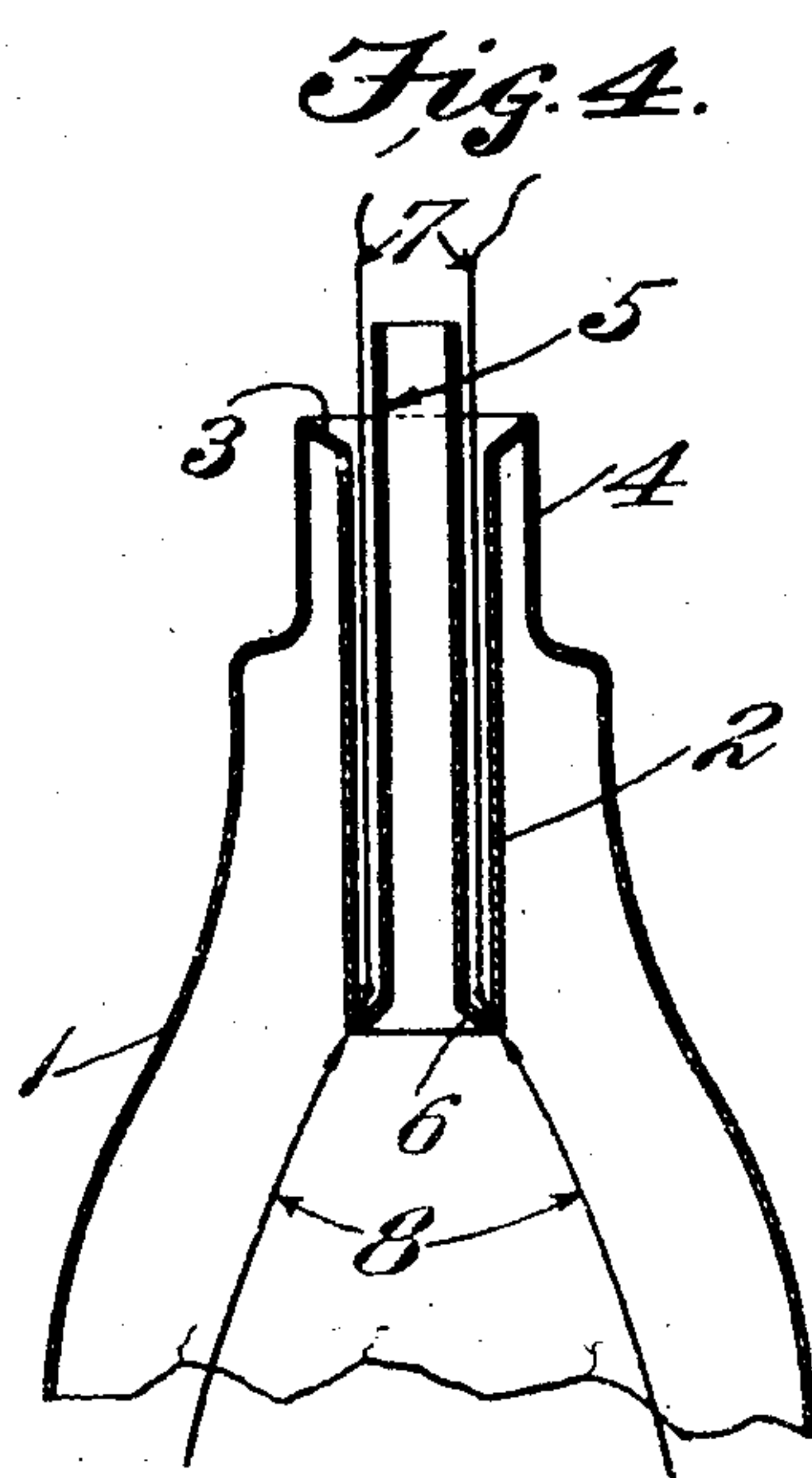
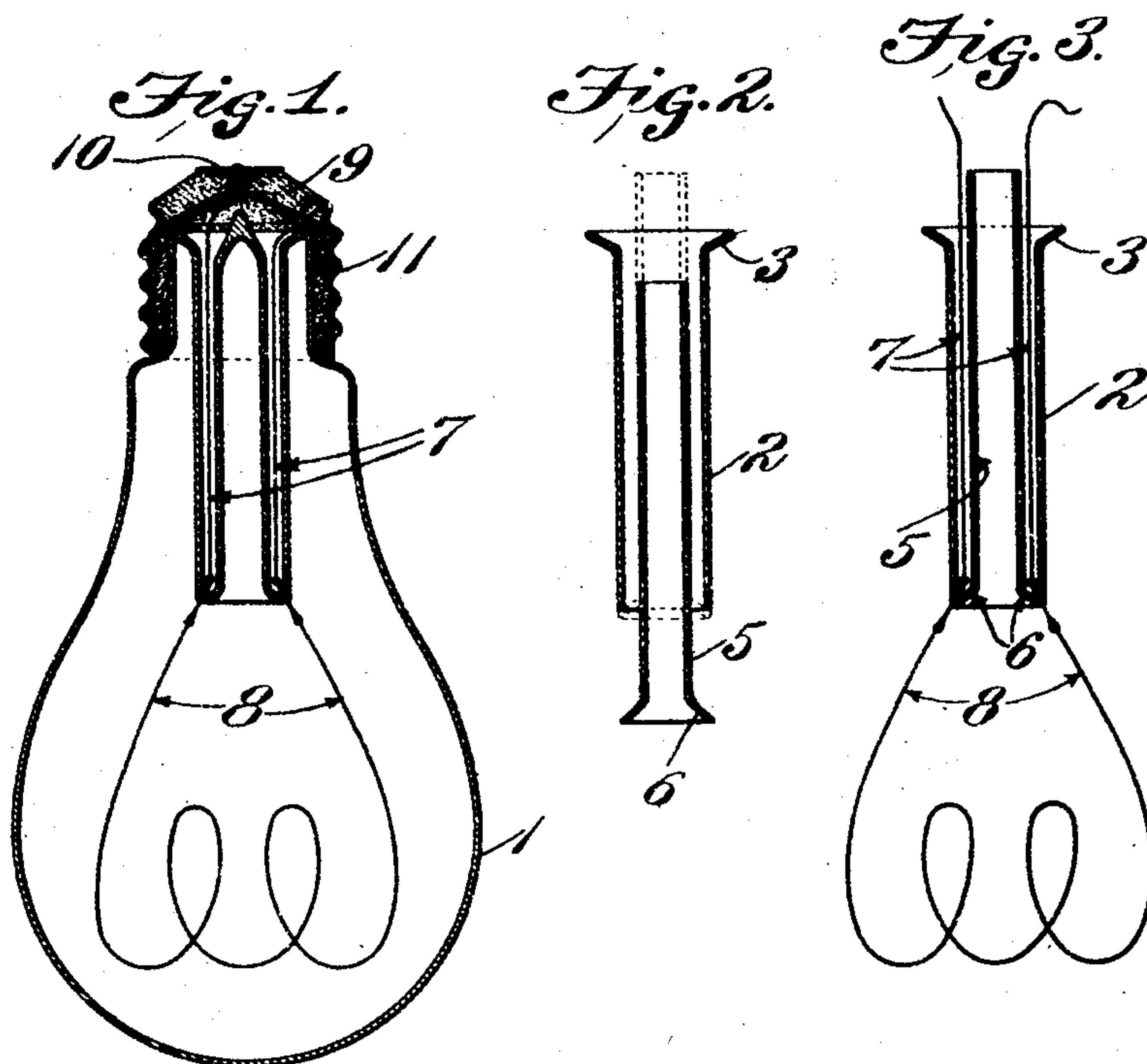


No. 785,157.

PATENTED MAR. 21, 1905.

J. M. DAVEY.
VACUUM LAMP.

APPLICATION FILED JUNE 27, 1903.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH M. DAVEY, OF ST. LOUIS, MISSOURI.

VACUUM-LAMP.

SPECIFICATION forming part of Letters Patent No. 785,157, dated March 21, 1905.

Application filed June 27, 1903. Serial No. 163,377.

To all whom it may concern:

Be it known that I, JOSEPH M. DAVEY, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Vacuum-Lamps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view of the completed lamp. Fig. 2 is a sectional view of the tubes between which the leading-in wires are located, the inner tube being shown separated from the outer tube by full lines and being shown in its service position with relation to said outer tube by dotted lines. Fig. 3 is a sectional view showing the said tubes in their service position and also showing the leading-in wires and the filament connected to the same. Fig. 4 is a view showing the said tubes connected to the bulb before the bulb has been evacuated, and Fig. 5 is a view generally similar to Fig. 4 and showing the device after the bulb has been evacuated and the inner tube has been closed.

This invention relates to improvements in vacuum-lamps, such as the well-known incandescent electric lamps, and more particularly that type of lamp wherein the formation of a teat incident to the sealing of an evacuating-opening is obviated.

To this end and also to improve generally upon devices of the character indicated, the invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 1 indicates a bulb similar to those employed in the construction of incandescent electric lamps, wherein no opening is left in the bottom of the same for the purpose of evacuating it. An outer tube 2 lies within said bulb and has its outer or upper end flared or flanged, as shown at 3, said flared portion being of slightly larger diameter than the interior diameter of the neck, so that when said tube is in position the flared portion rests upon the edge of the neck 4 of the bulb, said flared portion of the outer tube be-

ing thus supported while it is being fused to said neck of the bulb. Within said outer tube is an inner tube 5, whose exterior diameter is less than the interior diameter of the outer tube and whose lower or inner end is flared, as shown at 6, said flared portion being of slightly larger diameter than the interior diameter of the tube 5 for the purpose of resting against the lower or inner edge of the outer tube and being fused thereto. The usual leading-in wires 7 extend in the space between the said tubes and project inwardly beyond the tubes in order to permit the customary attachment of the carbon or other filament 8.

In assembling the present lamp the tubes 2 and 5 are placed in the positions in which they are shown by full lines in Fig. 2, and the leading-in wires 7 are threaded through the space between said tubes, after which the tubes are brought together, as shown in Fig. 3, and the flared portion 6 of the inner tube is fused to the outer tube. The carbon filament 8 is then attached to the projecting inner ends of the leading-in wires. After this has been done the connected tubes, with their carried leading-in wires and filament, are then inserted in the bulb 1 through the open neck 4 of the latter, as shown in Fig. 4, and the flared portion 3 of the outer tube is fused to the edge of said neck. The bulb is then evacuated through the inner tube 5, and after this has been done the outer end of said inner tube is closed by fusing or otherwise, as shown in Fig. 5. The usual porcelain cap 9 and the customary contact-pieces 10 and 11 can then be placed upon the bulb in the customary manner.

A lamp constructed in accordance with the present invention entirely obviates the teat upon the bulb and provides for conveniently evacuating said bulb, the various parts of the lamp being conveniently arranged and easily connected together. Furthermore, the fused end of the evacuating-tube 5 is protected by the porcelain cap 9.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and

described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

In a vacuum-lamp, the combination with a bulb having a neck portion, of a tube 2 of smaller diameter than said neck extending into said bulb and having its outer end flared 10 outwardly as at 3, said flared portion being of larger diameter than the interior diameter of the neck and connected at its edge to the outer end of said neck, the inner or lower end of said tube being substantially flat, an inner 15 tube 5 of smaller diameter than the tube 2

and of greater length, said inner tube 5 having its inner end flared outwardly as at 6 and of a diameter to directly underlie the inner end of the tube 2 and connected directly thereto, and leading-in wires secured in position intermediate the flared end 6 and the inner end of the tube 2 by the union therebetween.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 25th day of June, 1903.

JOSEPH M. DAVEY.

Witnesses:

GALES P. MOORE,
GEORGE BAKEWELL.