

**No. 683,420.**

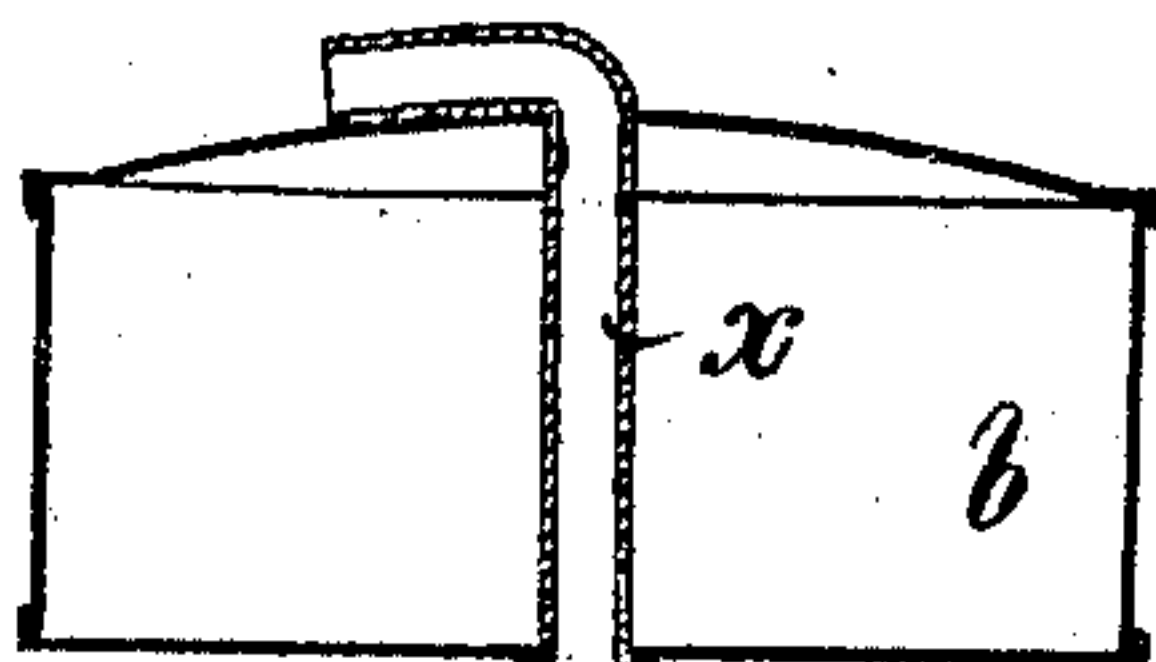
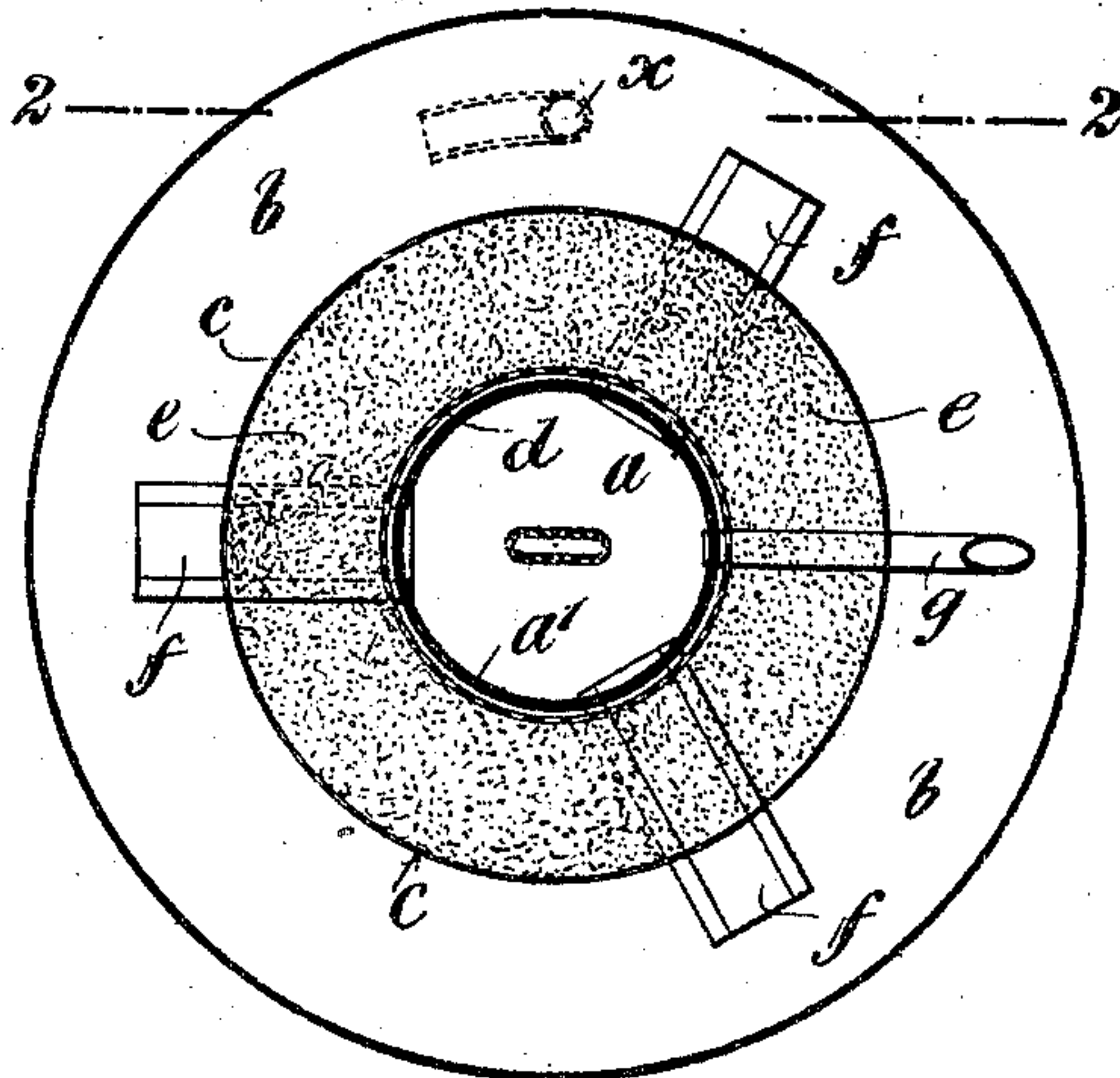
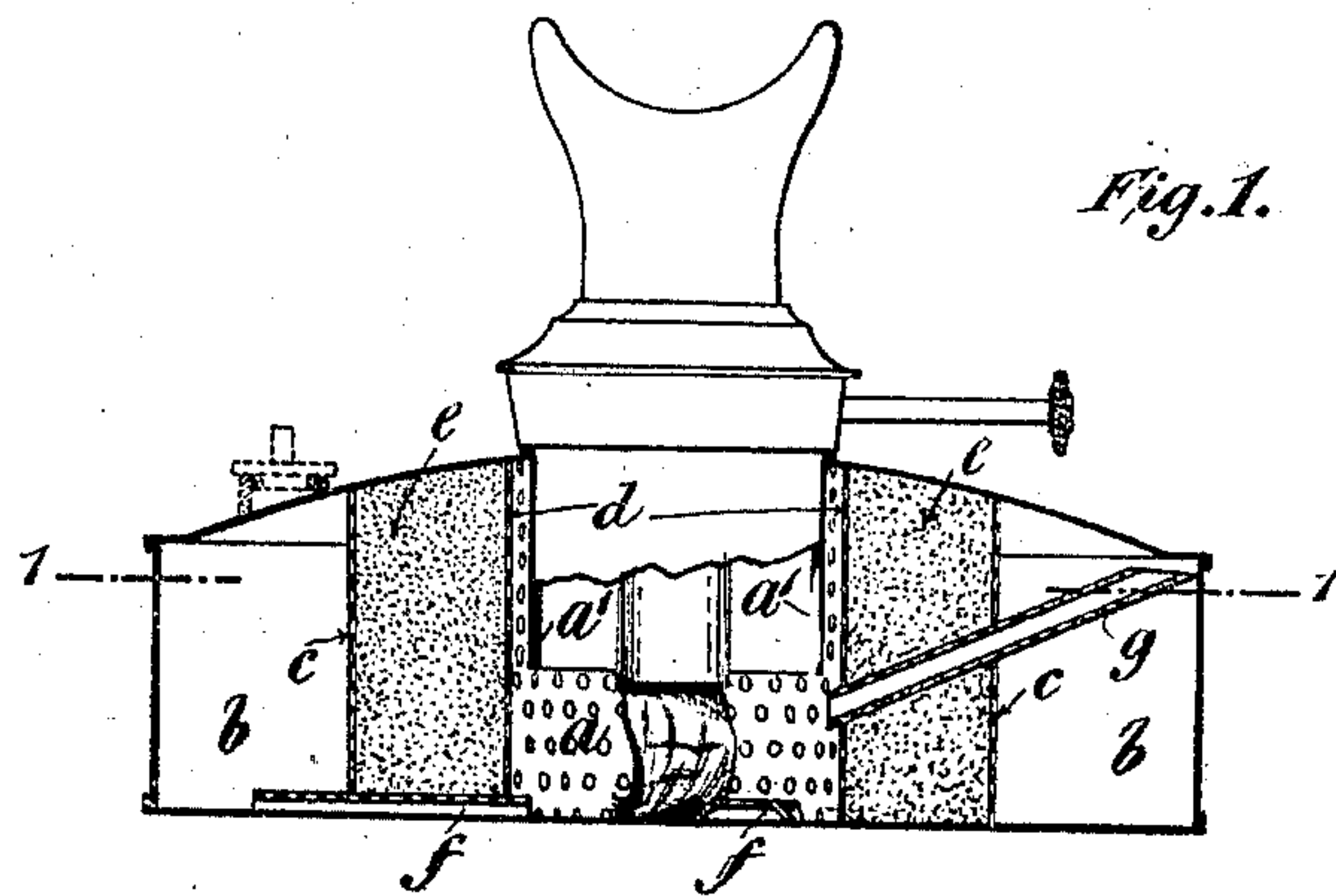
**Patented Sept. 24, 1901.**

**B. H. COPELAND.**

**LAMP FOR BURNING PETROLEUM, KEROSENE, &c.**

(Application filed Feb. 3, 1900.)

(No Model.)



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## LAMP FOR BURNING PETROLEUM, KEROSENE, &c.

SPECIFICATION forming part of Letters Patent No. 683,420, dated September 24, 1901.

Application filed February 3, 1900. Serial No. 3,799. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN HARRIS COPELAND, a subject of the Queen of Great Britain and Ireland, and a resident of 112 Cobden street, in the county borough of Derby, England, have invented certain new and useful Improvements in Lamps for Burning Petroleum, Kerosene, &c., (for which I have applied for provisional protection in Great Britain, bearing date July 13, 1899, No. 15,427,) of which the following is a specification.

The object of my invention is to minimize the risk of explosion attending the upsetting or tilting of such lamps and to prevent their being blown out or the flame being knocked or jerked out, all being rather common occurrences with these lamps, and the latter is sometimes caused by a rush of oil up the wick resulting from the swinging or tilting of the lamp.

My invention may be applied to any of the well-known forms of house or railway lamps, and is also applicable to vehicle-lamps; and it consists, in substance, of an oil vessel or reservoir filled or partly filled with cotton, wool, wadding, sponge, or other absorbent, in the center of which reservoir is a vertical tubular chamber, known as the "wick-chamber," separated from the main oil-container by means of an annular partition formed of wire-gauze or other perforated metal. This wick-chamber passes to or nearly to the bottom of the main vessel or oil-container and is intended to receive the wick, which should be preferably long enough to touch the bottom of the vessel. Any well-known burner and lamp-top may be employed, such as the single or duplex top, and preferably of such construction as to be able to burn without the use of a glass or other chimney. The oil vessel is filled with sufficient oil to thoroughly soak the absorbent packing, enough oil being left in the bottom of the wick-chamber, but not sufficient to rise above the level of the lower end of the air-vent in the side of said chamber—that is to say, so that the bottom end of the wick will be immersed in oil, the level of which will be a little below the lower end of the wick-tube.

If the foregoing instructions are followed, it is almost impossible when using suitable

burners to knock or jar the light out, and there is not the slightest danger of explosion attending the upsetting of such a lamp constructed in accordance with my invention.

I may adopt any suitable system of supplying air to the flame, according to the particular kind of lamps my invention is applied to. For example, in railway-lamps these containers are often used in a close-fitting lamp-bottom, (or exterior case.) In order to allow a free supply of air to the flame in this case, I form an air-inlet tube *x*, as shown in Figure 3 and in dotted lines in Fig. 2, which passes completely through the container from the bottom upward and is then turned or bent over elbow fashion, so as to direct the air away from the flame and not cause flickering.

I may provide a feeder-screw, plug, or other device for access to the oil-chamber and absorbent packing, and my invention may be applied to existing lamps, if desired, as well as to new ones.

Referring to the drawings, which form a part of this specification, Fig. 1 shows a vertical section of a lamp constructed on my system. Fig. 2 shows a horizontal section on line 1 1. Fig. 3 shows a cross-section on the line 2 2 of Fig. 2 of a device for permitting a supply of air to the flame when the container is used in a railway-lamp.

*a* is the wick-chamber, partly formed by the tube *a'*, which is a prolongation of the collar of the burner, and partly by the inner perforated partition *d*.

*b* is the oil-chamber, which is separated from the central wick-chamber *a* by two perforated circular partitions *c d*, preferably of perforated tin-plate or other metal. The annular space between the walls *c d* is filled with a suitable absorbent packing *e*. The oil is poured into the oil-chamber either by feeder-screw from outside or through the wick-chamber after removing the burner, and in the latter case the oil is conducted to the oil-chamber by the ducts *f f f*.

The necessary escape of air or vapor from the oil-chamber *b* is provided for by the air-vent *g*, communicating with the wick-chamber.

In the section shown in Fig. 3, *x* is an air-supply pipe, used when preferred for supply-



ing air to the flame in certain kinds of containers employed for railway use when a tight-fitting external case is used, and such air-supply pipe is as shown in dotted lines in Fig. 2.

5 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lamp, the combination with a suitable burner, of an oil-reservoir supporting the burner above a central wick-chamber having a perforated peripheral wall, an annular body of absorbent material surrounding the perforate wall of the wick-chamber, an annular outer oil-chamber separated from the annular body of absorbent material by a perforate wall, and an air-tube forming a communication between the top of the outer annular oil-chamber and the central wick-chamber, substantially as shown and described.

2. In a lamp, the combination with a suitable burner, of an oil-reservoir supporting the burner above a central wick-chamber having a perforated peripheral wall, an annular body of absorbent material surrounding the perforate wall of the wick-chamber, and an annular outer oil-chamber separated from the annular body of absorbent material by a perforate annular wall, substantially as shown and described.

3. In a lamp, the combination with a suitable burner, of an oil-reservoir supporting the burner above a central wick-chamber having a perforated peripheral wall, an annular body of absorbent material surrounding the perforate wall of the wick-chamber, an annular outer oil-chamber separated from the annular body of absorbent material by a perforate wall, and an air-tube forming a communication between the upper portion of the outer annular oil-chamber and the lower portion of the central wick-chamber, substantially as shown and described.

4. In a lamp, the combination with a suitable burner, of an oil-reservoir supporting the burner above a central wick-chamber having a perforated peripheral wall, an annular body of absorbent material surrounding the perforate wall of the wick-chamber, an annular outer oil-chamber separated from the annular body of absorbent material by a perforate wall, and an air-supply pipe passing through

the reservoir-body, substantially as shown and described.

5. In a lamp, the combination with a suitable burner, of an oil-reservoir supporting the burner above a central wick-chamber having a perforated peripheral wall, an annular body of absorbent material surrounding the perforate wall of the wick-chamber, an annular outer oil-chamber separated from the annular body of absorbent material by a perforate wall, and an air-supply pipe having its outlet and upper end horizontal, passing through the reservoir-body, substantially as shown and described.

6. In a lamp, the combination with a burner, of an oil fount or reservoir having a central wick-chamber on which the burner is removably mounted, an annular outer oil-chamber, and an annular body of absorbent material located between the annular outer oil-chamber and the central wick-chamber, substantially as shown and described.

7. In a lamp, the combination with a burner, of an oil fount or reservoir having a central wick-chamber on which the burner is mounted, an annular outer oil-chamber, an annular body of absorbent material located between the annular outer oil-chamber and the central wick-chamber, and an air-tube forming a communication between the upper portion of the annular outer oil-chamber and the central wick-chamber, substantially as shown and described.

8. In a lamp, the combination with a burner, of an oil fount or reservoir having a central wick-chamber on which the burner is mounted, an annular outer oil-chamber, an annular body of absorbent material located between the annular outer oil-chamber and the central wick-chamber, oil-channels connecting the outer annular oil-chamber and the inner central wick-chamber at the bottom, and an air-tube forming a communication between the upper portion of the annular outer oil-chamber and the central wick-chamber, substantially as shown and described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

BENJAMIN HARRIS COPELAND.

Witnesses:

W. H. BLOCKSIDGE,  
A. P. HIGGINS.