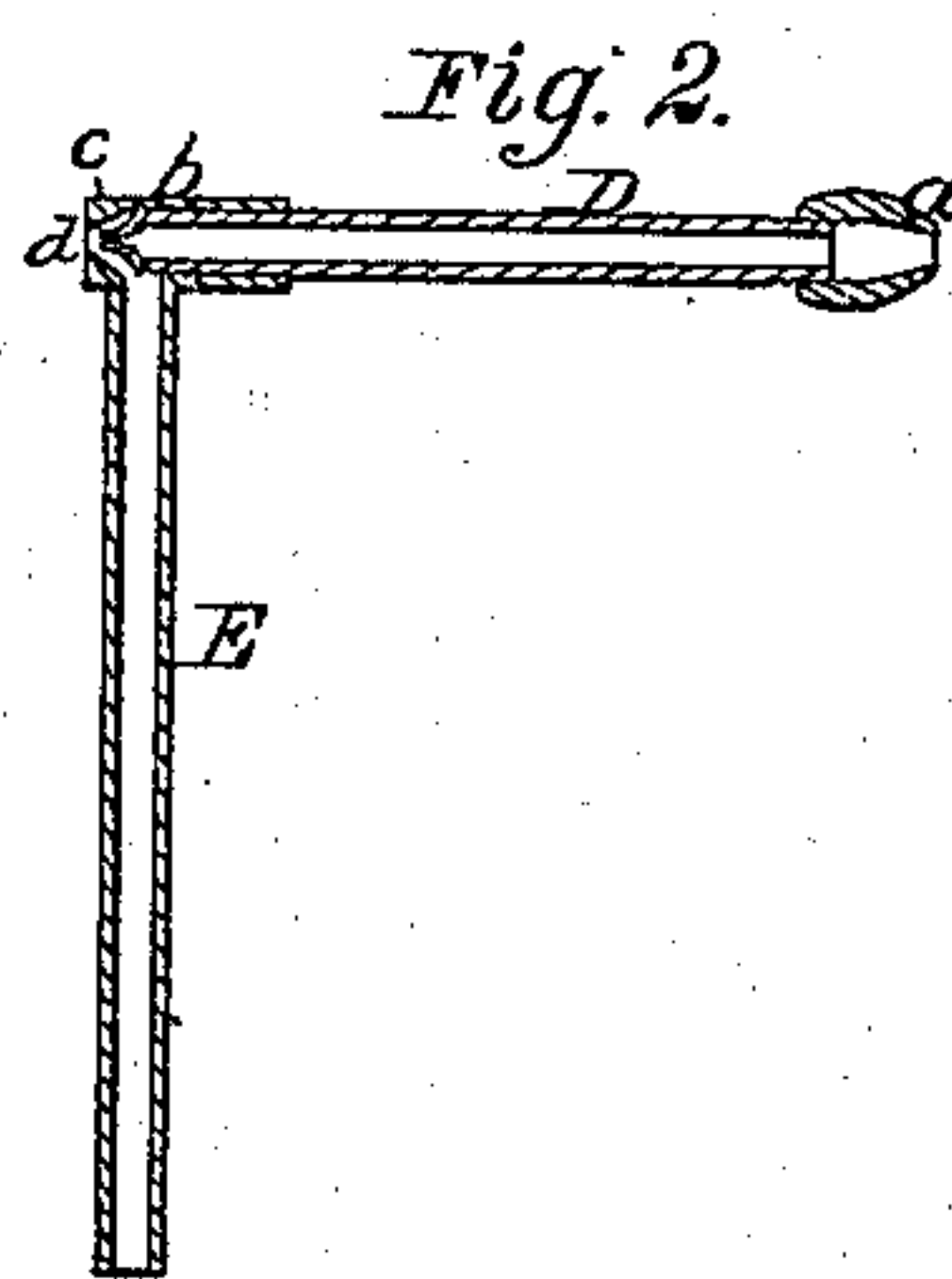
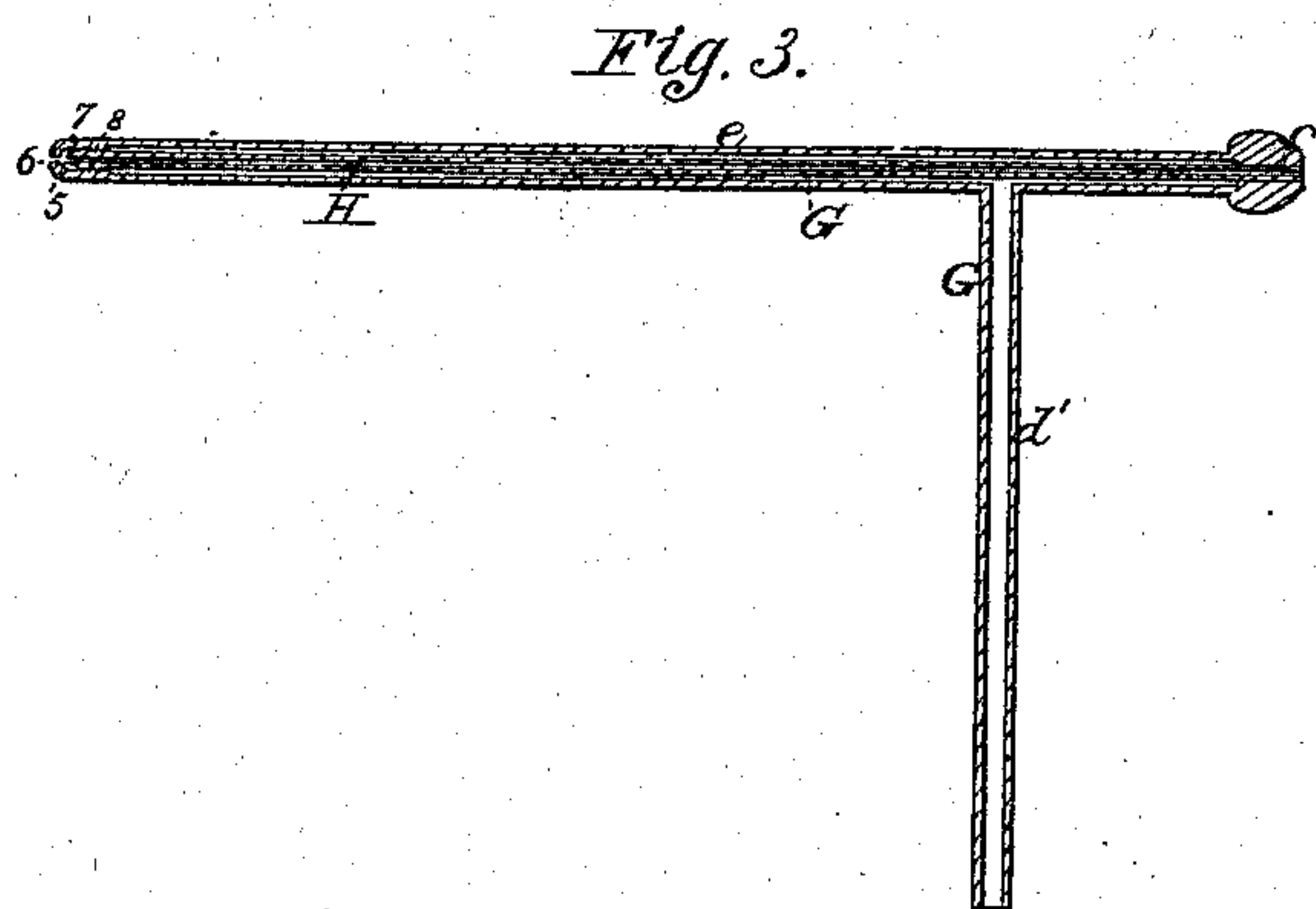
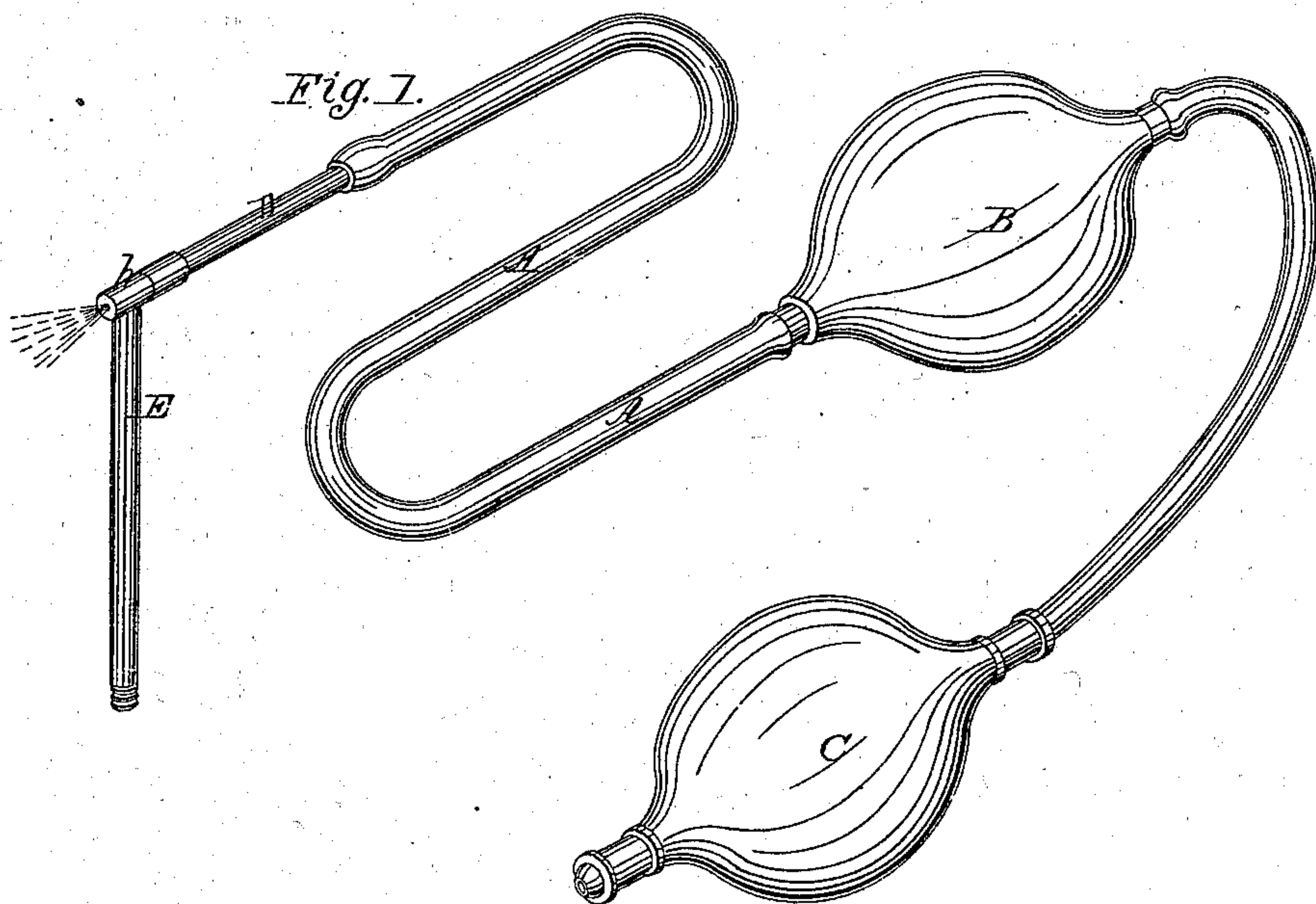


T. J. HOLMES.
ATOMIZING TUBE.

No. 106,587.

Patented Aug. 23, 1870.



Witnesses:
C. E. Bratton.
W. J. Cambridge

Inventor:
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United States Patent Office.

THOMAS J. HOLMES, OF MALDEN, MASSACHUSETTS.

Letters Patent No. 106,587, dated August 23, 1870.

IMPROVEMENT IN ATOMIZING-TUBES

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, THOMAS J. HOLMES, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain improvements in Atomizing-Tubes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of an atomizing-tube of my improved construction.

Figure 2 is a longitudinal vertical section through the center of the same.

Figure 3 is a longitudinal vertical section through the center of an atomizing-tube of different construction.

Atomizing-tubes as heretofore constructed for dissipating into spray and distributing medicinal liquids for inhalation in throat and other diseases, and for diffusing liquid perfumes through the air to render it odorous, are frequently liable to be obstructed by sediment at or near the "liquid point," or discharge orifice, and an inconvenience arises from the trouble and delay incurred in removing the obstruction.

To obviate the above-mentioned difficulty is the object of my invention, which consists in providing one of the tubes with a joint at or near the "liquid-point," in order that it may be readily removed to obtain access to any obstruction at this point; and my invention also consists in so constructing and connecting the air and liquid tubes, that the air will be forced through the air-tube in a line passing centrally through the orifice of discharge or liquid point, whereby the atomizer is rendered lighter and more compact than those as heretofore constructed.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing—

A is a rubber tube, provided with an air-chamber, B, one end of the tube being provided with a bulb, C, while the other end is fitted or sprung over a projection, *a*, screwed on the outer end of a short horizontal tube, D, the inner end of which is provided with a male screw-thread, which turns into a female thread in a short portion, *b*, at right angles to a vertical tube, E, which is to be inserted into the liquid to be atomized or dissipated into spray, by which construction the tube D, denominated the air-tube, may be readily removed to obtain access to the tube E at its junction therewith.

The horizontal tube D is contracted at its inner end, so as to form a very small orifice, *c*, through which air is forced by pressing the bulb C by hand, the point of the air-tube at the orifice *c* extending to or slightly into an orifice, *d*, in the center of the

short portion *b*, through which the contents of the vertical or liquid tube E are driven by forcing a current of air through the air-tube over its top, so as to create a vacuum at this point, the center or axis of the air-tube and that of the short portion *b*, and orifice of discharge or liquid point forming one and the same straight line, by which construction the atomizer is rendered lighter and more compact.

The position of the air and liquid tubes may be reversed, and each tube be employed for performing the office of the other; in which case the projection *a* must be screwed onto the bottom of the liquid-tube, which is provided with a screw-thread for this purpose, in order that the rubber tube A may be connected therewith.

Where the liquid-tube is employed as an air-tube the spray ejected at the discharge orifice is finer than the spray produced when the parts are in the position shown in figs. 1 and 2.

In fig. 3 the construction of my atomizing-tube is modified to render it applicable to throat diseases, *d'* representing the lower or vertical branch of a liquid tube, across the top of which, and connected therewith, extends a horizontal branch tube, *e*, both of which form the liquid-tube G.

Through the center of the horizontal branch *e* passes a small air-tube, H, provided, at its outer end, with a projection, *f*, over which to fit the end of the rubber tube A.

The inner end of the air-tube is contracted to form a small orifice, 5, and projects slightly into the orifice of discharge or liquid point 6 in a cap, 7, on the end of the horizontal branch-tube *e*, the cap being made removable, and screwing over a thread on an enlarged portion of the air-tube, just in the rear of the orifice 5, the portion of the air-tube of small diameter extending a short distance beyond the place where the removable cap 7 screws onto the horizontal branch *e*, and channels 8 being cut across the screw-thread on the enlarged portion of the inner end of the air-tube, by which construction the liquid may flow freely around the air-tube to the liquid-point, the rapid current of air as it passes out of the air point serving to exhaust the air within the liquid tube, and ejecting the liquid in spray from the liquid point, the length of the horizontal branch being sufficient to reach into the throat or other place where the difficulty exists.

It will be seen from the foregoing that, by unscrewing the air-tube or the cap, access is readily obtained to the liquid point, for the purpose of removing any obstruction which may lodge within the liquid tube at its orifice of discharge, while my improved atomizer presents a lighter, more compact and finished appearance, and may be furnished at a less cost than those as heretofore constructed.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

An atomizer, provided with a joint at or near the liquid point or discharge-orifice, substantially as and for the purpose set forth.

Also, the combination of an air-tube and a liquid tube, so constructed and connected that the air will be forced through the air-tube in a line passing cen-

trally through the liquid point or discharge-orifice, substantially as and for the purpose set forth.

Witness my hand this 26th day of July, A. D. 1870.

THOMAS J. HOLMES.

Witnesses:

N. W. STEARNS,

W. J. CAMBRIDGE.