No. 639,024. Patented Dec. 12, 1899.

A. C. EGGERS.

ATOMIZER.

(Application filed Feb. 9, 1899.)

(No Model.)

Fig: 1.

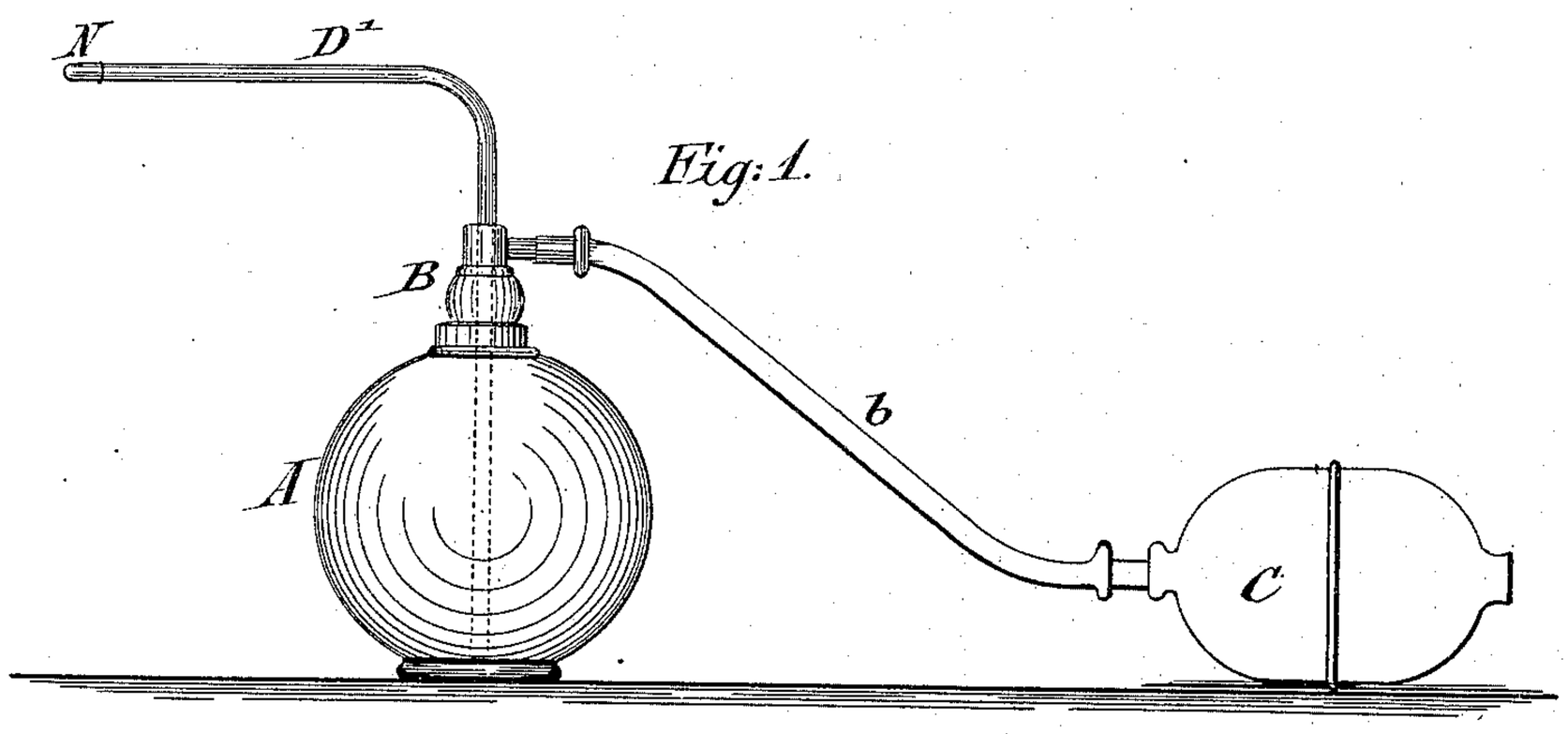


Fig: 2.

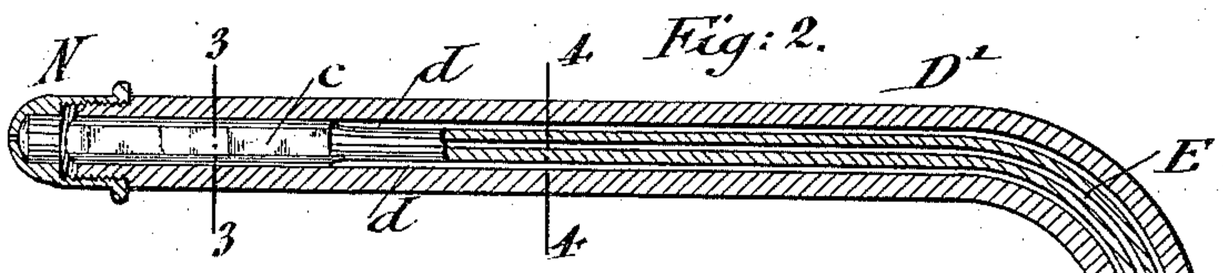


Fig: 3.

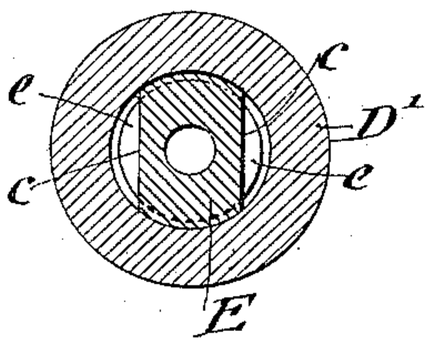


Fig: 4.

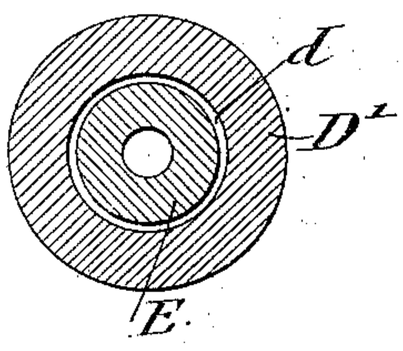
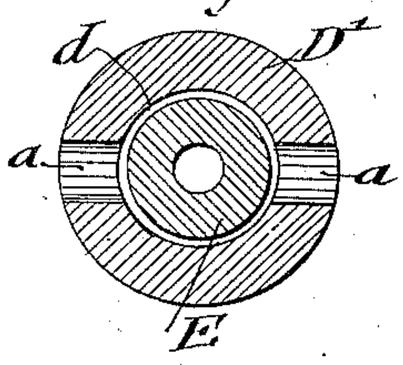


Fig: 5.



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ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 639,024, dated December 12, 1899.

Application filed February 9, 1899. Serial No. 705,029. (No model.)

To all whom it may concern:

Be it known that I, ANTON C. EGGERS, a citizen of the United States, residing in the city of New York, in the borough of Brooklyn and State of New York, have invented certain new and useful Improvements in Atomizers, of which the following is a specification.

This invention relates to certain improvements in atomizers in which a comparatively simple and effective arrangement of the air-tube and suction-tube is carried out, so that the parts may be conveniently assembled and form a durable and effective atomizer.

The invention consists of the combination, with a liquid vessel and means for supplying air under pressure thereto, of a main tube extending into the liquid in said vessel and provided at its outer end with a nozzle, an interior suction-tube within said main tube and serving to close by its lower end said main tube and forming with the lower portion of the same the suction-tube of the atomizer, and means for supplying air under pressure to the annular channel between said main tube and interior suction-tube, above the lower end of the latter, and, further, in certain details of construction and combinations of parts to be more fully described hereinafter and finally pointed out in the claim.

In the accompanying drawings, Figure 1 represents a side elevation of my improved atomizer. Fig. 2 is a vertical longitudinal section through the head of the liquid vessel and the suction and air tubes; and Figs. 3, 4, and 5 are vertical transverse sections on lines 3 3, 4 4, and 5 5, Fig. 2.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a liquid vessel, and B the cap of the same. The cap is connected by the tube *b* with the bulb C, by which air under pressure is supplied to the liquid vessel. Through the cap B extends in downward direction a combined air and suction tube D D′, said tube being made of smaller diameter at its lower part from the cap to the bottom of the liquid vessel A and of a slightly-larger interior diameter at its outer end to the nozzle N. The lower part D of the tube D D′ acts as a suction-tube, while the upper part acts in the nature of an air-tube. The tube D D′ is formed on a mandrel, in which the end extending into the part D is made of smaller diameter than the part within the portion D′, a conical seat being formed in the main tube at the point of connection of the tube portion D with the portion D′. The air-openings *a* at the conical portion permit the entrance of the air to the interior of the tube D′. A smaller tube E forms the continuation of the suction portion D. This tube E is inserted into the outer portion D′ and is provided at its end with a screw-thread that screws into a correspondingly-threaded seat of the portion D, as shown in Fig. 2. The outer end of this interior tube E is flattened at the sides, as shown at *c*, Figs. 2 and 3, and fitted tightly to the end of the portion D′ back of the nozzle, so that narrow channels *e* are formed at both sides of the end of the interior tube E. The air-openings *a* communicate with the annular channel *d*, which is formed between the outer portion D′ and the interior suction-tube E, so that air is supplied through the same to the nozzle, whereby a suction action is exerted on the liquid in the vessel, which is at the same time under pressure of the air supplied by the bulb C to the upper part of the liquid vessel. In this manner an effective lifting action on the liquid is obtained. The atomizing of the liquid is produced by the action of the air on the same when it reaches the nozzle, from which it is discharged in a fine spray.

The connection of the interior suction-tube E with the main suction-tube D is made while both tubes are in a straight condition. After the smaller tube has been screwed into the tube D, near the air-openings *a*, the bending of the tubes D′ and E is accomplished, so that a combined suction and air tube is obtained, in which the lower part D of the main tube D D′ acts in connection with the interior tube E as the suction-tube, while the larger outer portion D′ of the main tube D D′ acts in the nature of an air-tube. The parts can be easily assembled and form a cheap and efficient atomizer for medicinal fluids, perfumery, &c.

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

The combination, with a liquid vessel, and

means for supplying air under pressure thereto, of a cap on said vessel, a main tube passing through said cap and having a smaller-diameter channel at its lower portion and a larger-diameter channel at its upper portion, said lower portion being integral with the upper portion, an interior suction-tube located in the larger channel and of less diameter than the same and connected at its lower end with the lower portion, air-openings in the wall of the main tube located below the cap and above the junction of the interior tube with the lower portion of the main tube, and a nozzle applied to the outer end of the main tube, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ANTON C. EGGERS.

Witnesses:

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J. H. NILES.