

G. M. SMYTH.
LIQUID DIFFUSER.

No. 190,789.

Patented May 15, 1877.

Fig. 1

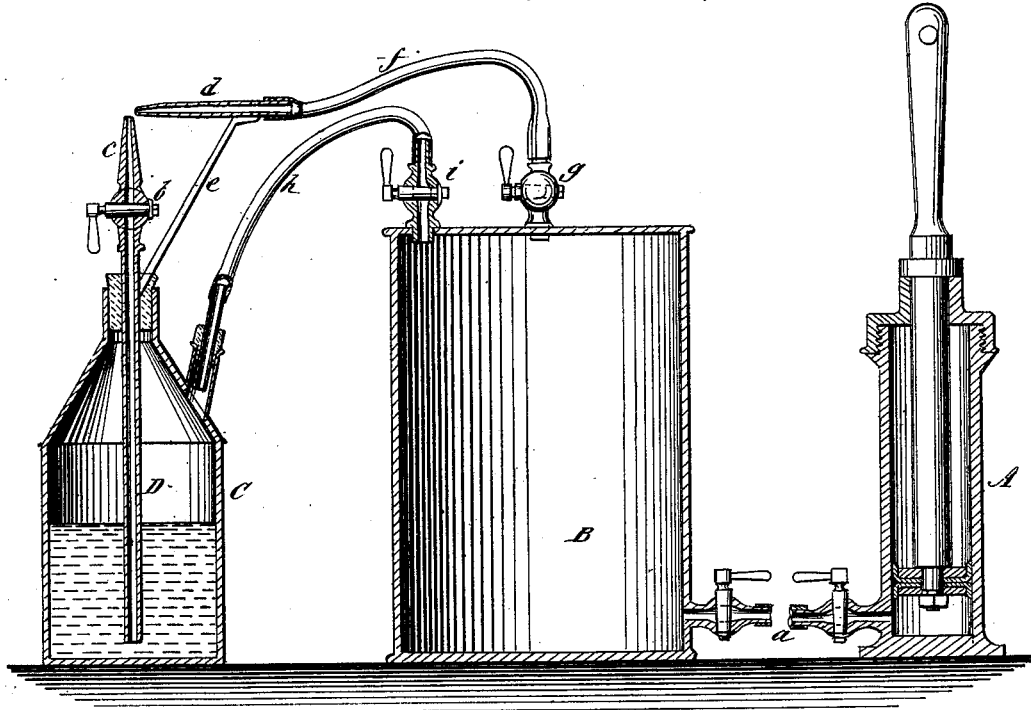
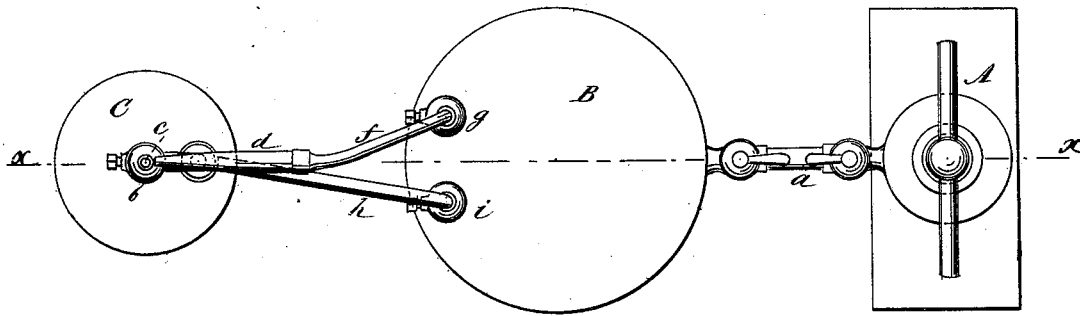


Fig. 2



WITNESSES:

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GEORGE M. SMYTH, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LIQUID-DIFFUSERS.

Specification forming part of Letters Patent No. 190,789, dated May 15, 1877; application filed March 12, 1877.

To all whom it may concern:

Be it known that I, GEORGE MORTIMER SMYTH, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Liquid-Diffuser, of which the following is a specification:

In the accompanying drawing, Figure 1 is a side elevation, in section, on line *x x*, Fig. 2, of my improved apparatus for diffusing liquids. Fig. 2 is a plan view of the same.

Similar letters of reference indicate corresponding parts.

My invention consists in the combination of an air-compressor, an air-reservoir, a receptacle for the liquid, and an arrangement of pipes and nozzles for atomizing the liquid.

Referring to the drawing, A is an air-compressor of any ordinary construction, which is connected with the reservoir B by the pipe *a*, in which two stop-cocks are placed. C is a receptacle for containing the liquid to be diffused or atomized. A pipe, D, passes through a stopper placed in the neck of the said receptacle, and extends nearly to the bottom of the same, and its upper end is provided with a stop-cock, *b*, and nozzle *c*. A nozzle, *d*, is arranged at right angles to the nozzle *c*, and is attached to a brace, *e*, that is secured to the pipe D.

The nozzle *d* is connected by a flexible pipe, *f*, with a stop-cock, *g*, that projects from the head of the reservoir B, and *h* is a pipe that is attached to a stop-cock, *i*, that projects from the head of the reservoir B, and communicates with the space above the liquid in the receptacle C.

The aperture of the nozzle *d* is arranged a small distance above the upper end of the nozzle, and placed so that a current of air issuing from the nozzle *d* would pass directly across the aperture of the nozzle *c*.

In ordinary atomizers the vacuum created by the issuing of the jet of air is depended on for raising the liquid from the receptacle. This is, in a measure, unreliable, and has defects which my invention is intended to obviate.

The operation of my improved apparatus is as follows: The compressor may be worked continuously, or a certain pressure of air may be created in the reservoir, when the stop-cocks in the pipe *a* may be closed, and air may be taken to the diffusing apparatus through the pipes *h f*. That which passes through the pipe *h* exerts a pressure upon the surface of the liquid in the receptacle C, and tends to throw it upward through the pipe D. The jet of air issuing from the nozzle *d*, by creating a partial vacuum at the aperture of the nozzle *c*, tends to draw the liquid from the receptacle, while, at the same time, the air diffuses it. The amount of liquid issuing from the nozzle *c* is controlled by the stop-cock *b*. The amount of liquid passing upward through the tube D may be small, while the volume and pressure of air issuing from the nozzle *d* may be great; and, on the other hand, the quantity and pressure of air issuing from the nozzle *d* may be small, while the quantity of liquid issuing from the nozzle *c* may be large. These various effects are produced by adjusting the stop-cocks *c i g*.

This device is designed for diffusing liquids in the atmosphere, and for spraying or atomizing liquids wherever a spray may be employed. For example, the diffusion of perfumes or disinfectants, for administering remedial agents in an atomized form, for moistening tobacco, sprinkling flowers, and for other purposes, which need not be enumerated here.

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

The combination of the receptacle C, pipe D, nozzles *c d*, pipes *f h*, stop-cocks *i g*, and the air-compressor A, substantially as herein shown and described.

GEORGE M. SMYTH.

Witnesses:

C. SEDGWICK,
ALEX. F. ROBERTS.