(Model.)

J. G. JUSTIN.

ATOMIZER.

No. 264,169. Patented Sept. 12, 1882.

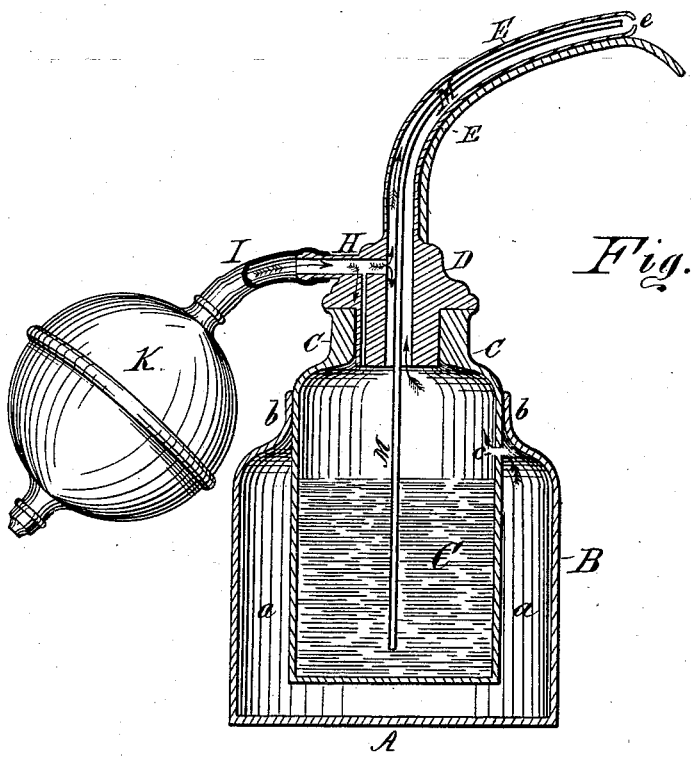

Fig. 1.

Witnesses:

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JOEL G. JUSTIN, OF SYRACUSE, NEW YORK.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 264,169, dated September 12, 1882.

Application filed October 6, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOEL G. JUSTIN, of the city of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Atomizers, of which the following is a specification, reference being had to the accompanying drawing, in which the figure is a longitudinal section on a perpendicular line.

My invention relates to that class of atomizers in which, when operated, is maintained a continuous spray while being worked, and which spray will be maintained during the interval while the pressure-bulb is being refilled with air for further operation, and which will continue after the working of the bulb is stopped.

It consists, first, of a double-chambered body composed of a liquid-receiver bottle fitting or set into a larger bottle, with a water or air tight joint at the neck of the outer bottle, and the two communicating with each other through an aperture in the side of the inner bottle near the neck; and, second, of the several combinations of the other parts of the atomizer with such a body, which are hereinafter specifically claimed.

It is constructed as follows:

A is the double-chambered body, consisting of two bottles, one set within the other, and fitting together at the neck of the outer bottle with an air-tight joint.

B is the outer bottle. C is the inner bottle, which is the liquid-receiver. Below the neck of the bottle B, and between them, and surrounding the liquid-receiver C, is the air-reservoir *a*. In the side of the receiver C is the aperture *c*, which connects the chamber of the receiver C with the air-reservoir *a*. The upper end of the receiver C is constructed with a suitable neck to receive the stopper D.

E is the atomizing-tube, constructed, as shown in the drawing, with an orifice, *e*, at its exterior extremity.

H is the air-inlet pipe, opening at its inner end into the atomizing-tube E, and extending out through the stopper D, with a nipple on its outer end to receive the end of the air-supply tube, which at its other end is connected to an ordinary rubber pressure-bulb, K.

M is the liquid-tube, constructed of flexible material, fitting loosely within the atomizing-tube E, and held in position within it entirely by its spring-pressure against the inner surface of the atomizing-tube, at and adjacent to the bend in it, so that it can readily be removed for cleansing or other purposes.

It is operated as follows: The liquid is placed in receiver C in the usual way, care being taken not to fill it above the aperture *c* in its side. The bulb K is then compressed, and the air is forced through the tubes I H directly into the atomizing-tube E, where it divides, a portion passing upward through the atomizing-tube around and alongside of the liquid-tube M, and escapes through the orifice *e*, while the greater part passes down into receiver C, and by its compression therein exerts an instantaneous pressure upon the liquid, forcing it through the tube M and orifice *e*. This compression of the air in the receiver C acts, through the medium of the aperture *c*, to compress the air in the reservoir *a* to or nearly to the same degree of density of that in the receiver E. The escape of the compressed air in the receiver C tends to decrease and lower the degree of compression therein; but the compressed air in the air-reservoir *a*, escaping through the aperture *c* into the receiver C, maintains and prolongs the period in which the compression in the receiver C is sufficient to force the liquid out of the orifice *e*, which is longer than is necessary to refill the compressed bulb K with air and again compress it. Thus it creates a continuous spray by the compound action of the compressed air in the receiver C upon the liquid therein, assisted by the auxiliary force of the compressed air in the reservoir *a*, while the bulb is being compressed and the air forced in, and while the pressure is relaxed and the bulb being refilled with air, and after the bulb has been several times pressed and refilled the flow of spray from the nozzle or orifice *e* will keep up and continue for several seconds after the operation of the bulb is stopped entirely.

I am aware that an auxiliary air-chamber has been used in an atomizer communicating with the bulb. Hence I do not broadly claim the auxiliary air-chamber.

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

1. In an atomizer, a double-chambered body,

one chamber of which is the liquid-receiver C and the other an auxiliary air-reservoir, *a*, surrounding the liquid-receiver C, both being fitted together and communicating with each other, and constructed and operating substantially as and for the purposes set forth.

2. The combination of the double-chambered body A, composed of the bottles B C, fitted together, as shown, and communicating with each other through the aperture *c*, with the stopper D, atomizing-tube E, liquid-pipe M, orifice *e*, tubes I H, and bulb K, when constructed and operating together, substantially as and for the purposes shown.

In witness whereof I have hereunto set my hand this 19th day of September, 1881.

JOEL G. JUSTIN.

Witnesses:
C. W. SMITH,
GEO. F. HINE.