(No Model.)

J. F. WINDOLPH.

ATOMIZER.

No. 423,198. Patented Mar. 11, 1890.

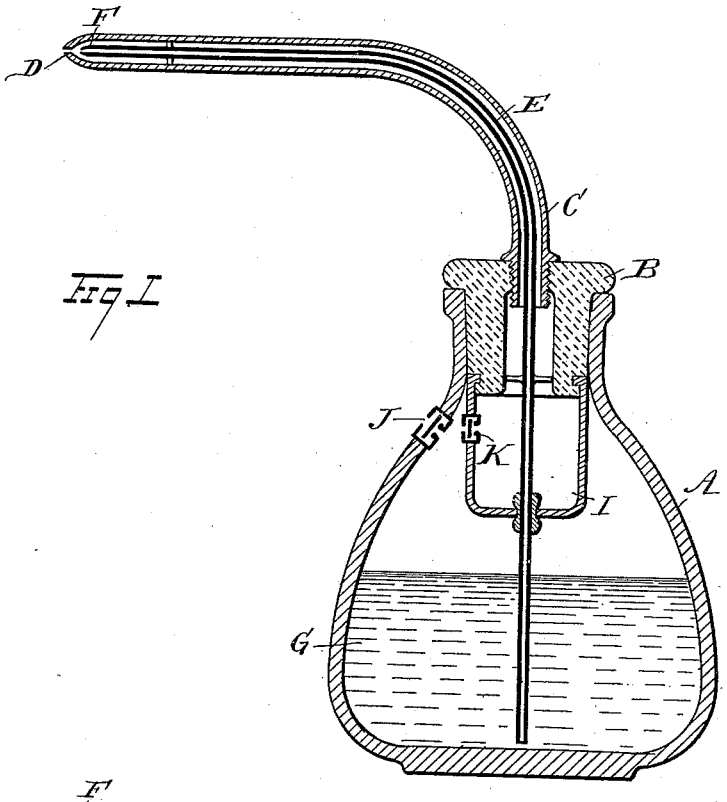

Fig. 1.

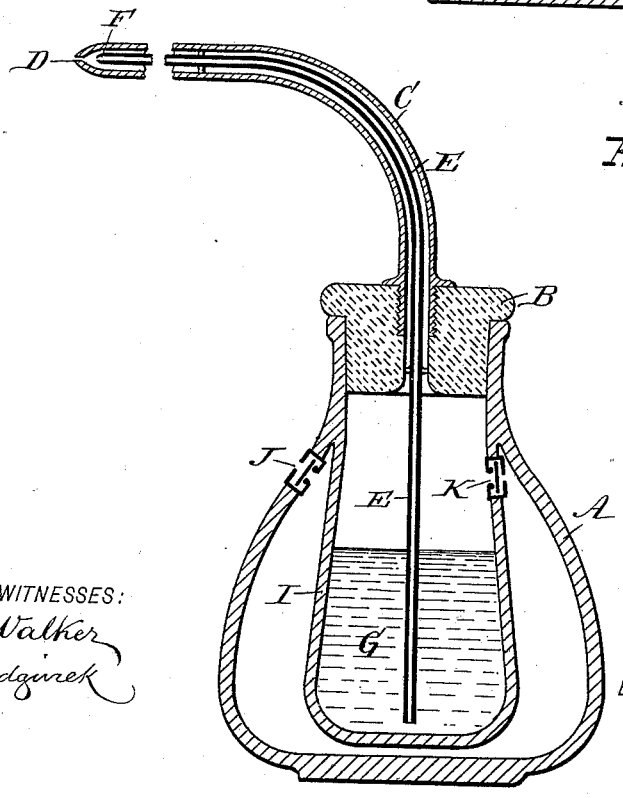

Fig. 2.

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JACOB FRED WINDOLPH, OF BROOKLYN, NEW YORK.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 423,198, dated March 11, 1890.

Application filed November 7, 1889. Serial No. 329,492. (No model.)

To all whom it may concern:

Be it known that I, JACOB FRED WINDOLPH, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Atomizer, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved atomizer which is simple and durable in construction, takes up little room, and is thus convenient for traveling and other purposes, and which, when used, forces a continuous stream.

The invention consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a like view of a modified form of the same.

The improved atomizer is provided with a receptacle A, made of flexible material—such as soft rubber—and preferably provided with a flat bottom for ordinary use, so that it can be set on a table or bench, if desired. The mouth of the receptacle A is closed by a suitable stopper B, from which leads an air-pipe C, bent in the usual manner, as shown in the drawings, and provided at its outer contracted end with an outlet-opening D. In this pipe C is arranged the liquid-pipe E, terminating near the contracted end of the pipe C and extending through the stopper B into the liquid G, held either in the receptacle A, as shown in Fig. 1, or in a receptacle I, supported or formed in the receptacle A, as shown in Fig. 2. A valve J is arranged in the receptacle A in such a manner as to close outward and open inward, and a similar valve K is arranged in the bulb I and opens inward into the bulb I and closes outward to the receptacle A.

As shown in Fig. 1, the bulb I does not contain the liquid J, as the latter in this case is held in the receptacle A; but the receptacle or bulb I, as shown in Fig. 1, serves to store air to form a continuous stream, as hereinafter more fully described. The pipe E also passes through the bulb I into the liquid contained in the receptacle A, as shown in the said figure, while in Fig. 2 the pipe E terminates near the bottom of the bulb I.

When the operator desires to use the atomizer shown in Fig. 1, he first fills the receptacle A with a suitable amount of liquid to be sprayed, then closes the mouth of the receptacle with the stopper B, supporting the bulb I and the pipes C and E. When the operator now presses on the receptacle A, the valve J closes to the outside, so that the air within the receptacle A is forced into the bulb J, at the same time forcing the liquid G into the pipe E and through the same, so that the air from the receptacle I, passing through the pipe C, sprays the liquid as it passes through the end of the pipe and the opening D to the outside. The moment the operator releases the pressure on the receptacle A the latter draws in air through the valve J, which now opens, but while the valve K closes the compressed air confined in the bulb I still passes out through the pipe C and sprays the liquid issuing through the pipe E until the operator again presses the receptacle A to repeat the operation, as above described, so that the continuous stream of liquid and air passes through the opening D of the pipe C. When the operator stops alternately pressing and releasing pressure on the receptacle A, the spraying continues until the compressed air in the bulb I is exhausted.

In the atomizer shown in Fig. 2 the operation is similar, as when the operator presses the bulb A the valve J closes to the outside, and the air passes in a compressed state through the valve K into the bulb I, exerting a pressure therein on the liquid G, at the same time passing up through the stopper B and the pipe C to the opening D, where it sprays the liquid passing through the pipe E. The moment the operator releases the pressure on the receptacle A the valve K closes, so that the compressed air within the bulb I still operates on the liquid, as above described, while fresh air is drawn in through the valve J into the receptacle A, and when the latter is filled and pressed the air opens the valve K, so that the air can pass into the bulb I and force a stream of liquid through the pipe E.

It will thus be seen that in either case a con-

tinuous stream is forced. It will further be seen that as the bulb I is within the receptacle A the whole device takes up very little room and can be conveniently carried in the pocket.

The bulb I may be made of flexible or rigid material and permanently or detachably secured to the stopper B or to the receptacle A.

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

1. An atomizer comprising a flexible receptacle provided with an inlet-valve, and a bulb arranged within the said receptacle and also provided with an inlet-valve, and the liquid and air tubes connected with the said receptacle, substantially as shown and described.

2. An atomizer comprising a flexible receptacle provided with an inlet-valve, a bulb arranged within the said receptacle and also provided with an inlet-valve, a stopper held on the said receptacle and supporting an air-tube communicating with the said bulb, and a liquid-tube passing through the said air-tube, substantially as shown and described.

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Witnesses:
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