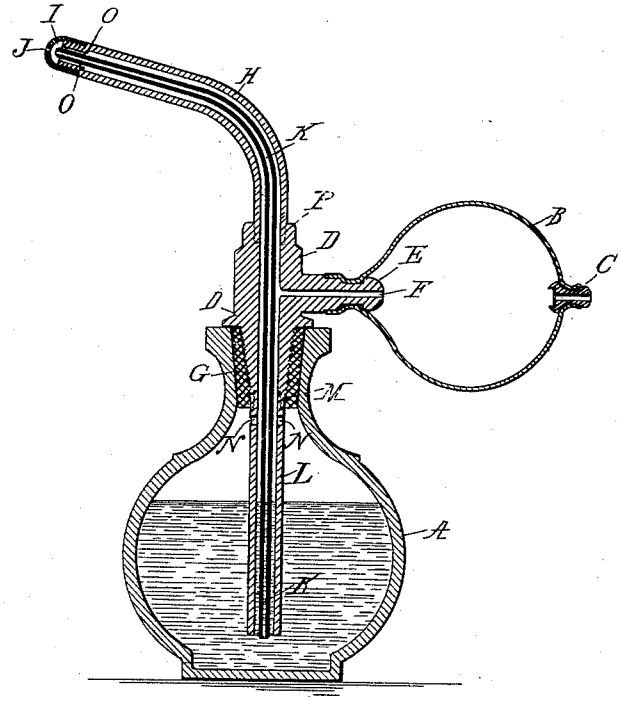
(No Model.)

M. DITTENHOEFER.

ATOMIZER.

No. 483,546. Patented Oct. 4, 1892.



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MYER DITTENHOEFER, OF NEW YORK, N. Y.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 483,546, dated October 4, 1892.

Application filed September 5, 1891. Serial No. 404,805. (No model.)

To all whom it may concern:

Be it known that I, MYER DITTENHOEFER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Atomizers, of which the following is a specification.

My invention relates to an improvement in atomizer attachments; and it consists in the construction and arrangement of the parts, as hereinafter set forth.

The drawing hereof represents a vertical section through the delivery-nozzle of the atomizer.

Heretofore considerable difficulty has resulted from fracture of the small tube which acts as the liquid-conveyer and which passes through the tubular nozzle and cork-supporting part of the device. This tube is necessarily fragile and is easily broken, whereupon the device becomes useless. This is so apt to occur that in every gross of atomizer attachments of this class made there will be a dozen or more broken before they reach the hands of the consumers, and in the hands of the consumer they are apt to be short-lived on this account. Various means have been resorted to to prevent this objection, but, so far as I am aware, none successfully prior to my present invention.

In the drawing, A is the bottle or other receptacle.

B is the elastic bulb.

C is the valve.

D is the rubber fitting having a projecting stem E upon which the bulb fits, through which an orifice F is made for the passage of the air.

G is a cork or rubber exterior lining for the fitting D, which acts as a cork.

H is the nozzle, which is tubular in construction.

I is a little cap usually threaded to the end of the nozzle, in which the spray-hole J is made.

K is the interior tube, which runs all the way from near the bottom of the bottle A upwardly through the liquid and through the air-space beneath the cork, and thence through the hollow fitting D and through the nozzle H, discharging close to the spray-hole in the cap I.

L is a covering for the interior tube K, and it is made so as to extend from the fitting D down to the end of the inner tube K, or about to its end, and it is fastened to the fitting D by screw-threads M, and is provided with lateral holes N N near the cork, and it is made so much larger interiorly than the exterior of the tube K that there will be free passage of the air downwardly through it.

The operation of the device is as follows: The bulb being squeezed, air rushes in through the orifice F into the chamber between the inner and outer tubes, and thence upwardly through little holes O O made through the contracted end of the nozzle H, as is usually the case, although sometimes the end is not so contracted, and then it passes in either case into the cap I and blows out through the spray-hole J. This spray-hole is so much smaller than the opening F in the stem E and the pressure on the bulb is so great that the air cannot all of it escape through the hole J. Consequently there is a back-pressure in the chamber between the inner and outer tubes, and the air is forced out through the openings N N in the tube L into the air-chamber between the cork and the surface of the liquid. This generates an air-pressure upon the surface of the liquid, which causes it to rise upwardly through the inner tube K. The vacuum created by the rushing of the air past the upper end of this tube during its passage and escape through the spray-hole J removes pressure from the upper end of this tube, and the liquid is ejected in a fine spurting stream from the upper end of the tube K directly into the spray-hole J, or as nearly so as may be, and the air and the liquid, both striving to escape through the spray-hole J at the same time, results in a very perfect spraying of the liquid.

It will be observed that the extension of the fitting D—in other words, the addition of the exterior tube L, provided with means for exit of air into the air-chamber within the bottle—affords a complete protection to the fragile pipe K, below the fitting D, without in any manner interfering with the operation of the atomizer, and even if it does add somewhat to the cost of the device the total results are very beneficial, since there is no loss and the apparatus can be relied upon to remain in working order.

I show the nozzle H as threaded to the fitting D at P, and the tube L as likewise threaded to it at M. I sometimes make my atomizers with these two parts integral with the fitting D and sometimes with one of them only integral with it, the other being threaded to it. It is immaterial in what special way the parts may be put together, and it is not essential that there should be a separate cap I on the end of the nozzle. The nozzles may be made with a closed end, through which the spray-hole J may be drilled. Various other modifications may be made in the structure and arrangement of the parts without departing from my invention.

I claim—

An atomizer attachment comprising an interior tube for conveying the liquid and an exterior tube for receiving the air, the latter covering and protecting the interior tube throughout substantially its entire length and being attached to and removable with the fitting, both of said tubes being detached from the bottom of the atomizer, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 3d day of September, A. D. 1891.

MYER DITTENHOEFER.

Witnesses:

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