

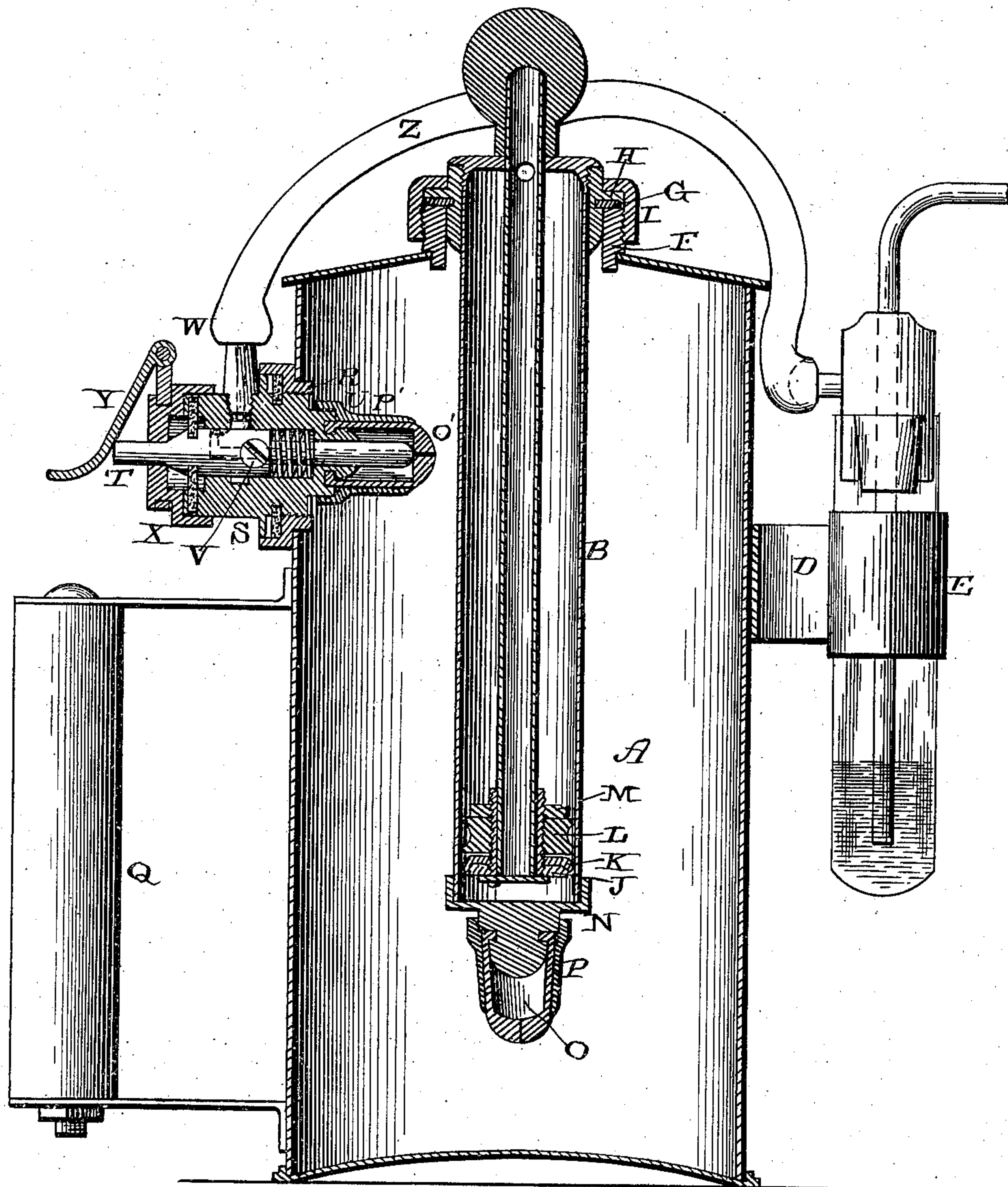
No. 638,445.

G. F. COTT & J. LOOS.  
ATOMIZER.

Patented Dec. 5, 1899.

(Application filed July 25, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 638,445, dated December 5, 1899.

Application filed July 25, 1899. Serial No. 725,071. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE F. COTT and JOHN LOOS, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Atomizers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to compressed-air atomizers; and it consists in a receiving vessel for the compressed air, a pump which is placed inside of the vessel, and a valve through which the compressed air is permitted to escape from the vessel and which valve consists of a slitted rubber cup, an endwise-moving spring-actuated hollow rod which is forced against the cup for the purpose of opening it, combined with a holder attached to the vessel for receiving different bottles, and a rubber tube which extends from the valve and makes connection with the different bottles from which the fluid is to be sprayed, as will be more fully described hereinafter.

The object of our invention is to provide a portable compressed-air atomizer which produces a continuous spray of liquid which is to be used for inflating the ears with air or spraying the nose, throat, or wind-pipe, or which is to be used as a blower by dentists, and also for cleansing all sorts of wounds preparatory to receive surgical dressing.

The accompanying drawing represents a vertical section of an atomizer which embodies our invention complete.

A represents a vessel for holding the condensed air and which will be made sufficiently strong to receive a pressure suitable for all ordinary purposes. Secured to the top of this vessel is the screw-threaded collar F, upon the top of which is placed a packing G, and upon this packing G rests the flange H, which is formed upon the upper end of the air-pump B. Screwed down over the collar F and catching above the flange H is a cap I, by means of which the pump B is rigidly secured in position, the washer being attached

to the thickened upper end of the pump by being made to catch in a recess formed therein.

The pump B is closed at its upper end by a screw-threaded cap, and through this cap the hollow piston-rod, provided with a handle at its upper end, is freely reciprocated. Attached to the lower end of this piston-rod is the L-shaped sleeve J, upon which the cup-shaped packing K is secured and which packing serves to force the air downward through the lower end of the pump. Above this packing K is a suitable metallic packing L, which is provided with a groove in its outer edge to hold oil, so as to keep the barrel of the pump suitably lubricated, and which packing is secured upon the end of the hollow piston-rod by a nut M. Secured to the lower end of the pump is a cap N, and applied to this cap is a rubber cup O, slitted at its outer end and which is inclosed down to its thickened lower end by a sleeve P, which prevents it from being collapsed by the pressure of the air in the vessel A. This cup O allows the air to be forced freely through it into the vessel A by means of the piston, but absolutely prevents any return of the air from the vessel toward the pump. By the use of this pump air can be compressed to any desired degree; but a pressure of about twenty-five pounds will be found to answer all ordinary purposes. The pump being placed inside of the vessel, which is provided with a handle Q, so that the atomizer can be freely carried around and used wherever desired, enables me to produce a very compact portable air-atomizer.

Through one side of the chamber A, at any suitable point, is formed an opening, and secured to the vessel is a coupling R, into which the frame S of the valve is screwed. In this frame is made a suitable groove, in which a packing is placed, and this packing is forced, by means of the flange upon the body S, tightly against the coupling R, so as to form a tight joint at this point. Through a suitable opening in this body S is placed the endwise-moving hollow plunger T, which is held normally pressed outward by means of the spring U, which has one end to bear against the body S and the other to bear against a shoulder formed upon the spring. Through the plunger T is passed a screw V,



which regulates the amount of air which shall be allowed to pass through the plunger, and thus prevent too great a pressure being brought to bear upon the bottles from which fluid is to be sprayed. The opening through this plunger turns at a right angle at its outer end, and in the side of the plunger is formed a small recess, which when the plunger is forced inward registers with a corresponding recess formed in the body S just below the outlet-nipple W. When the plunger is in its normal position, these two recesses are out of connection with each other, and hence no air can escape through the valve. This valve is also provided with a washer near its outer end and which washer is forced tightly against the outer end of the body S by means of the cap X for the purpose of forming a tight joint at this point. This cap also serves as a support for the standard, upon the upper end of which the lever Y is pivoted, and which lever bears against the outer end of the plunger T for the purpose of opening the slit in the rubber cup O', which is applied to the inner end of the body S and which is protected by a sleeve P', similar to what is shown upon the lower end of the pump. When the plunger T is forced inwardly by the lever Y, the inner end of the plunger pushes against the slitted end of the cup O' and by opening the slit causes the air to pass through the plunger, the outlet-pipe W, and the rubber tube Z into the bottle, with which the other end of the tube Z may be connected. This tube Z may be used for blowing air into the ears and for many other purposes, as well as to have its other end connected to a bottle E, from which the liquid is to be vaporized. In order to allow bottles of different sizes to be used in connection with this atomizer, a spring-holder D, of any suitable construction, is used, and which is secured to the side of the vessel A, as shown, and which holder permits bottles to be freely interchanged as necessity requires.

By the use of our invention in lithography the etching upon the stone of original drawing or transferring by means of a fine and

most exactly and definitely adjusted spray of acids-can be better and more beautifully executed, and the stone thereby gets a better printing quality. The finish-tone can easily be brought forth. Especially do we claim accuracy in adjusting the amount of air used for spraying, which is by far the best part of the apparatus.

Having thus described our invention, we claim—

1. In an atomizer, the vessel for holding condensed air, and the pump placed inside of the vessel, combined with an endwise-moving spring-actuated hollow plunger, a body through which the plunger passes, a slitted rubber cup against which the inner end of the plunger is forced, and an outlet through which the air is conveyed to any desired source, substantially as shown.

2. In an atomizer, the vessel A for holding compressed air, the pump placed therein and provided with a slitted rubber cup upon its lower end, and an endwise-moving spring-actuated plunger, a body through which the said plunger moves, a slitted rubber cup against which the end of the plunger is forced, a lever for moving the plunger, and an outlet for the compressed air which passes through the plunger, substantially as set forth.

3. In an atomizer, a slitted rubber cup which is thickened at its outer end, and a protecting-sleeve to prevent the cup from being collapsed by means of the air-pressure, combined with a hollow spring-actuated plunger which is forced inwardly against the cup, and the body through which the plunger moves, a handle for operating the plunger, an outlet for the air, and a flexible tube Z for making connection with bottles from which fluid is to be vaporized, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

GEO. F. COTT.  
JOHN LOOS.

Witnesses:

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