

(No Model.)

G. SCHLAUCH.  
ATOMIZER.

No. 435,458.

Patented Sept. 2, 1890.

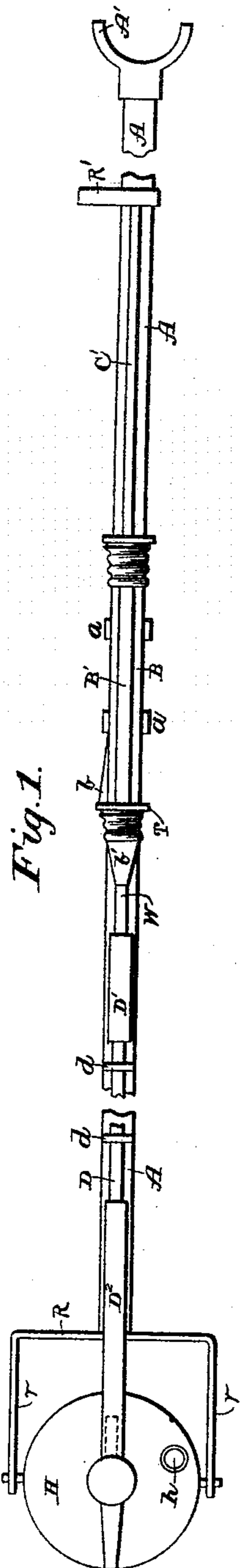


Fig. 1.

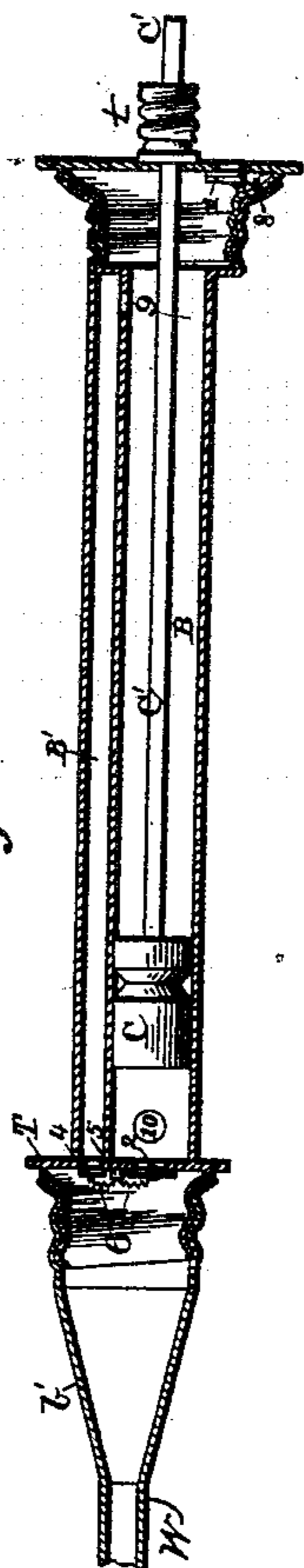


Fig. 2.

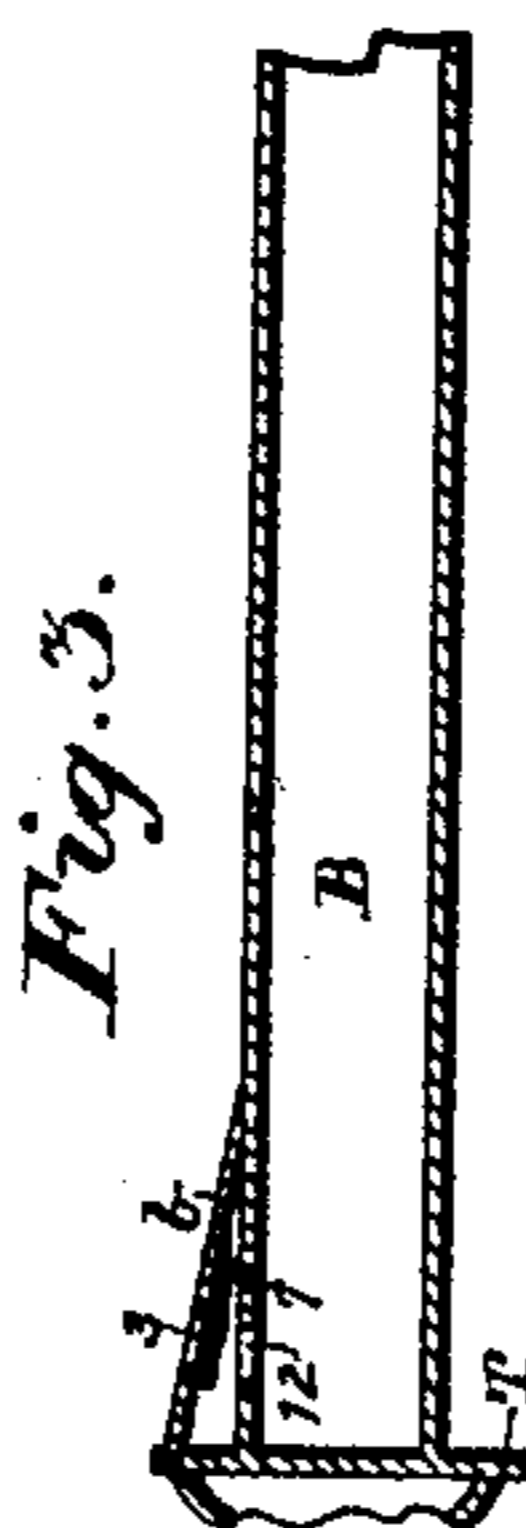


Fig. 3.

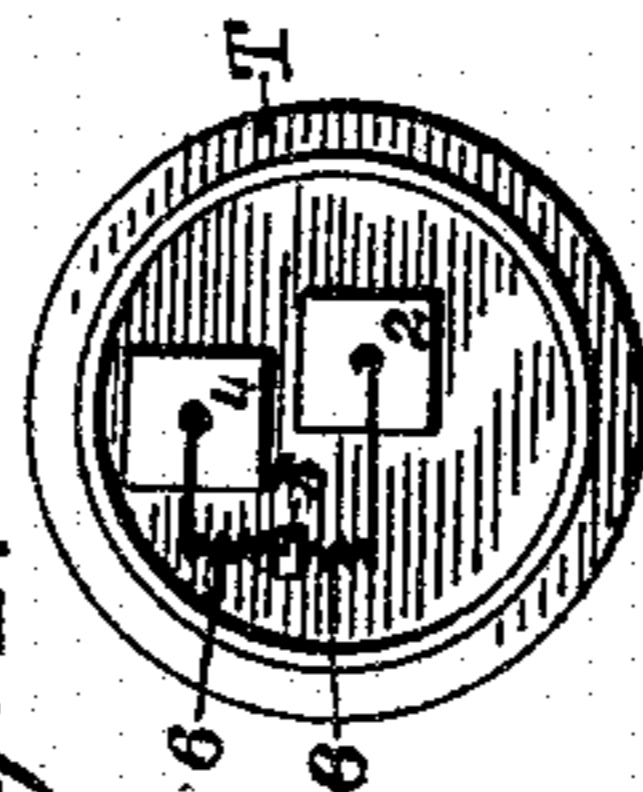


Fig. 4.

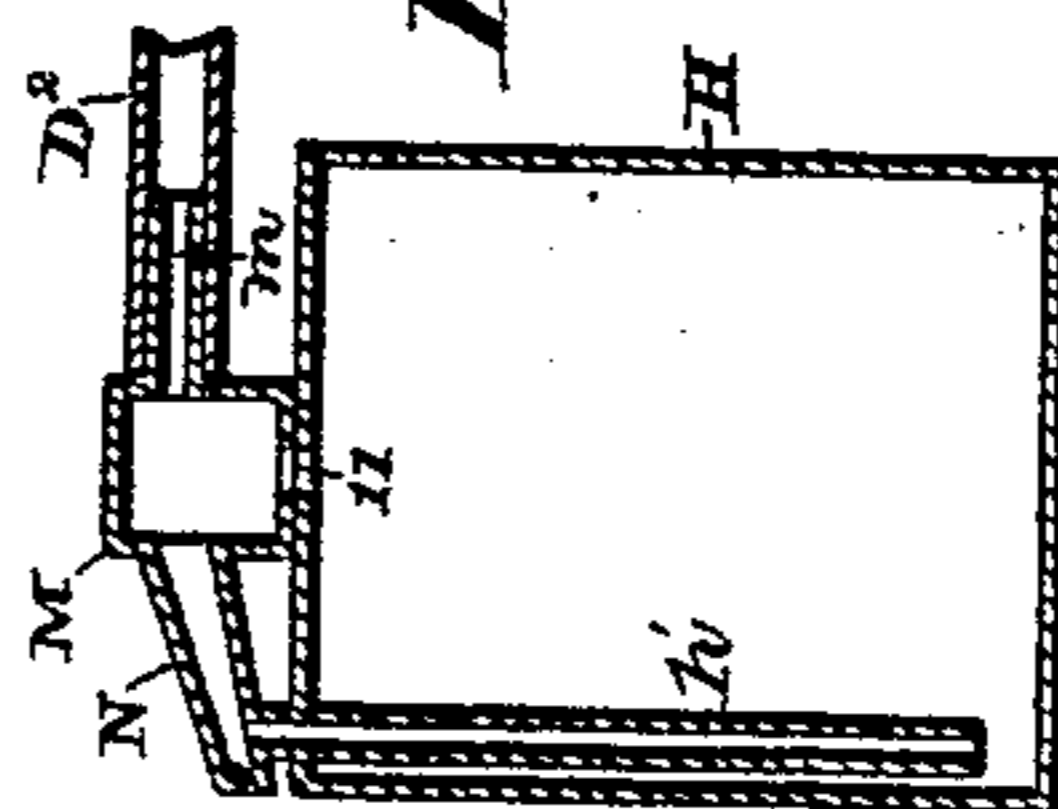


Fig. 5.

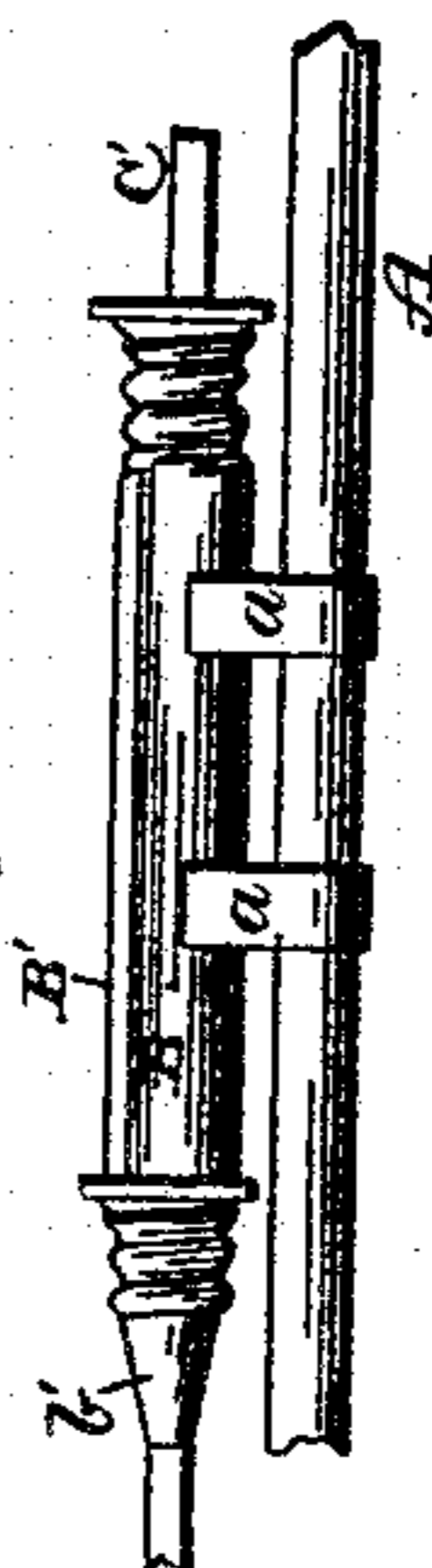


Fig. 6.

Witnesses:  
E. P. Ellis,  
Geo. A. Lane

Inventor:  
Geo. Schlauch  
Per Wm. R. Gerhart  
His Atty.

# UNITED STATES PATENT OFFICE.

GEORGE SCHLAUCH, OF LANCASTER, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ROBERT M. SLAYMAKER, OF SAME PLACE.

## ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 435,458, dated September 2, 1890.

Application filed May 20, 1890. Serial No. 352,512. (No model.)

### *To all whom it may concern:*

Be it known that I, GEORGE SCHLAUCH, a citizen of the United States, residing in Lancaster, in the county of Lancaster, State of Pennsylvania, have invented certain Improvements in Atomizers, of which the following is a specification.

This invention relates to improvements in that class of atomizers used for dampening tobacco or for ejecting liquids in the form of spray onto the branches and leaves of trees to remove insects, and for other like purposes; and the object of my improvement is to apply or use an atomizer at a distance from the operator; and it consists in the construction and combination of parts, as hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a top or plan view of an atomizer embodying my improvements. Fig. 2 is a longitudinal vertical section of the double-acting air-pump, and Fig. 3 a similar horizontal section of the same. Fig. 4 is a view of the discharge end of the air-pump, the nozzle being removed. Fig. 5 is a vertical section of the liquid-containing vessel and the air-chamber. Fig. 6 is a side view of the air-pump and a portion of the handle, showing the manner of connecting the two.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A represents a handle of, say, eight or ten feet in length, though this length may be varied to suit the convenience of the owner. To one end of the handle there is secured a curved bearing A', adapted to rest against and partially encircle the leg of the operator. At the other end of the handle there is affixed a cross-bar R, having a forwardly-projecting arm r attached to each end thereof. Between the outer ends of the arms r there is hung a liquid-containing vessel having spindles journaled in perforations in the arms r.

H indicates a vessel which contains the water or other liquid to be used. In the top of this vessel there is an aperture, through which the liquid is poured into the same, covered by a screw-cap h. On top of the vessel H

there is an air-chamber M, having a short rigid inlet-pipe m extending back toward the handle, and on the opposite or front side a tapering nozzle N, extending out to the edge of the vessel A. A discharge-pipe h' passes downward from an aperture in the bottom of the nozzle N into the vessel H.

B B' represent a double-acting air-pump secured on the top of the handle A by metallic straps a, being placed as near the bearing A' as it can possibly be and yet permit of the free operation of the piston-rod G'. The lower cylinder B of the air-pump has a cap fitted on its rear end, in which there is an aperture covered by an inwardly-opening valve 1, held in a closed position by a spiral spring 8. This valve permits the ingress of air as the piston makes a forward stroke. At the side of the forward end of the cylinder B there is a valve-chamber b, which is connected with it by an aperture 12, the chamber b having an opening in its outer side covered by an inwardly-opening valve 3, held in a closed position by a spiral spring 7. Through the opening covered by the valve 3 and the aperture 12 air enters the cylinder B as the piston makes its back-stroke. The employment of this valve-chamber permits the use of an inwardly-opening valve at this point without interfering with the operation of the piston-head.

C represents a piston-head located in the cylinder B, and formed of two concaves, of leather or other suitable material, placed back to back, as shown in Fig. 2. In this construction, whether the piston-head moves backward or forward, the edges of one of the concaves will be caused to expand, and thus pack in the cylinder, causing the piston to work air-tight in both directions. To the piston-head is attached the piston-rod G', which passes out of the rear end of the cylinder through a stuffing-box t in the cap on that end of the cylinder. A hand-hold R' is attached to the rear end of the piston-rod.

B' is an air-chamber secured on the top of the cylinder B, being of the same length therewith. An aperture 9 connects the chamber B' with the cylinder B at its rear end.

T represents a cap fitting over the forward end of the cylinder B and air-chamber B',

which is provided with apertures opening into said cylinder and air-chamber. These apertures are covered by outwardly-opening valves 2 and 4, held in a closed position by the spiral springs 6, secured to the face of the cap between the valves, as shown at 5, Figs. 2 and 7.

With the forward stroke of the piston the air is forced out of the aperture covered by the valve 2, and is drawn into the cylinder back of the piston-head through the opening covered by the valve 1. In making the back-stroke the piston-head forces the air from the cylinder through the opening 9 into the chamber B', and thence out through the aperture covered by the valve 4, air at the same time being drawn into the cylinder in front of the piston-head through the opening covered by the valve in the valve-chamber b. With this construction, as the pump B B' is operated air is forced through the nozzle b' in a steady stream.

b' represents a tapering nozzle, which screws over the forward end of the cap T and terminates in a short pipe W, connected by a flexible tube D' with the rigid pipe D, which extends to the forward end of the handle A, and is secured thereto by metallic straps d. The pipe D is connected with the pipe m of the air-chamber M by a flexible tube D<sup>2</sup>. The tube D' is preferably formed of rubber to permit it to be readily detached from the pipe W, to allow the separation of the nozzle b' and the adjoining portions of the air-pump, to facilitate cleaning the same, and permit the removal of worn parts. The flexible tube D<sup>2</sup> is made of sufficient length to allow the vessel H to swing freely on its spindles.

By the working of the air-pump air is forced into the air-chamber M through the series of tubes and pipes connected with the rigid pipe m, pressing upon the liquid in the vessel H and forcing it upward through the discharge-pipe h' into the nozzle N, whence it is ejected in a continuous spray by the air passing from the air-chamber through said nozzle N.

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

1. In an atomizer, the combination, with the handle, of a vessel having a jointed connection with one end thereof and adapted to maintain an upright position, said vessel being constructed to have liquids forced therefrom, an air-pump secured to the handle between the ends thereof, and a pipe connecting the said vessel and the air-pump, substantially as specified.

2. In an atomizer, the combination, with the handle, of a vessel having a jointed connection with one end thereof and adapted to maintain an upright position, said vessel being constructed to have liquids forced therefrom, an air-pump secured to the handle between the ends thereof, and a pipe connected with the air-pump and extending along the handle toward said vessel and having a flexible connection therewith, substantially as and for the purpose specified.

3. In an atomizer, the combination, with the handle, of a cross-piece R, secured to one end thereof and having arms r, a vessel constructed to have liquids forced therefrom and having spindles journaled in the arms r, an air-pump secured to the handle between the ends thereof, and a pipe connected with the air-pump and extending along the handle toward said vessel and having a flexible connection therewith, substantially as and for the purpose specified.

4. In an atomizer, the combination, with the handle, of a cross-piece R, secured to the front end thereof, having arms r, a curved bearing A', attached to the rear end of the handle, a vessel constructed to have liquids forced therefrom and having spindles journaled in the arms r, an air-pump secured to the handle between the ends thereof, with the piston-rod extending rearwardly therefrom and having a hand-hold attached thereto, and a pipe connected with the air-pump and extending along the handle toward said vessel and having a flexible connection therewith, substantially as and for the purpose specified.

GEO. SCHLAUCH.

Witnesses:

GEO. A. LANE,  
WM. R. GERHART.