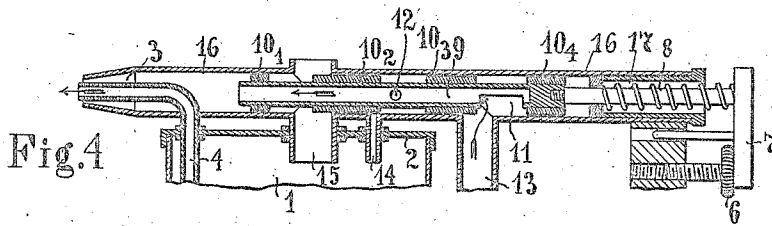
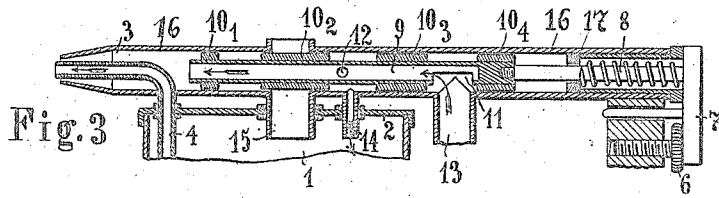
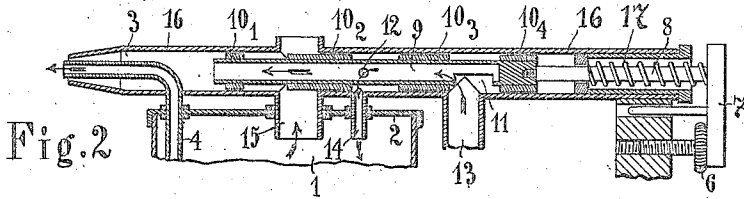
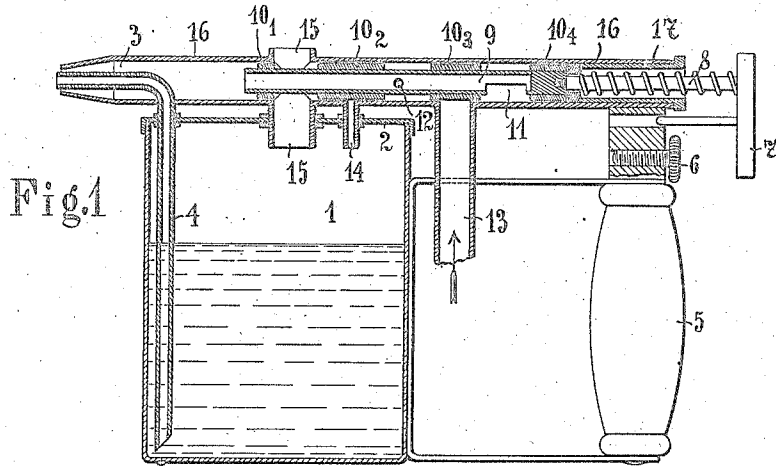


F. VON DÖHN.  
 ATOMIZER VALVE.  
 APPLICATION FILED NOV. 9, 1910.

1,066,263.

Patented July 1, 1913.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

FRITZ VON DÖHN, OF BERLIN, GERMANY.

## ATOMIZER-VALVE.

1,066,263.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed November 9, 1910. Serial No. 591,528.

*To all whom it may concern:*

Be it known that I, FRITZ V. DÖHN, a citizen of Berlin, State of Prussia, Germany, have invented a new and useful Atomizer-Valve, of which the following is a specification.

My invention relates to improvements in portable atomizers, in which a plunger-valve serves for the passage of compressed air, that enables the operator to regulate instantaneously at will with the same hand that holds the apparatus, the main compressed air, its inflow into the vessel over the material, as well as its outflow, in order to change during the atomizing process the jet of the atomized material, its density, quantity, &c., and that enables the operator also to atomize the material either by suction alone or by the combined action of suction and direct pressure upon the surface of the material. I attain these objects by the design illustrated in the accompanying drawing, wherein—

Figure 1 is a vertical section of the entire paint-atomizer. Figs. 2, 3 and 4 are vertical sections of the atomizer-valve in different positions.

Similar numerals refer to similar parts throughout the several views.

The paint-vessel is shown at 1 with cover 2, thus arranged as to make the closure airtight.

3 is the discharge nozzle, that receives through the tube 13 the compressed air, necessary for the atomizing.

4 is the tube through which the material has to pass; 5 the usual handle; 6 a regulating stop-screw; 7 the thumb-piece, and 8 the valve-rod surrounded by a coiled spring and closely connected with the sliding plunger-valve; it can be worked by the user's thumb.

Thus far the apparatus is already known and forms no part of my invention.

My atomizer-valve serves for the purposes already stated; it consists of the valve-case 16 and the hollow plunger-valve 9 with the four plungers 10<sub>1</sub>, 10<sub>2</sub>, 10<sub>3</sub> and 10<sub>4</sub>, the cut-out 11 and a small opening (hole) 12, between plunger 10<sub>2</sub> and plunger 10<sub>3</sub>. The tube 13 is for the main passage of compressed air to the nozzle, the tube 14 is to lead compressed air into and the tube 15 out of the paint-vessel. The tubes 13, 14, 15, are inserted (soldered) in the valve-case 16; tubes 14 and 15 pass through the cover of

the paint-vessel, tube 13 serves for the connection with the compressed air reservoir. The hollow plunger-valve 9 with the four set-up plungers 10<sub>1</sub>, 10<sub>2</sub>, 10<sub>3</sub>, 10<sub>4</sub> slides in the valve-case 16. The four plungers with the intervals serve to regulate the main compressed air, the inflow of compressed air into the vessel and the outflow. Through pressure upon the thumb-piece 7 the hollow plunger-valve with the plungers slides forward. In the valve-case 16 is a small tube-case 17 inserted, through which the valve-rod 8 passes; and in which also a coiled spring serves for the return-movement. Valve-rod 8 is closely joined with 9.

The operation of my atomizer-valve is as follows: Fig. 1. The compressed air enters the air tube 13; the plunger 10<sub>3</sub>, being in closed position, cuts off the flow of air into the apparatus. The atomizer does not spray. Fig. 2 shows the atomizer-valve in a position, where the compressed air passes through the air-tube 13, then through the cut-out 11 through the hollow plunger-valve 9 and to the discharge nozzle in order to atomize the material. A part of the compressed air passes through the hole 12 and tube 14 into the paint-vessel over the material, in order to force it through the tube 4. A part of this compressed air escapes again through the tube 15 out of the vessel. The plunger 10<sub>1</sub> prevents the escape of compressed air through the tube 15. The apparatus sprays by suction and pressure upon the material—half thick. Fig. 3. The position of the atomizer-valve permits, the compressed air to pass fully through the tube 13, the cut-out 11, the hollow plunger-valve 9 and part of the compressed air through the tube 14 into the paint-vessel over the material. The tube 15 is closed by the plunger 10<sub>2</sub>. The whole compressed air presses upon the material in the vessel. The apparatus sprays coarse and thick. Fig. 4 shows the air tube 13 one half closed by the plunger 10<sub>3</sub>, the plunger 10<sub>2</sub> closes the tube 14, thus preventing the inflow of compressed air into the paint-vessel over the material; the plunger 10<sub>1</sub> closes also not fully the air-escape tube 15. In this position of the atomizer-valve the apparatus sprays only by suction near the orifice of the nozzle. All these different positions of the atomizer-valve 9 are obtained by inward pressure with the operator's hand upon the thumb-piece 7 in order to release the compressed air; the return

movement of the valve 9 for shutting off the compressed air is automatic. It is evident, that the operator is in no way bound to any of these positions, but that he can change  
5 them at will to all positions between those shown in the drawings, during the atomizing process.

Various changes may be made in parts of this device without departing from the  
10 scope of my invention, and I do not limit myself to the details herein shown and described.

What I claim, is:

15 An atomizer apparatus comprising a reservoir, an atomizer valve in top of the reservoir for regulating the discharge of the material in a spray therefrom, the said atomizer valve consisting of a valve casing, a hollow  
20 plunger movable through said casing, an air supply tube connected to said valve casing, a tube leading from said valve casing to said reservoir and a tube passing from said reservoir to said valve casing and to the external air, said hollow plunger having a cut

out adapted to register with said air supply 25 pipe and an aperture adapted to register with said second tube, a thumb piece secured to one end of said hollow plunger, four plungers secured to and closing the space between  
30 said hollow plunger and said valve casing, the first plunger located at the end of said hollow plunger opposite the thumb piece, the second plunger being adapted to open and close the tube passing from said reservoir to said valve casing and the external  
35 air, and the tube leading from said valve casing to said reservoir, the third plunger being adapted to open or close the air supply pipe, and the last named plunger located at the end of said hollow plunger next  
40 to the thumb piece.

In testimony whereof I affix my signature in presence of two witnesses.

FRITZ VON DÖHN.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.