

1,057,657.

Patented Apr. 1, 1913.



WITNESSES

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SPRAYING APPARATUS.

1,057,657.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM P. MOTT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Spraying Apparatus, of which the following is a specification.

This invention relates to improvements in spraying devices. In the embodiment of my invention shown in the accompanying drawings, I have illustrated a device adapted for use in connection with spraying of all kinds such as used for disinfecting, sand blasts, etc., but the device I have shown and described is especially adapted for use in connection with painting where paint is to be sprayed upon the surface to be painted.

Further objects will appear from the description in the specification.

In the drawings—Figure 1 represents a longitudinal sectional view of the entire device. Fig. 2 shows a section along the line 2, 2 of Fig. 1. Fig. 3 shows a detail transverse section along the line 3, 3 of Fig. 1. Fig. 4 represents a transverse section along the line 4, 4 of Fig. 1. Fig. 5 represents a detail section along the line 5, 5 of Fig. 3.

In the drawings like numerals refer to like elements throughout.

10 designates a receptacle intended to contain the material to be sprayed such as paint, disinfectant, etc. The receptacle 10 is provided with a tightly sealed cover 11 having upturned flanges 11' secured by the overturned end engaging flanges 10' of the receptacle proper. The cover 11 is provided with an opening 12 for the filling of the receptacle. This opening 12 is threaded to engage a filler plug 13 by means of which the opening is tightly closed to prevent any leakage of air or the contained material.

In the bottom of the receptacle 10 is a depending integral flange 14 having an aperture 14' internally threaded. This aperture and flange are designed to engage an upwardly projecting boss 15 on the air pipe 21. This boss is provided with two passages 16 and 17, the passage 16 being intended for the discharge of the material from the receptacle 10, and the passage 17 being intended for the admission of air to the receptacle 10 from the supply pipe 21. A U-tube 18 is threadedly engaged at its lower extremity in the aperture 17 and projects upwardly into the receptacle 10. Another extremity 18' of the U-tube 18 termi-

nates above the bottom of the receptacle 10, as shown in Fig. 1 of the drawings, for a purpose to be hereinafter described.

19 designates a pipe leading from the air pressure tank or air supply and is connected by a coupling nut 20 to the air supply pipe 21 of my device.

Located intermediate of the receptacle and the connection of supply pipe 19 to my air supply tube 21 is a valved separating wall composed of the vertical offset portions 22', 22'' connected by a horizontal wall 22. These walls are preferably cast integral with the supply tube 21. In the horizontal wall 22 is an aperture 24 terminating in a valve seat 24'. Above this and leading from the supply end of the supply tube 21 is the aperture 23 in the wall 22'. A valve 25 is intended to seat upon the valve 24' and is carried by a valve rod 26 having an extremity 26' protruding beyond the valve, as shown in Fig. 1 of the drawings.

The main portion of the valve rod 26 is journaled in a depending threaded boss 27 preferably formed integral with the under portion of the supply tube 21. A gland cap 28 apertured to permit the passage of the valve rod 26 is threaded to the boss 27 and suitable packing material 29 is contained therein, thus forming a suitable stuffing box for the valve rod 26.

Above the valve and resting thereon is a spring 31 contained in a spring chamber 30 projecting upwardly from the supply tube 21. One end of this spring 31 rests upon the upper face of the valve while the other end rests against the lower face of the cap 32 threaded into engagement with the upper end of the spring chamber 30.

The tube 21 carries the dividing wall or partition 34 below the upwardly projecting boss 15 and integrally connected therewith. This dividing wall 34 divides the supply tube 21 into the air passages 17 and 33. As described before, the air passage 17 leads to and through the U-tube 18 into the receptacle 10 and is intended to supply the air passage for the forcing out of material from the receptacle 10 to the passage 16. The passage 33 is intended to permit the passage of the air intended for the spraying of the material. The passage 16 leading out from the receptacle 10 is provided with a valve 36 at its lower extremity journaled in a post 35 and a depending boss 39 upon which is threaded a gland cap 37 containing packing

material 38 forming a stuffing box for the valve rod 36. This valve rod is threaded at its lower extremity at 35', as shown in Fig. 1 of the drawings. The post 35 is preferably formed integral with the supply tube 21 and the dividing wall or partition 34 divides the air passage 33 into two passages 33^a and 33^b, as shown in Fig. 3 of the drawings. These passages 33^a and 33^b and 16 terminate in a mixing or atomizing chamber 40 near the end 21' of the supply tube 21. This end 21' of the tube is internally threaded and is engaged by a coupling 41 having a constricted passage 41' there-through. Threaded to the outer end of this coupling 41 is the distributing tube 42 carrying the nozzle 43 threaded or otherwise engaged thereto at its outer end. This tube 42 it is obvious may be of any desired length and flexible so as to permit ready access to any places desired to be either sprayed or painted. It is also obvious that by means of the couplings 41 having different sized threaded extremities the nozzle 43 may be directly connected thereto for work requiring such connection or shortening of the distribution tube.

Depending from the tube 21 at a point between the location of the valves 25 and 36 is an arm 45 bifurcated at its lower extremity to form the arms 45'. An operating lever 50 is carried between these arms 45' and pivoted thereto by a bolting member 46. This operating lever is provided at one extremity with a handle 51 which contacts with the lower extremity of the valve rod 26 at 51'. The other end 50'' of the operating lever 50 is apertured at 52 to freely slide on the valve 36. Upon either side of the reduced end 40 50'' and carried by the threaded end 35' of the valve rod 36 are two spaced nuts 54, which may be arranged a predetermined distance apart for a purpose to be hereinafter described.

Between the depending arm 45 and the valve post 35 is located a restricting plug 55 having an external adjustable threaded collar 56 and formed with a screw slot 57 at its outer extremity. This restricting plug 55 projects upward into the air passage 33 and by means of the adjustable collar 56 and the screw slot 57 the plug 55 may be arranged to project more or less into the air passage 33 to decrease or increase the amount of air passing therethrough and will be readily apparent.

In the operation of my device after the receptacle 10 is filled with paint or other material the device is placed in preparation for use. When the handle 51 is raised the valve 25 is lifted and air is allowed to pass through the supply tube 21 to the passages 17 and 33. The air passing through the passage 17 will immediately be transmitted to and through the U-tube 18 and out the

free end 18'' thereof. Inasmuch as the end 18'' of the U-tube terminates close to the bottom of the receptacle 10 the air being discharged in a downwardly direction therefrom will thoroughly agitate the contents of the receptacle 10 and rising to the top will furnish the pressure for expelling the contents out through the discharge passage 16. It will be apparent that when the handle 51 of the operating lever 50 is raised a sufficient distance the end 50'' of the operating lever will contact with the lower of the nuts 54 and draw down the valve rod 36, thus opening the passage 16 and permitting the material to enter the atomizing chamber 40 where it will be thoroughly mixed with the air entering the chamber 40 from the air passages 33^a, 33^b. From there it will be carried out by the air passage through the restricted aperture 41' to the nozzle 43. By means of the spaced arrangement of the nuts 54 upon the raising of the operating lever 50 the valve rod 26 will be raised a certain distance and a certain amount of air will be admitted to the receptacle 10 before the valve 36 is opened. Consequently air will have been admitted to the passages 17 and 33 before the material is allowed to discharge through the end of the passage 16. By this means I avoid the possibility of material reaching the mixing chamber in a solid mass before the admission of the air currents through the passage 33. It will be apparent therefore that all the material discharged from the nozzle 33 will be thoroughly mixed and atomized.

I claim:

1. In a spraying device, a receptacle, an air supply tube having a valve closure and being connected to an air supply at one extremity and provided with a projecting boss near its other extremity, said air supply tube being divided beneath said boss by a dividing wall to communicate with a passage communicating through said boss with said receptacle and to form an air conduit beneath said dividing wall leading to the forward end of said tube, said boss being provided with a discharge passage leading from said receptacle to the forward end of said tube, a post in said air conduit bifurcating the latter, a valve leading up through said post to form a closure for the outlet passage leading from said receptacle, and means to operate both of said valves.

2. In an air spraying device, an air supply tube connected with an air supply, said air supply tube being provided with a boss, a receptacle secured to said boss, said boss being provided with passages, one leading downwardly and rearwardly to communicate with said air supply tube, the other leading downwardly and forwardly to communicate with the forward end of said tube, said sup-

ply tube having a restricted air conduit formed therein beneath said boss and leading to the forward end of said tube, an adjustable plug projecting through said air supply tube into said restricted air conduit, whereby the amount of air passing through said conduit may be regulated.

3. In an air spraying device, an air supply tube connected with an air supply, said air supply tube being provided with a boss, a receptacle secured to said boss, said boss being provided with passages, one leading downwardly and rearwardly to communicate with said air supply tube, the other leading downwardly and forwardly to communicate with the forward end of said tube, said supply tube having a restricted air conduit formed beneath said boss and leading to the forward end of said tube, an adjustable plug projecting through said air supply tube into said restricted air conduit, whereby the amount of air passing through said conduit may be regulated, said air conduit being bifurcated at its forward end by a post, a valve projecting upwardly through said post to provide a closure for said discharge passage through said boss, said air supply tube being provided with a valve closure intermediate its connection with said air supply and said receptacle, and means to open said valves, said means being adapted to open one of said valves a predetermined distance before opening the other.

4. In an air spraying device, an air supply tube connected with an air supply, said air supply tube being provided with a boss, a receptacle secured to said boss, said boss being provided with passages, one leading downwardly and rearwardly to communicate with said air supply tube, the other leading downwardly and forwardly to communicate with the forward end of said tube,

said supply tube having a restricted air conduit formed therein beneath said boss and leading to the forward end of said tube, an adjustable plug projecting through said air supply tube into said restricted air conduit, whereby the amount of air passing through said conduit may be regulated, said air conduit being bifurcated at its forward end by a post, a valve projecting upwardly through said post to provide a closure for said discharge passage through said boss, said air supply tube being provided with a valve closure intermediate its connection with said air supply and said receptacle, both of said valves being provided with downwardly extending stem portions, said air supply tube being provided intermediate said valve stems with a depending projection to which is pivoted an operating lever provided with a handle at one extremity and provided with an aperture at its other extremity, said first named valve stem fitting loosely in said aperture, said first named valve stem being provided with spaced means carried by said stem on either side of said lever and adapted to coact therewith, said operating lever contacting with the extremity of said second named valve stem, said operating lever being adapted upon movement of the handle to open the last named valve closure a predetermined distance before coacting with said spaced means to open the first named valve closure, whereby air may be admitted to said receptacle and to said atomizing chamber before the said discharge outlet leading from said receptacle is open.

In testimony whereof, I have subscribed my name.

WILLIAM P. MOTT.

Witnesses:

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