

B. E. HOLTON.
 AIR BRUSH.
 APPLICATION FILED JUNE 9, 1919.

1,349,154.

Patented Aug. 10, 1920.

Fig. 1.

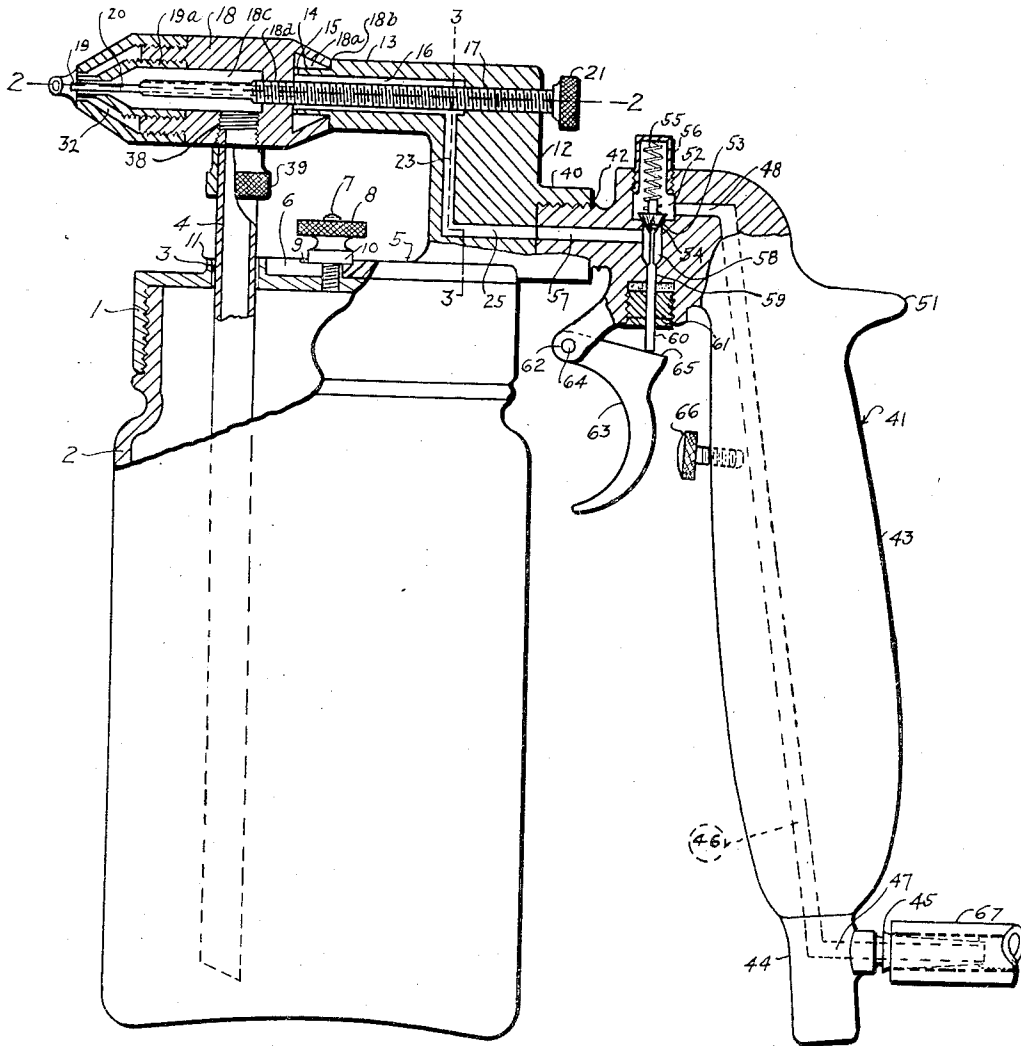


Fig. 2.

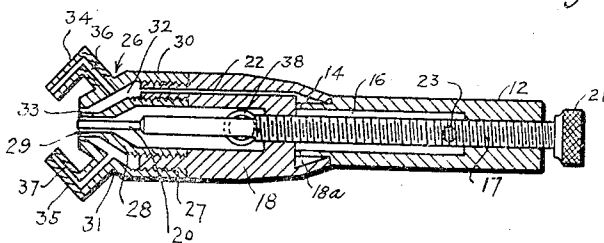
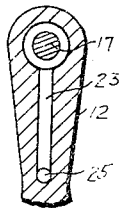


Fig. 3.



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AIR-BRUSH.

1,349,154.

Specification of Letters Patent. Patented Aug. 10, 1920.

Application filed June 9, 1919. Serial No. 302,981.

To all whom it may concern:

Be it known that I, BIRCHARD E. HOLTON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Air-Brushes, of which the following is a specification.

My object is to make an improved air brush, and my invention consists of the novel features herein shown, described and claimed.

Figure 1 is a side view partly in elevation and partly in section.

Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

Fig. 3 is a vertical fragmentary cross section on the line 3—3 of Fig. 1.

The cap 1 is screw seated upon the glass jar 2 and has a tube outlet 3. The tube 4 fits loosely in the outlet 3 so that air may pass inwardly through the outlet 3 around the tube and the paint may pass from the jar 2 outwardly through the tube. The base 5 fits upon the upper face of the cap 1 and has a notch 6. A stud 7 is fixed in the cap 1 and a handwheel nut 8 is screw seated upon the stud. A recess 9 is formed in the upper face of the base 5 to receive the base 10 of the nut, so that when the nut is loosened the base 5 will slide with the stud 7 passing through the slot 6 so that the base may be removed and another jar substituted, and so that when the base is placed in position the boss 11 around the outlet opening 3 extends into the slot 6 and the base 10 fits in the recess 9, and when the nut 8 is manipulated and tightened the base is secured to the cap 1.

A pedestal 12 is formed integral with the base 5 and extends upwardly to a point considerably above the handwheel nut 8. The barrel 13 is formed integral with the upper part of the pedestal 12 and extends horizontally over the nut 8. The barrel 13 has a reduced forward end 14 and the forward end face is cross cut to make the outlet openings 15, and the barrel 13 has a chamber bore 16 extending from its front end half way to the back end and a reduced screw threaded bore 17 extending from the bore 16.

The extension piece 18 has an under cut opening 18^a and the reduced end 14 is inserted into this opening and soldered around the line 18^b so that the under cut opening

18^a forms an annular air chamber. The extension piece 18 has a paint chamber 18^c bored from its front end. The paint orifice 19 extends from the chamber 18^c in line with the screw threaded bore 17, said bore 17 being formed and screw threaded through the wall 18^d, which separates the paint chamber 18^c from the air chamber 18^a.

The orifice 19 is formed in a reducer sleeve 19^a and the reducer sleeve is screwed into the end of the extension 18. It is necessary to make the orifice in a separate piece so that the paint chamber 18^c may be bored.

The regulating needle 20 has a point extending into the orifice 19 and the body of the needle extends through the chambers 18^c and 16 and is screw seated in the bore 17, there being a knurled head 21 upon the outer end of the regulating needle for manually manipulating the needle to regulate the orifice 19.

A bore 22 is formed from the end face of the extension piece 18 outside of the reducer 19^a to the chamber 18^a. After the bore 22 has been formed the air nozzle 26 is placed in position.

The passage 23 extends from the chamber 16 downwardly to near the bottom of the pedestal 12 and a bore 25 leads horizontally into the bottom of the pedestal 12 to the bore 23.

The details of the air nozzle construction 26 are as follows:

An external screw thread 27 is formed around the forward end of the extension barrel 18 and the extreme forward end of the barrel is tapered in front of the thread 27 to make the inner cone 28 around which the air circulates to and around the paint nozzle 29, the orifice 19 being through the nozzle 29. The outer wall of the air nozzle 26 consists of a band 30 screw seated upon the thread 27, the cone 31 extending from the band 30 and forming the chamber 32 around the cone 28 and terminating at the forward end of the nozzle 29 and having a thin outlet 33 around the nozzle 29, and elbow-shaped arms 34 and 35 extending outwardly from the cone 31 and forwardly and inwardly in horizontal alinement with the outlet of the paint through the orifice 19 and the outlet of the air through the outlet 33, and having air passages 36 and 37 discharging substantially at right angles to each other and crosswise of each other and

at angles of about 45° relative to the line of discharge through the paint orifice 19 so as to produce a fan-shaped spray of paint.

A screw threaded opening 38 leads through the bottom of the extension barrel 18 to the chamber 18°. The upper end of the tube 4 is screw threaded to fit this opening, and a knurled rim 39 is fixed upon the tube to serve as a handwheel for screwing the tube in and out of the opening 38. An internally screw threaded nipple 40 extends from the bottom of the pedestal 12 and the base 5 around the bore 25, and the handle 41 has an externally screw threaded nipple 42 screwed into the nipple 40.

The main parts of the handle 41 are all cast integral and the details are as follows:

The hand grip portion 43 has a lower extension 44 and a hose nipple 45 extending laterally from the extension 44. A passage 46 extends from the bore 47 through the hose nipple 45 to a point above the nipple 42. The passage 48 extends from the upper end of the passage 46. A stop lug 51 extends from the upper end of the hand grip portion 43.

A valve chamber 52 is drilled from the upper end of the casting across the passage 48, a valve seat 53 is formed at the lower end of the chamber 52, a valve 54 is mounted upon the valve seat 53 below the passage 48, a spring 55 is mounted upon the valve, and a cap 56 is placed around the spring and screwed into the chamber 52. A bore 57 is formed from the end of the nipple 42 in line with the bore 25. A bore 58 is formed downwardly from the valve seat 53 to connect the passage 48 to the bore 57, and a valve stem bore 59 is formed downwardly from the bore 58. The valve stem 60 is connected to the valve 54 and extends through the bore 59, there being a stuffing box construction 61 around the valve stem 60. A bearing arm 62 extends from the main casting near the stuffing box construction 59, a trigger 63 is connected to the bearing arm 62 by a pin 64, and the trigger 63 has a face 65 engaging the lower end of the stem 60. An adjusting screw 66 is tapped into the hand grip portion 43 in position to be engaged by the trigger 63, so that by adjusting the screw 66 the movement of the trigger 63 may be regulated to regulate the opening of the valve 54. The air hose 67 is connected to the hose nipple 45.

The compressed air will pass through the hose 67, through the bore 47, the passage 46 and the bore 48 to the valve 54 and when the valve 54 is opened by manipulating the trigger 63 the compressed air will pass through the bores 57, 25, 23, 16, 18° and 22 to the chamber 32 and from the chamber 32 will pass through the opening 33 and through the openings 36 and 37.

The discharge of the compressed air through the openings 36, 37 and 33 around the paint nozzle 29 will create a vacuum and draw the paint from the jar 2 through the tube 4 to the chamber 18° and from the chamber 18° through the paint nozzle 19 around the needle 20, and the vacuum of the flow of paint will be regulated by manipulating the head 21.

When the air and paint are flowing properly a fan-shaped spray is produced and the spray may be directed to serve the purpose of a flat brush, and the spray is controlled by gripping the hand grip 43 and manipulating the air brush as a whole in a manner similar to the manipulation of an ordinary flat hand brush.

When it is desired to change the paint it is only necessary to manipulate the rim 39 and unscrew the tube 4 and manipulate the nut 8 to raise the base 10 out of the recess 9 then another jar and another tube may be applied.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

1. In an air brush, a paint receptacle, a cap on the paint receptacle, a base removably connected to the cap, a pedestal extending upwardly from the base, a barrel extending from the upper end of said pedestal, a paint chamber in said barrel and a nozzle on said barrel leading from said paint chamber, a paint tube screwed into said barrel leading from said chamber and extending loosely through said cap into said paint receptacle, a regulating valve for said nozzle, a handle connected to said pedestal and provided with an air passage, a hose nipple on said handle communicating with said passage, said pedestal having an air passage communicating with the air passage in said handle, said barrel having an air passage leading from the air passage in said pedestal through the forward end of the barrel, an air nozzle on the forward end of the barrel around said paint nozzle, a valve controlling the supply of air through said passages and said air nozzle, and a trigger for actuating said valve.

2. In an air brush, a paint receptacle, a cap screwed upon the paint receptacle, atomizer mechanism removably mounted upon the cap, and a tube connected to and extending from the atomizer mechanism through the cap into the receptacle.

3. In an air brush, a paint receptacle, a cap on the paint receptacle, a paint tube extending loosely through the cap into the receptacle, a base removably connected to the cap, a pedestal extending upwardly from the base, a barrel extending loosely from the upper end of the pedestal and having a paint chamber and a nozzle, the paint tube

being connected to the barrel to communicate with the chamber, a regulating needle for the paint nozzle, a handle connected to the pedestal and adapted to receive an air hose at its lower end, there being an air passage from the air hose upwardly through the handle and through the pedestal to the forward end of the barrel, an air nozzle mounted upon the barrel forming an air chamber around the paint nozzle, and valve and trigger mechanism for controlling the air, there being a discharge opening from the air chamber around the paint nozzle and discharge openings from the air nozzle crosswise of each other and crosswise of the paint discharge at right angles of about 45° so as to produce a fan-shaped spray of paint.

4. In an air brush, a paint receptacle, a cap on the paint receptacle, a base removably connected to the cap, a pedestal extending upwardly from the base, a barrel extending from the upper end of said pedestal, a paint chamber in said barrel and a nozzle on said barrel leading from said paint chamber, a paint tube connected to said barrel and leading from said chamber loosely through said cap into said receptacle, a regulating valve for said nozzle, an internally threaded nipple on said pedestal, a handle, an externally threaded nipple on said handle adapted to screw into said internally threaded nipple, said handle being provided with an air passage leading through said externally threaded nipple, a hose nipple connected to the inlet end of said air passage, said pedestal having an air passage leading from said air passage in said handle through the air passage in said externally threaded nipple, said barrel having an air passage leading from the air passage in said pedestal, through the forward end of the barrel, an air nozzle on the forward end of said barrel around said paint nozzle and communicating with the air passage in said barrel, a valve controlling the supply of air through said passages and

said air nozzle, and a trigger for actuating said valve.

5. In an air brush, a paint receptacle, a cap on the paint receptacle, a base removably connected to the cap, a pedestal extending upwardly from the base, a barrel extending from the upper end of said pedestal, a paint chamber in said barrel and a nozzle on said barrel leading from said paint chamber, a paint tube connected to said barrel and leading from said chamber loosely through said cap into said receptacles, a regulating valve for said nozzle, an internally threaded nipple on said pedestal, a handle, an externally threaded nipple on said handle adapted to screw into said internally threaded nipple, said handle being provided with an air passage leading through said externally threaded nipple, a hose nipple connected to the inlet end of said air passage, said pedestal having an air passage leading from said air passage in said handle through the air passage in said externally threaded nipple, said barrel having an air passage leading from the air passage in said pedestal, through the forward end of the barrel, an air nozzle on the forward end of said barrel around said paint nozzle and communicating with the air passage in said barrel, a valve mounted in said handle for controlling the supply of air through said air passages and said nozzle, and a trigger mounted on said handle for actuating said valve.

6. In an air brush, a paint receptacle, a cap screwed on to said paint receptacle, an atomizer mechanism removably mounted on said cap, said atomized mechanism including a barrel formed with a paint chamber and a tube screwed into said barrel communicating with said chamber and extending loosely through said cap into said receptacle.

In testimony whereof I have signed my name to this specification.

BIRCHARD E. HOLTON.