

March 31, 1925.

1,531,986

A. SHELBURNE
AIR BRUSH NOZZLE
Filed April 2, 1924

Fig. 1.

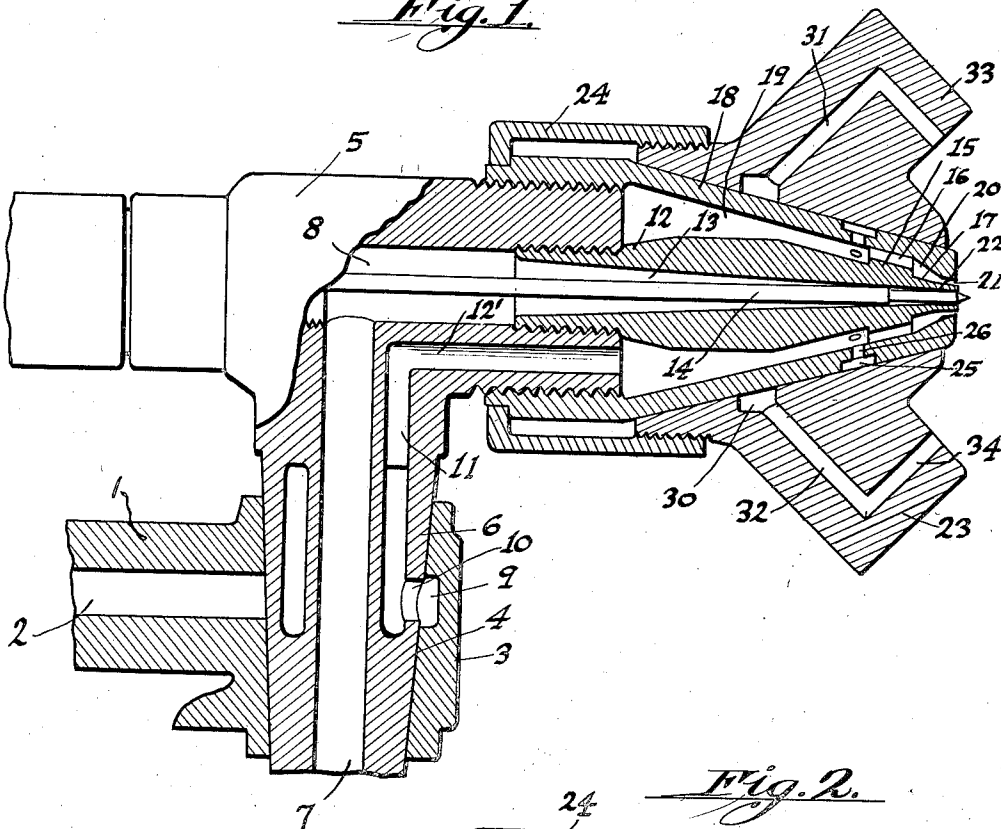


Fig. 2.

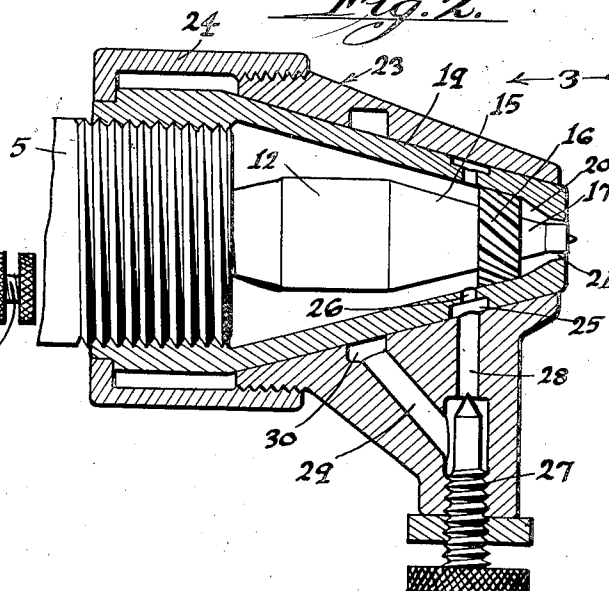
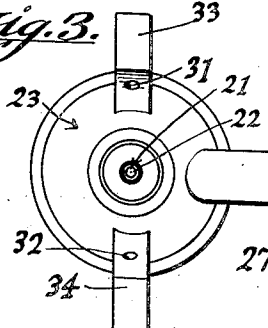


Fig. 3.



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UNITED STATES PATENT OFFICE.

AUGUSTINE SHELburnE, OF SOUTH PASADENA, CALIFORNIA.

AIR-BRUSH NOZZLE.

Application filed April 2, 1924. Serial No. 703,625.

To all whom it may concern:

Be it known that I, AUGUSTINE SHELburnE, a citizen of the United States, residing at South Pasadena, in the county of Los Angeles and State of California, have invented new and useful Improvements in Air-Brush Nozzles, of which the following is a specification.

My invention relates to air brushes and particularly to air brush nozzles, and consists of the novel features herein shown, described and claimed.

An object is to provide means in the discharge end of the air passage of an air brush nozzle to give the air a whirling motion around the discharging paint or other material.

Other objects and advantages will appear from the drawings and specifications.

The drawings illustrate the invention.

Figure 1 is a fragmentary sectional elevation of an air brush nozzle provided with means for giving the discharging air a whirling motion in accordance with the principles of my invention.

Fig. 2 is a view analogous to Fig. 1 with the outer cap shown in section and the liquid nozzle in full lines.

Fig. 3 is a front elevation looking in the direction indicated by the arrows 3 in Fig. 2.

Referring to Fig. 1, the barrel 1 has an air passage 2, and the head 3 is formed integral with the barrel 1 and has a vertical tapered opening 4 at right angles to the air passage 2. The delivery head 5 has a tapered shank 6 fitting rotatively in the opening 4. The paint passage 7 leads upwardly through the shank 6 to the horizontal bore 8 leading horizontally through the head 5. A recess 9 is formed in the head 3 from the bore 4 and communicating with the passage 2, a port 10 is formed in the shank 6 to register with the recess 9 and the passage 11 leads upwardly from the port 10 to the head 5 and connects with the passage 12' formed from the front end of the head 5.

The inner liquid nozzle 12 is screwed into the passage 8 and has a bore 13 communicating with the passage 8. The needle valve 14 fits in the small discharge end of the bore 13 to control the discharge of liquid. The tapered head 15 is formed near the discharge end of the nozzle 12 and has spiral grooves 16. A tapered tip 17 extends from the bottoms of the grooves outwardly. The outer nozzle cap 18 is screwed upon the head

5 and has a tapered chamber 19 into which the passage 12' discharges. The cap 18 fits closely around the spirally grooved head 15 and forms a secondary chamber 20 into which the grooves 16 discharge.

The tip 17 extends loosely through the air discharge opening 21 at the forward end of the cap 18 so as to make an annular air discharge opening around and spaced slightly from the discharge opening 22 of the inner nozzle 12.

The spreader attachment 23 fits upon the cap 18, a union nut 24 fits against a shoulder upon the cap 18 and screws upon the spreader attachment 23. An annular groove 25 is formed in the periphery of the cap 18 and has ports 26 leading from the chamber 19. A regulating valve 27, carried by the spreader attachment 23, operates in a port 28 communicating with the recess 25 to control the passage of air from the recess 25 through the port 28 to the branch passage 29 communicating with an annular internal recess 30 and the passages 31 and 32 lead from the recess 30 outwardly to discharge nozzles 33 and 34. The discharge nozzles 33 and 34 are at angles of about 45 degrees relative to the line of discharge through the passage 22 so as to discharge any desired amount of air to the mixture coming from the passages 21 and 22.

The spirally grooved head 15 creates a whirling motion of the air in the chamber 20 and this whirling air discharges through the opening 21 around the liquid discharging through the opening 22, the air and the liquid mixing form a spray which may be accurately regulated by operating the needle valves 14 and 27.

Thus, I have produced an air brush nozzle having a spirally grooved head in the air passage immediately behind the discharge outlet so as to give a whirling motion to the discharged air.

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

I claim:

1. In an air brush nozzle a distributing head, an inner liquid nozzle connected to the distributing head, an outer nozzle cap connected to the distributing head so as to form an air passage between the inner nozzle and the cap and a head upon the inner nozzle and fitting in the cap, there being spiral grooves in periphery of the head so

as to give a whirling motion to the air that passes the head the periphery of the head contacting with the inner surface of the outer nozzle cap.

- 5 2. In an air brush nozzle a distributing head, an inner liquid nozzle extending from the head, an outer nozzle cap extending from the head and forming an air passage around the inner nozzle, the air passage being tapered towards the outlet, a head upon the inner nozzle and tapered to fit the cap and having spiral grooves in its periphery the periphery of the head contacting with the inner surface of the outer nozzle cap.
- 10 3. In an air brush nozzle an inner liquid nozzle, a tapered head near the discharge end of the inner liquid nozzle, there being spiral

grooves in the periphery of the tapered head, an outer air nozzle cap having a tapered chamber and a discharge opening, the tapered head fitting the cap near the discharge opening and forming a secondary chamber between the tapered head and the discharge opening and a tapered tip extending from the head loosely through the discharge opening to form an annular air passage around the tip, there being a liquid passage through the tip the periphery of the head contacting with the inner surface of the outer nozzle cap.

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

A. SHELburnE.