July 28, 1925. 1,547,349

C. L. REICHENBACH

NOZZLE FOR AIR BRUSHES

Filed June 2, 1923

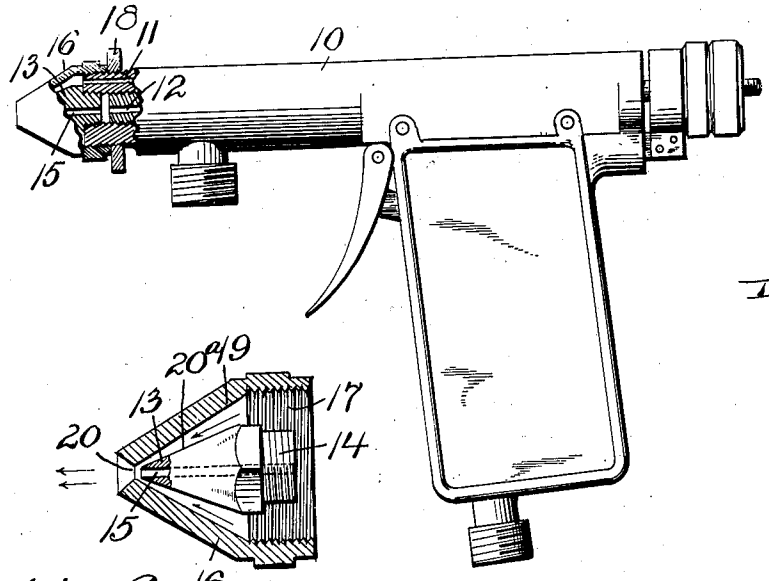


Fig. 1

Fig. 2

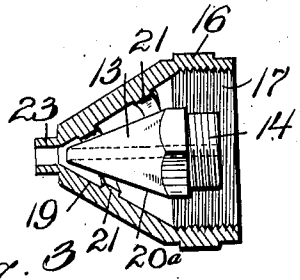


Fig. 3

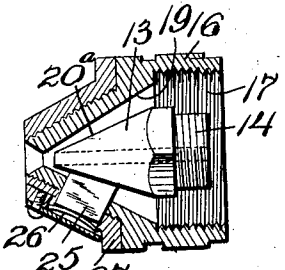


Fig. 5

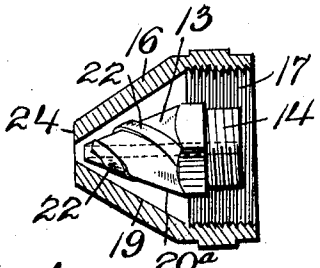


Fig. 4

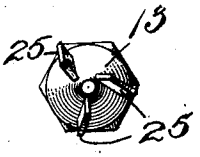


Fig. 6

INVENTOR

Carl L. Reichenbach,

BY

Wm. H. Campbell.

ATTORNEY

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UNITED STATES PATENT OFFICE.

CARL L. REICHENBACH, OF YONKERS, NEW YORK, ASSIGNOR TO HOWARD W. BEACH, OF NEWARK, NEW JERSEY.

NOZZLE FOR AIR BRUSHES.

Application filed June 2, 1923. Serial No. 642,951.

To all whom it may concern:

Be it known that I, CARL L. REICHENBACH, a citizen of the United States, and a resident of Yonkers, county of Westchester, and State of New York, have invented certain new and useful Improvements in Nozzles for Air Brushes, of which the following is a specification.

This invention relates to an improved nozzle for air brushes, which nozzle is constructed to more efficiently and economically apply a coating of paint and other liquids or semi-liquids, and to produce a more even and smooth application or coat on the surface treated.

The invention is particularly adapted for applying heavy materials and viscous materials with a comparatively low air pressure at the nozzle, and for applying lighter materials with a relatively low air pressure.

The invention is illustrated in the accompanying drawing, in which Figure 1 is a side view of an air brush with a part thereof shown in section to indicate the attachment of the parts of the nozzle. Figure 2 is an enlarged section of the nozzle shown in Figure 1. Figures 3 and 4 are similar views of modified forms of nozzles, and Figure 5 is a similar view of a further modification, and Figure 6 is a front view of the inner member of Figure 5.

The nozzle is applicable to any of the types of air brushes, but I show it applied to a brush of the type shown in United States Patent No. 1,430,533, dated Oct. 3, 1922.

The brush is shown at 10, and the body portion has a passage or duct 11, through which air under pressure is conducted to the front of the brush, and a passage 12 is arranged for the flow of the paint, varnish or other material that is being applied.

The nozzle is formed of two members, one the inner member 13 which is secured in place usually by screwing the part 14 into the end of the barrel of the brush, thus placing the bore 15 in register with the passage 12. Surrounding the inner member, and spaced therefrom, is the outer member 16 which is usually fastened by the screw-threaded portion 17 fitting over the screw-threaded end of the barrel of the brush and being thus not only held in place, but being adjustable relative to the inner member, and, when adjusted, the outer member is locked by the lock nut 18.

The inner wall 19 of the outer member is tapered, and since the nozzles are usually rounded it forms a cone-shaped interior, at the small end of which is arranged the outlet 20 which is substantially in line with the bore 15 of the inner member. The outer wall or face 20^a of the inner member is also tapered, but at a less angle to the longitudinal axis of the nozzle than the wall 19, so that these walls converge, forming a more restricted passage as the outlet 20 is approached.

This structure is of decided advantage over those in which the walls of the inner and outer members are parallel, or in which the air is subjected to a quick change in direction, in that it eliminates the back pressure to a great extent and increases the velocity where the air passes the outlet of the inner member and picks up the material to be applied to atomizers, this velocity in the air being supplied without increased pressure, so that a brush supplied with this nozzle finely vaporizes and forms into a mist material which, with the other types of nozzle, requires a very high pressure of air, and does it with a relatively low pressure.

If the material is to be given a rotary movement while it is leaving and after it leaves the nozzle, I may give the air a helical path of travel by placing a helical element, such as the rib 21, on the outer member, shown in Figure 3, or the rib 22 on the inner member, which is shown in Figure 4. Furthermore, a more concentrated effect for such rotary stream can be provided for by placing the short extension or boss 23 on the outlet end of the outer member, as will be seen in Figure 3, or if it is to be given a greater spread the face of the outer member can be made blunt, as shown at 24 in Figure 4.

In Figures 5 and 6 I show a still further modified form in which the outer member is provided with blades 25 which are arranged at an angle, as shown in Figure 6, and are held so that they press against the inner member and are seated in the outer member, such pressing being caused by small leaf springs 26 which can be inserted in the shell 27 on the outer member.

The amount of air that comes through and

is ejected from the nozzle can be regulated by the usual valve in apparatus of this kind, and also by regulating the outer member relative to the inner member, as will be evident.

I claim:

A nozzle for air brushes comprising an outer member with a tapered inner wall and with an outlet at its small end, an inner member spaced from the outer member and having its outside wall tapered at an angle less than that of the wall of the outer member relative to the longitudinal axis of the nozzle, and having an outlet at its small end, and a spiral rib on the outer face of the inner member to project into said space and influence the flow of fluid through said space.

In testimony that I claim the foregoing, I have hereto set my hand, this 21st day of October, 1922.

C. L. REICHENBACH.