H. MAASBERG.

SPRAYING NOZZLE.

APPLICATION FILED APR. 21, 1909.

964,991.

Patented July 19, 1910.

Fig. 1.

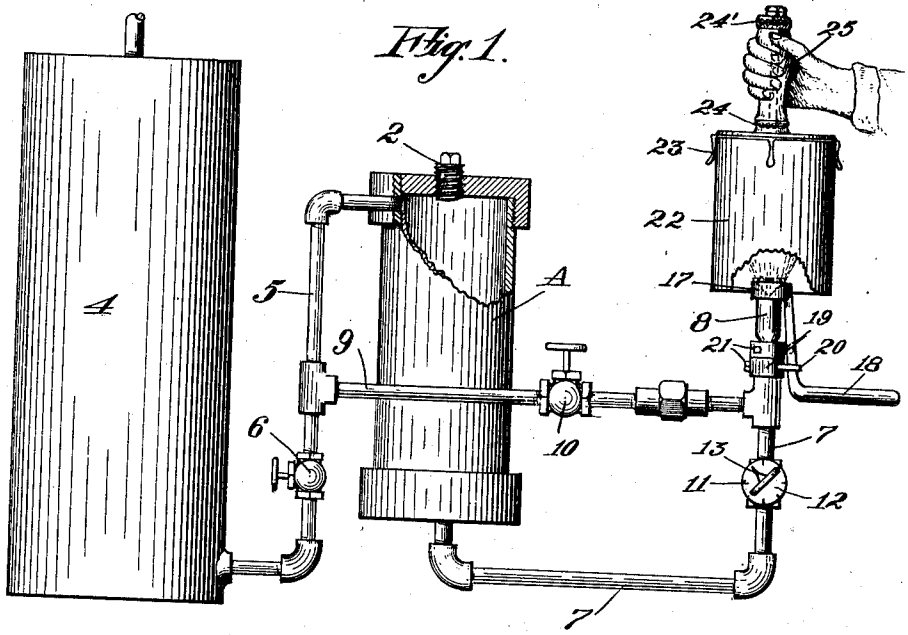


Fig. 2.

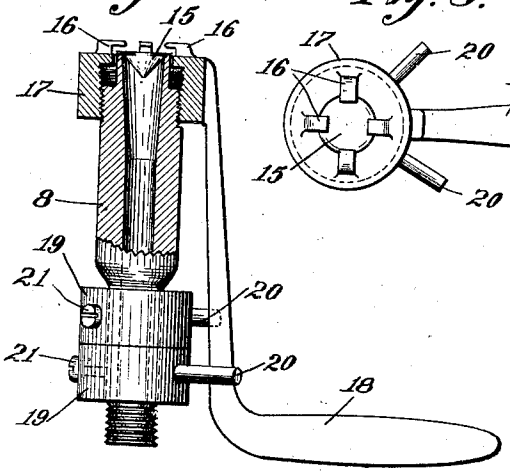
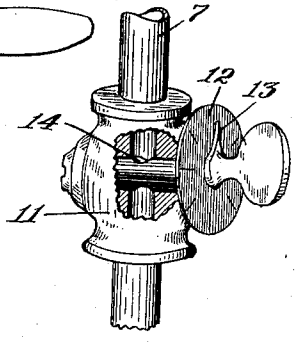


Fig. 3.

Fig. 4.



Witnesses;

R. S. Barry,

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Inventor

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UNITED STATES PATENT OFFICE.

HERMANN MAASBERG, OF OAKLAND, CALIFORNIA.

SPRAYING-NOZZLE.

964,991. Specification of Letters Patent. Patented July 19, 1910.

Application filed April 21, 1909. Serial No. 491,318.

To all whom it may concern:

Be it known that I, HERMANN MAASBERG, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Spraying-Nozzles, of which the following is a specification.

My invention relates to spraying nozzles, and particularly to that class adapted to spray heavy or viscous liquids, such as varnish, liquid glaze and the like.

It is the object of my invention to provide a spraying nozzle for applying a viscous compound or glaze to the inner surface of fruit cans and the like, for the purpose of rendering them acid proof.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the invention, partly in section. Fig. 2 is a detail in section of the spraying nozzle. Fig. 3 is an end view of the nozzle. Fig. 4 is a detailed perspective of a regulating valve and dial.

In the drawings, A is the container for the glaze or other liquid to be sprayed; this container having an opening closed by the plug 2, through which the vessel is filled.

4 is a compressed air tank, into which air is forced to the required pressure by any suitable means.

An inlet pipe 5 connects the reservoir A and tank 4, to create a pressure on top of the liquid in the reservoir; a shut off valve 6 being interposed therein to cut off the air supply when the machine is not in use, or while the reservoir A is being filled.

A pipe 7 through which the viscous liquid is discharged, leads from the reservoir A to the spraying nozzle 8. Compressed air is admitted to the nozzle 8 through a pipe 9 from pipe 5; a regulating valve 10, being interposed in pipe 9 between the air supply pipe 5, and the discharge pipe 7.

A regulating valve 11 is fitted on the varnish supply pipe 9 at a point between the reservoir A, and the connection with the air pipe 9. A dial 12, and pointer 13, are attached to the stem of the valve 11 to indicate the position of the port 14, Fig. 4, and enable the operator to control the liquid discharge.

The spraying nozzle 8, particularly shown in Figs. 2 and 3, is fitted with a cone valve 15, seated in the mouth of the nozzle, and retained therein by means of the lugs 16 on the collar 17 which is loosely threaded on the nozzle 8. A handle 18 is attached to the collar 17, by which the collar may be turned about the nozzle to regulate the discharge opening by limiting the play of the cone 15 between its seat and the lugs 16. Suitable stops as the projecting pins 20 on collars 19, on the neck of the nozzle 8, limit the movement of the handle 18 and the collar 17. When the pins 20 are in the desired position, the collars 19 are secured to the nozzle by means of the set screws 21.

In operation, the reservoir A is filled with varnish or other liquid, and the plug 2 screwed on tight to render the reservoir air tight. Air under pressure is then admitted to the reservoir A and pipe 9 from the tank 4 through the valve 6, and supply pipe 5. The pressure of air above the liquid in the reservoir, forces the liquid out of the nozzle 8, when the valve 11 is opened. At the same time air is admitted to the nozzle by opening the valve 10, whereupon it mingles with the heavier liquid and causes it to be discharged from the nozzle in the form of a spray. The density of this spray is governed by adjusting the valves 10—11 to obtain the proper proportions of air and liquid. The force and quantity of the spray may also be governed by adjusting the cone valve 15 in its seat by means of the handle 18, which also serves as a cut-off. The liquid and air on striking the apex of the cone 15 is caused to spread outward in conical form. A can 22 which is to be coated on the inside with glaze is inverted and held over the nozzle 8 as shown in Fig. 1, and given a revolving motion; the valve 15 being opened, the spray of liquid is evenly distributed over the inner surface of the can. Any desired means may be employed for holding and revolving the can, but I prefer to use the method shown in the drawings, which consists of a spring clamp 23 mounted on ball bearings 24—24', on a handle 25. The bottom of the can is clamped between the springs 23, and the whole caused to revolve by twirling the can 22 with one hand, while holding the handle 25 with the other. The frictionless bearings 24 insure the can revolving until the coating of varnish is thoroughly applied also leaving the operator a free hand with which to manipulate the handle 18 and valves 10—11.

The cone valve 15 seats flush over the end of the nozzle and has only a small seating area, so that when lifted a proper spray will be produced and not be thrown out too much to the sides. This cone arrangement is quite important.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

An improved spraying nozzle, said nozzle having a discharge orifice and an externally threaded outer end, a loose gravity cone fitting in said orifice, a screw-threaded sleeve turnably mounted on the threaded portion of the nozzle and lugs on the sleeve projecting inwardly and overhanging the cone to limit the outward movement of the latter, means for turning the sleeve to vary the spray, said means including a handle portion connected with the sleeve and projecting pins on the nozzle to limit the movement of the handle and the adjustment of the sleeve.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HERMANN MAASBERG.

Witnesses:

GEORGE KIMBALL EDWARDS,

HERMAN CHARLES PFISTER.