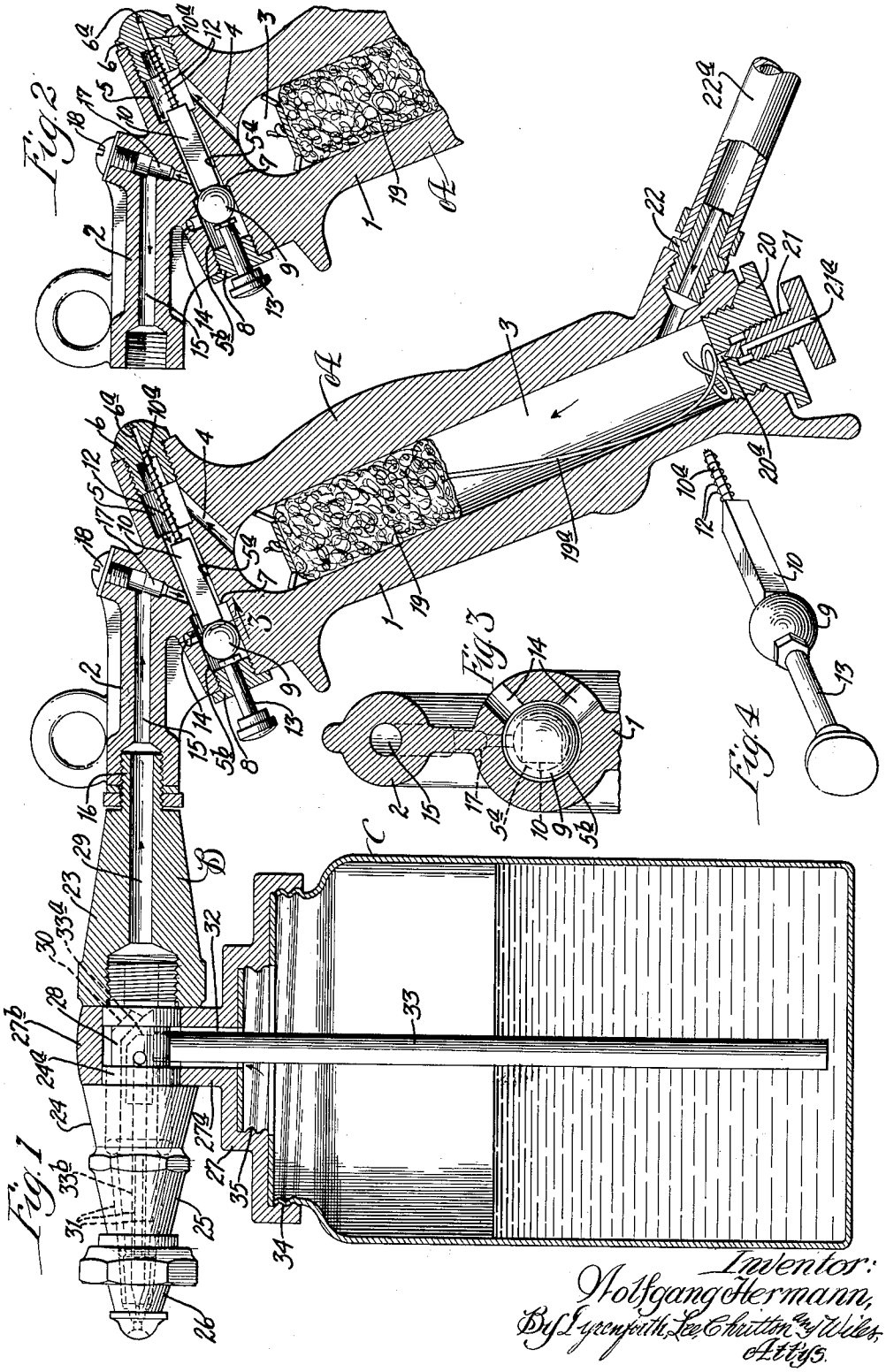
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SPRAYING DEVICE

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SPRAYING DEVICE

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This invention relates particularly to a spraying device adapted for the purpose of spraying paints, lacquers, or other liquids.

The primary object is to provide an improved device for controlling the passage of compressed air admitted to the nozzle. A further object is to provide for the admission of air to the liquid container and its release therefrom in a simplified manner.

The invention is illustrated in a preferred embodiment in the accompanying drawing, in which—

Figure 1 is a vertical sectional view of a spraying device embodying the invention, showing in open position the valve which controls the escape of air from the liquid container at the end of the spraying operation; Fig. 2 is a broken section showing the valve in the position it occupies during the spraying operation; Fig. 3 is an enlarged broken section taken as indicated at line 3 of Fig. 1; and Fig. 4 is a perspective view showing the ball valve employed and the plunger associated therewith.

The invention is shown embodied in a device which comprises a handle, and a nozzle carried by said handle, and a liquid container carried by said nozzle. In the illustration given, compressed air is supplied from a hose through the handle of the spraying device which is equipped with an improved valve device which normally is in position to permit escape from the handle and from the liquid container.

In the construction illustrated, A designates a handle; B, a nozzle mounted on the handle; and C, a liquid container depending from and carried by the nozzle.

The handle A preferably is of cast metal, such as aluminum. It comprises a handle grip 1 and a barrel 2 formed integrally with the handle grip and projecting angularly from the upper portion thereof. The handle grip is provided with an air chamber 3 which communicates at its upper portion with an air duct 4 which, in turn, communicates with a bore 5 which extends through the elbow portion of the handle. The bore 5 is fitted at its rear end with a screw-plug 6, and the bore has a reduced intermediate portion 5^a and a larger front end portion 5^b. The junction of the portions 5^a and 5^b is a valve seat 7. At its front end, the portion 5^b of the bore is fitted with a nut 8 which is provided with a guide perforation.

The valve device shown comprises a ball 9 located in the chamber 5^b; a spring actuated plunger 10, of square cross-section, which works in the passage 5^a as a guide and which has a rearwardly extending reduced stem 10^a working in a bore 6^a in the plug or cap 6. A spring 12 tends to force the plunger 10 forwardly and unseat the ball valve 9. The valve device further comprises a finger actuated plunger 13 which works freely through the perforation in the nut 8. The chamber 5^b is provided in front of the valve seat 7 with an outlet port, or ports, 14, leading to the external atmosphere.

The barrel 2 of the handle is provided with an air passage 15 and at the front end thereof a tapped bore which receives the threaded shank 16 of the nozzle.

The air passage 15 communicates at its rear end with a forwardly and downwardly inclined duct 17 which intersects the bore 5^a at an acute angle. The duct 17 is shown closed at its outer end by a screw 18. Should it be desired, the screw 18 may be replaced by a needle-valve adapted to regulate the quantity of air passing to the nozzle. The duct 17 is offset with relation to the duct 4. That is, the duct 17 is located some distance in front of the duct 4 and points in a direction to direct air escaping from the liquid container C towards the chamber 5^b, from whence it may escape to the atmosphere.

Normally the spring pressed plunger 10 holds the valve 9 unseated. When the device is in use, the operator, through the medium of the finger-piece 13, holds the valve against the seat 7, so that compressed air will pass from the handle through the duct 4 into the chamber 5 and past the plunger 10 to the duct 17, and thence to the duct 15, and then to the nozzle. When the operator releases the finger-piece 13, the valve is immediately unseated, and air can then pass from the container to the external atmosphere and also from the chamber 3 to the ex-

ternal atmosphere. The purpose is to prevent the spattering of varnish, or paint, at the end of the operation.

The chamber 3 is shown provided with a packing of cotton, or the like, 19, adapted to prevent the passage of water or oil, while permitting the passage of air. The wadding is shown provided with a string 19^a by means of which it may be withdrawn from the chamber 3. Oil, or oil and water, may collect in the lower end of the chamber 3. Accordingly, the lower end of the chambers are fitted with a plug 20 having therethrough a passage 20^a guarded by a valve 21 which has extending therethrough a duct 21^a. When desired, the valve 21 may be partially unscrewed to unseat the valve and permit escape of any liquid which may accumulate in the lower portion of chamber 3. The handle is provided near its lower end with a nipple 22 which connects with an air hose 22^a. Through it compressed air is admitted to the handle.

The nozzle B may be of any suitable construction. It is shown as comprising three main sections 23, 24 and 25. Also, it is shown as equipped with a nozzle-tip 26 of suitable construction.

The container C is equipped with a cap 27 which depends from a stem 27^a carried by a ring 27^b. Said ring is fitted on a reduced portion 24^a of the nozzle-section 24, and is clamped between the sections 23 and 24. The bearing 24^a is provided with an angular air passage 28 whose outer wall is formed by the ring 27^b.

The nozzle section 23 is provided with a central air passage 29 which communicates through an inclined duct 30 in the nozzle-section 24 with the angular passage 28. From the angular passage 28, forwardly converging air ducts 31 extend to the tip of the nozzle.

The angular air passage 28 also communicates through a passage 32 with the interior of the container C. A liquid tube 33 extends freely through the air passage 32 and has its upper end connected with the nozzle-section 24 and communicating with a liquid passage 33^a, which, in turn, communicates with a central liquid passage 33^b leading to the tip of the nozzle.

The construction of the nozzle itself is not claimed in the present application. The nozzle is more fully described in my application, Serial No. 326,135 filed even date herewith.

The container cap 27 is shown provided with a large threaded socket 34 into which is screwed the upper end of the container C. The cap is also shown provided with a smaller threaded socket 36 which is adapted to receive a container of smaller size, which may be substituted for the large container.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In a spraying device, a handle provided with a bore and having an angular upper end, a valve chamber extending through the elbow portion of the handle and provided near its front end with a valve seat and in front of said seat with an outlet port, the upper portion of the handle being provided with nozzle-attaching means, and with ducts extending from the nozzle to the valve chamber and from the upper portion of said bore to the valve chamber, a valve associated with said seat, a spring-pressed plunger at the rear of said valve and normally holding it unseated, and a forwardly presented finger-piece adapted to hold said valve in seated position.

2. In a spraying device, a handle provided with a bore and having an angular upper end provided in its elbow portion with a valve chamber having a forwardly presented valve seat and in front of said seat an outlet port, a nozzle-attaching means and an air duct extending therefrom and having a portion communicating with the valve chamber back of said seat, a port connecting the upper portion of said bore with the valve chamber, and a valve device in said valve chamber comprising a rear plug, a spring-pressed plunger in front of said plug, a ball valve in front of said plunger and in advance of said seat, a front plug provided with a perforation, and a finger-actuated plunger working through said front plug and adapted to hold the ball against said seat, said valve chamber having an outlet port in front of said seat.

3. In a spraying device, a nozzle provided with an air passage, a container-cap provided with an air passage communicating with said first-mentioned passage, a liquid tube extending freely through said second-mentioned air passage and communicating with a liquid passage with which the nozzle is provided; and a handle equipped with a valve chamber and with a valve seat and with an outlet port, said handle having an air passage connecting the air passage of the nozzle with said valve chamber back of said seat and having an air passage through which compressed air is admitted to the valve chamber, and a spring-opened, finger-closed valve associated with said valve seat.

4. In a device of the character set forth, a liquid container equipped with a cap having a ring from which the cap depends and having an air passage extending through the cap to the interior of said ring; a nozzle comprising sections between which said ring is clamped, one of said sections having an annular air passage whose outer wall is formed by said ring, said nozzle having a liquid pas-

sage extending forwardly to the tip; a liquid tube connected with said nozzle and communicating with said liquid passage, said tube extending freely through the air passage of the container-cap; and means for supplying compressed air to the nozzle, said means being provided with means for discharging of air from the container through the rear portion of said nozzle at the end of the operation of the device.

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