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SPRAY GUNS FOR SPRAYING TWO OR MORE MATERIALS

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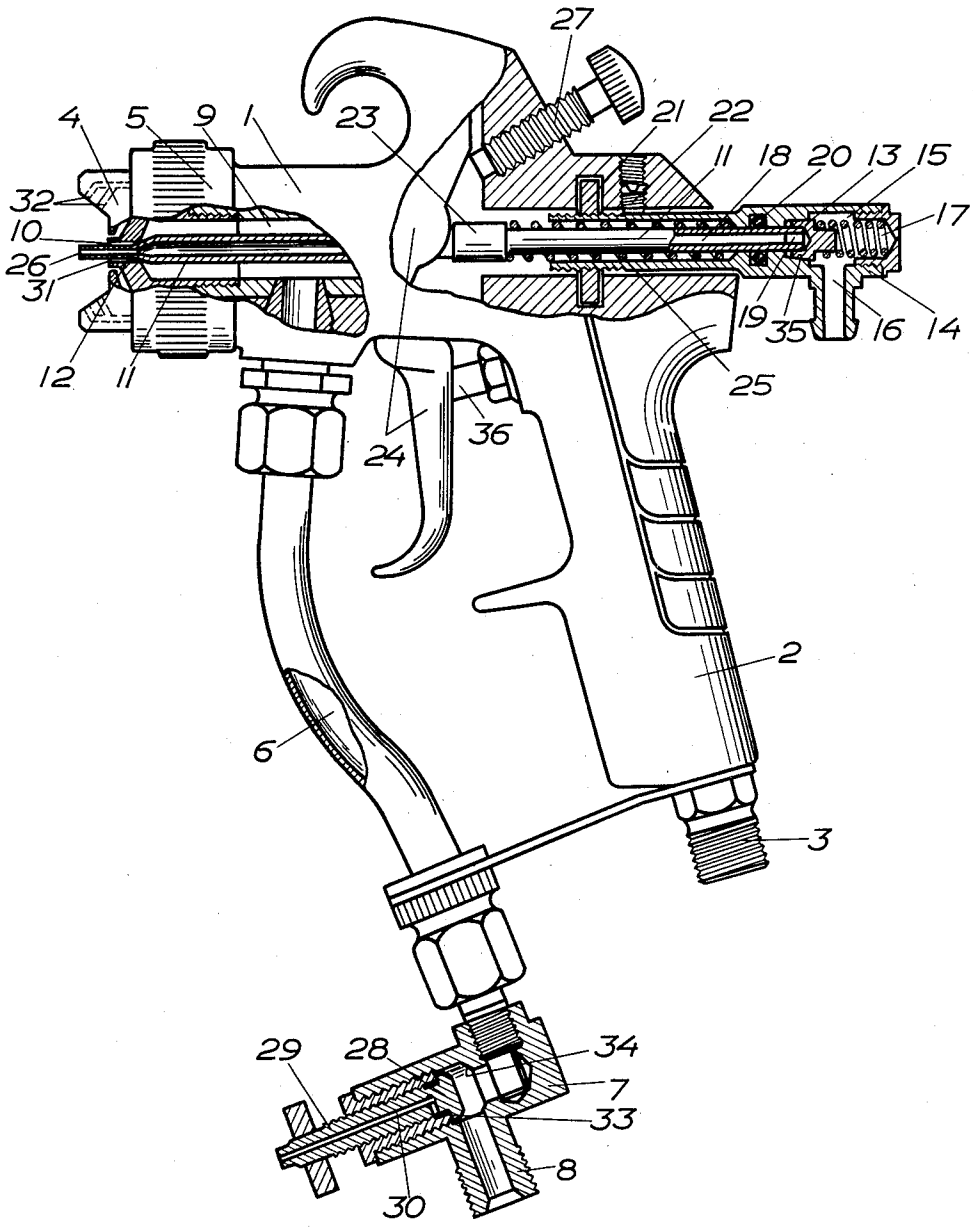

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SPRAY GUNS FOR SPRAYING TWO OR MORE MATERIALS

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3 Claims. (Cl. 299—140)

This invention relates to spray guns for spraying two or more materials such as components of a coating material, for instance paint or lacquer and a hardening agent for such paint or lacquer, which should not intermingle before they are discharged from the spray gun. One object of the invention is to provide a spray gun for this purpose in which separate passages are arranged for the different materials in a simple manner so that the materials do not intermingle within the spray gun. A further object of the invention is to provide a spray gun in which it is easy to check the quantities of the materials discharged per time unit. A still further object of the invention is to provide a spray gun of this type which is cheap in manufacture and may be kept tight in a simple manner.

One embodiment of a spray gun according to the invention is illustrated in the accompanying drawing which illustrates partially in side elevation and partially in section a spray gun for spraying resinous lacquer or varnish and a hardening agent with the aid of compressed air.

The illustrated spray gun is designed generally in the same way as conventional spray guns for spray coating of materials, such as paint, lacquer, bituminous products, or the like, and consists of a gun body 1 forming a handle 2 through which compressed air is supplied through a connection 3 for a compressed air hose. The spray gun has a spray head 4 in its forward end secured by means of a clamping ring 5 and provided with passages for compressed air and forming orifices 31, 32 for discharging air jets serving to atomize, mix and transport the spray material and to flatten or shape the spray jet in other suitable manner as is common practice in paint spray guns. A supply pipe 6 leads to the spray gun body 1 from a valve device 7 which is provided with a connection 8 for a hose (not illustrated) leading from a spray material source. The supply pipe 6 leads to a space 9 in the spray gun body 1 which ends in the spray head in an orifice 10 controlled by a hollow needle valve 11. Said valve extends through the orifice 10 and has a tapering portion 12 forming a shut-off valve for the spray material supplied through the pipe 6, such as for instance a resinous lacquer or varnish. The needle valve 11 extends through on the gun body 1 and at its rear end carries a tapering valve member 13 cooperating with a seat 35 in a connection 14 forming a space 15 which through an opening 16 and a hose (not illustrated) is connected to a source of a second spray material such as a hardening agent. A spring 17 tends to move the valve member 13 towards its seat 35. From the space 15 the hardening agent may flow into a passage 18 in the needle valve 11 through openings 19. A packing 20 in the connection 14 prevents the hardening agent from leaking into the gun body 1. The connection 14 is adjustable longitudinally of the needle valve 11 by means of a nut 21 mounted in the gun body and arranged in the same way as described in Swedish Patent 133,238 or the corresponding U. S. Patent 2,557,606. By means of a screw 22 the connection 14 may be locked in the gun body. The needle valve 11 has a shoulder 23 with which a trigger 24 cooperates in such

a manner that the trigger when pressed against the handle 2 of the spray gun displaces the needle valve 11 rearwardly in the gun body against the action of a spring 25 thereby opening the orifice 10 for discharging hardenable lacquer or other material and, furthermore, causing the valve 13 to move from its seat so that the hardening agent is supplied through the duct 18 and discharged through an opening 26. The trigger simultaneously operates a conventional air valve spindle 36 so that compressed air is supplied to the spray head in conventional manner. The opening 26 in the needle valve 11 is located ahead of the orifice 10 in the spraying direction so that the hardenable material has left the spray head 4 before it is mixed with the hardening agent discharged through the opening 26.

A screw 27 is provided in the gun body 1 in order to limit the movement of the trigger 24 and consequently limits the amount of hardenable lacquer and hardening agent discharged by the spray gun. The valve device 7 is provided with a valve member 28 having a spindle 29 provided with a passage 30 longitudinally therethrough and arranged in such a manner that when the spindle 29 is screwed into the valve device 7 the valve member 28 is lifted from a seat 33 and moved towards a seat 34 causing the hardenable varnish to flow out through the valve device 7 through the passage 30. By screwing the spindle in so far that the valve member closes the passage to the pipe 6 to the spray gun it is easy in a simple manner to check the proportions of hardenable lacquer or varnish and hardening agent supplied through the spray gun before spraying is started. The hardenable lacquer discharged through the passage 30 and the hardening agent discharged through the needle valve 11 may be collected in suitable measuring containers so that during such a check they each may be separately measured. In this way it is extremely easy to check the proportions of material supplied to the spray gun. Said materials may afterwards be recovered for use since they are not interminged or destroyed in any way through the measuring operation and, consequently, very little material is wasted.

The spray gun above described and illustrated in the drawing should be considered only as an example and may be modified in several different ways within the scope of the claims.

What we claim is:

1. A spray gun for simultaneous spraying of two materials such as paint or lacquer and a hardening agent for such paint or lacquer, a spray head in said spray gun, said spray head having an annular orifice for a first spray material, a hollow valve spindle slidably mounted in said gun and projecting through said orifice to provide a first control valve for controlling the discharge of said first spray material through said annular orifice and providing a discharge passage for a second spray material disposed coaxially with the annular orifice, a first valve seat in said gun cooperating with said valve spindle to open and close said orifice, a trigger in the spray gun connected to said spindle for moving said spindle axially from said first valve seat to open said annular orifice, a second valve seat in the spray gun, a valve member on said spindle cooperating with said second valve seat to provide a second control valve for controlling the admission of said second spray material to said discharge passage in the hollow valve spindle upon axial movement of the valve spindle by the trigger, and means on said gun for adjusting said second valve seat in an axial direction with respect to said valve member on said hollow valve spindle.

2. A spray gun according to claim 1 in which the second valve seat is formed on a member displaceable in the direction of movement of the spindle but locked against rotation, adjusting means accessible from the outside of the gun and engaging said member for moving the mem-

ber and for holding the member in positions of adjustment and rotatable in the gun but locked against displacement in the direction of movement of the valve spindle, and locking means for locking said member in adjusted position.

3. A spray gun according to claim 1 in which said second valve member is separate from the valve spindle and in which a spring is provided for keeping said second valve pressed in the direction towards said second seat.

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