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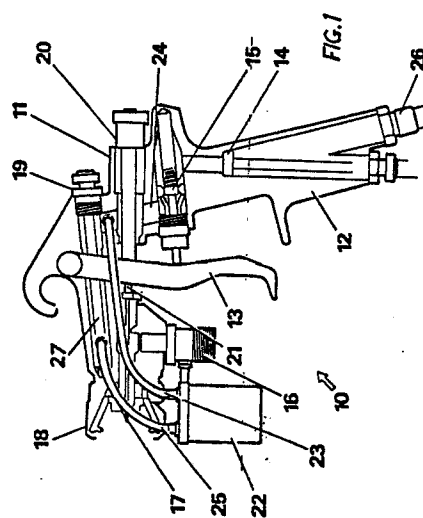
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⑤④ A spray gun.

⑤⑦ A spray gun having a primary nozzle through which a paint is delivered, and an air cap set through which a tinting agent or catalyst is delivered so that the catalyst and/or tinting agent are mixed with the paint prior to application to a surface to be coated.



Description

A SPRAY GUN

The present invention relates to apparatus to coat surfaces and more particularly but not exclusively to spray guns.

Conventional spray coating apparatus employ a spray head to apply a coating to an object. Once coated, the object must be allowed to stand a predetermined time prior to being placed in an oven. Thereafter the object must be allowed to cool and dry. This conventional procedure was improved by employing a catalyst to cure the coating on the object. It also eliminated the use of an oven. However, this modified process was still reasonably time consuming and required considerable capital outlay, as well as requiring the use of a catalyst.

Accordingly, known systems have been expensive to run, time consuming and have required considerable capital outlay.

It is the object of the present invention to overcome or substantially ameliorate the above disadvantages.

There is disclosed herein a spray coating apparatus including a first nozzle to which a flowable coating substance is delivered under pressure so as to be sprayed therefrom, a second nozzle located adjacent said first nozzle to which a flowable additive is delivered under pressure so as to be sprayed therefrom, and wherein said nozzles are positioned relative to each other so that said substance and additive sprayed from the nozzles are mixed after leaving said apparatus and before being deposited on an object to be coated.

A preferred form of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a schematic part sectioned side elevation of a spray gun; and

Figure 2 is a schematic perspective view of the gun of Figure 1 connected to a remote reservoir.

It should be appreciated that the present invention will be described with reference to a hand-held spray gun, however, the present invention is also applicable to other spray heads.

In the accompanying drawings, there is schematically depicted a hand-held spray gun 10 consisting of a body 11 providing a handle 12 and a trigger 13. Air under pressure is delivered to the air galleries within the body 11 by means of a hose coupling 26. A pressure adjustment valve 14 is provided to adjust the pressure delivered to the internal galleries of the gun 11. The trigger 13 operates a valve 15 which enables air under pressure to be delivered to the fluid nozzle 17 and air cap set 18, in a conventional manner. A spreader adjustment valve set 19 is also provided together with adjustment shaft 21. A fluid adjustment assembly 20 with its adjustment shaft 21 are also provided in a conventional manner.

Mounted on the gun body 11 is a reservoir 22 which receives a catalyst or tinting agent to be delivered to the air passing through the galleries extending to the fluid nozzle 7 and/or the nozzles of

the air cap set 18. The reservoir 22 is pressurised by the pressure line 23 extending to a pressurised duct 24 downstream of the valve 15. The catalyst or testing agent is delivered to the air duct 27 via line 25. The duct 27 extends to the nozzle of the air cap set 18. It should be appreciated that due to flow resistance within the gallery there is oppressive draw between the position at which the line 23 communicates with the galleries, and the position at which the line 25 communicates with the duct 27. Accordingly, if a paint or other coating substance is delivered to the fuel joint 16, a setting catalyst or tint may be mixed with the substance sprayed to facilitate setting and/or tinting.

It should be appreciated that in the above described preferred embodiment, a discrete reservoir 22 is employed. However, the reservoir 22 could be replaced with a reservoir 29 (Figure 2) remote from the gun 10 and not mounted thereon. Extending to the reservoir 29 is a pressure line 28, which delivers air under pressure to the reservoir 29. The contents of the reservoir 29 are then delivered to an air operated, or electrically operated valve 30. The valve 30 is controlled by air under pressure being delivered to the line 23. Once the trigger 13 has been actuated, air under pressure is delivered to the valve 30, which results in the valve 30 opening to allow the catalyst or tinting agent to be delivered to the duct 27 via line 25. The valve 30 is normally closed until actuated.

If so desired a regulating valve could be provided in the line 23 in order to regulate the pressure delivered to the reservoir. The valve could be of a pressure-regulating form if so required. As an alternative a flow regulating valve could be located in the line 25.

It will of course be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention.

Claims

1. A spray coating apparatus 10 including a first nozzle 17 to which a flowable coating substance is delivered under pressure so as to be sprayed therefrom, a second nozzle 18 located adjacent said first nozzle 17 to which a flowable additive is delivered under pressure so as to be sprayed therefrom, and wherein the nozzles 17 and 18 are positioned relative to each other so that said substance and additive sprayed from the nozzles are mixed after leaving said apparatus 10 and before being deposited on an object to be coated.

2. The apparatus 10 of Claim 1 wherein said apparatus 10 further includes first duct means 16 through which said substance passes to be delivered to said first nozzle 17, second duct

means 24 to deliver a gas under pressure to said first nozzle 17 so as to spray said substance therefrom, third duct means 25 through which said additive passes to be delivered to said second nozzle 18, and fourth duct means 27 to deliver gas under pressure to said second nozzle 18 so that said additive is sprayed therefrom.

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3. The apparatus 10 of Claim 2 wherein said apparatus is a spray gun 10 including a head cap set 18 incorporating said second nozzle 18, and said apparatus 10 includes galleries to which a gas under pressure is delivered, an operator manipulated trigger 13 controlling the delivery of gas under pressure to said nozzles 17 and 18 via said galleries, and a valve 15 actuated by said trigger 13.

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4. The apparatus 10 of Claim 3 further including a reservoir 22 to receive said additive, a pressure line 23 to deliver gas under pressure to said reservoir 22 so that said additive is forced therefrom to enter said third duct means 25.

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5. The apparatus of Claim 4 wherein said pressure line 23 extends from said galleries downstream of said valve 15.

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6. The apparatus 10 of Claim 3 further including a reservoir 29 to receive said additive and to which said third duct means 25 is attached so as to receive the additive from said reservoir 29, valve means 30 to control the delivery of additive from said reservoir 29 to said third duct means 25, a pressure line 23 extending from said galleries at a position downstream of said valve 15 to said valve means 30 so as to control said valve means 30.

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7. A spray gun 10 substantially as hereinbefore described with reference to the accompanying drawings.

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