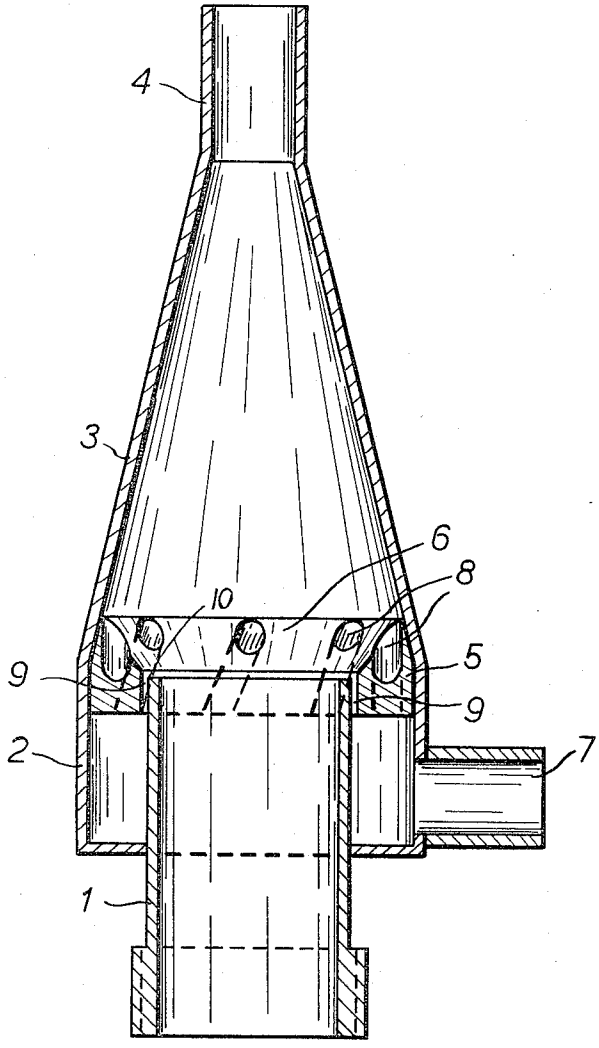
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SPRAY NOZZLE

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SPRAY NOZZLE

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1 Claim. (Cl. 239—400)

This invention relates to a spray nozzle in which the substance to be spread in the nozzle is subjected to the effects of compressed air.

The object of the invention is to furnish a spray nozzle which, thanks to the increased speed of the substance in the eject opening and the rotation of the substance, results in a new and unexpected spray effect.

This invention relates to the already known feature that the nozzle has a conically tapering cross section towards the eject opening, and that the compressed air is introduced into the widest part of the nozzle through openings which surround the input orifice through which the substance is injected into the nozzle. The new feature of this invention is that the axes of these openings form angles with the axes of the nozzle, whilst at the same time an improvement in the spray effect can be achieved by there being, between the substance input orifice and the abovementioned openings, a ring-shaped slot, in the manner already known, to which compressed air is also supplied.

In this manner it has proved that the substance, on account of its increased speed in the nozzle opening and rotation, can, even at a range of several metres, be concentrated with great accuracy to strike a small area of the object to which the substance is to be applied.

A practical example of the invention will be explained below with reference to the drawing which shows an axial section through a spray nozzle according to the invention.

A substance input tube **1** is surrounded by a mantle **2** which forms an integral part of a conically tapering member **3**, which ends in an eject opening **4**. Inside the mantle **2** between the input tube **1** and the mantle wall **2** and a part of the conical wall **3**, there is a body **5** having a conical surface **6** which, with its smallest

cross section, extends from the inner end of the tube **1** to the conical part **3**. The part **5** serves to separate the rear end of the mantle **2** from the conical part of the nozzle, in that this part of the mantle is fitted with a branch tube **7** for the compressed air input. From the space in the mantle, inclined channels **6** lead through part **5** out into the conical part **3** of the spray nozzle, forming a ring of inclined openings around the substance input tube **1**. Further, between the inner end of tube **1** and part **5** there is a narrow ring-shaped slot **9** through which compressed air flows. This latter slot serves to form a thin layer of air between the substance and the inner wall of the spray nozzle, whilst the openings **8** serve to set the substance mass in rotation. In this connection, it is to be noted that the outer surface of tube **1** terminates forwardly in a sharp edge **10** adjacent the forward end of slot **9**.

I claim:

A nozzle for spraying material under the influence of compressed air, the nozzle having an outlet opening and a tapering cross section that converges toward said outlet opening, an annular ring within a relatively wide portion of the nozzle, the ring having a plurality of openings therethrough whose axes are inclined at a substantial angle to the axis of the nozzle, a material inlet conduit disposed within the ring and spaced from the ring by an annular thin-walled cylindrical slot, the inlet conduit having an internal diameter a number of times greater than the width of the slot, the inlet conduit having an outer surface that defines the radially inner side of the slot and that terminates forwardly in a sharp edge adjacent the forward end of the slot, and means for introducing compressed air into the nozzle behind said ring thereby to force compressed air through said plurality of openings and through said slot toward said outlet opening.

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