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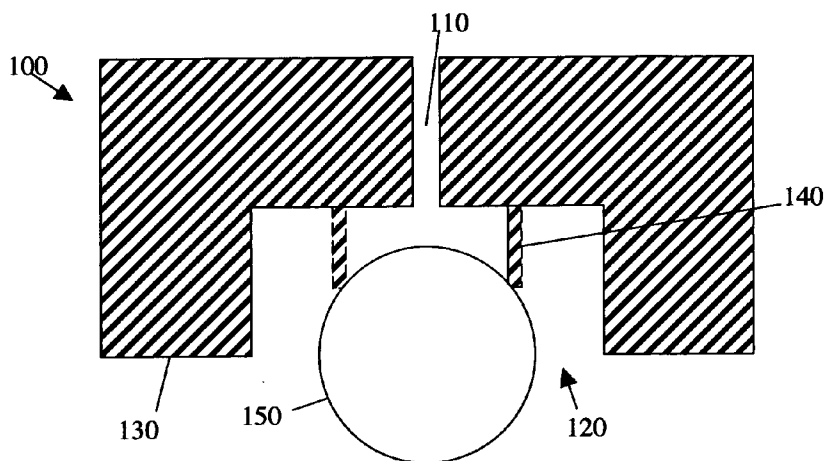


FIG. 1

(57) Abstract: The present invention provides a nozzle for picking up micro solder balls with a solder pick and place apparatus having a vacuum suction arm, the nozzle comprises a nozzle body configured for fitting to a vacuum port of the vacuum suction arm; and an airway defines through the nozzle body, the airway having a diameter smaller than one micro solder ball. The nozzle may further provide with a catchment cup, a pitch control platform and/or a cylindrical wall.

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