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(54) Title: LOW-VOLUME SHOWERHEAD FOR SEMICONDUCTOR PROCESSING OPERATIONS

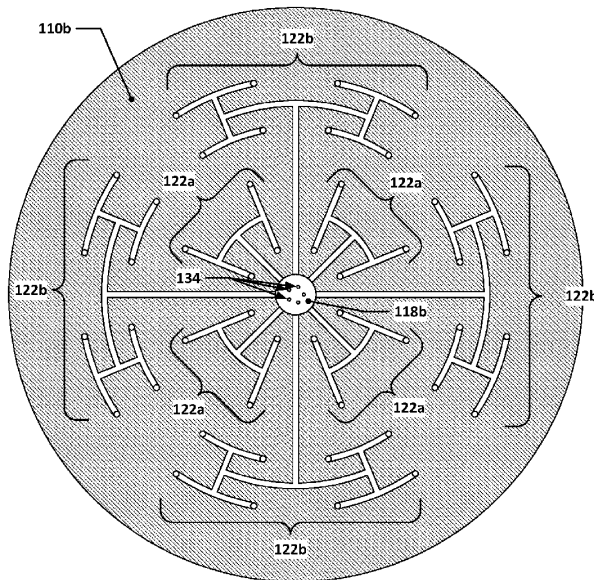


FIG. 3

(57) Abstract: Showerheads for use with semiconductor processing systems are disclosed that have very low internal plenum volumes, thereby providing rapid transient response and reduced gas flow cycle times. Such showerheads also exhibit good uniformity in gas delivery, making them extremely useful in scenarios where delivery of alternating gases is needed through a single showerhead.

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