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(54) Title: HYBRID CERAMIC SHOWERHEAD

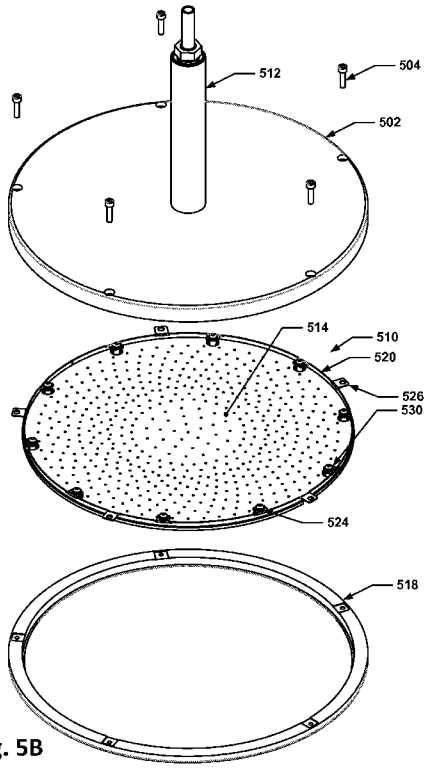


Fig. 5B

(57) Abstract: Various implementations of hybrid ceramic faceplates for substrate processing showerheads are provided. The hybrid ceramic showerhead faceplates may include an electrode embedded within the ceramic material of the faceplate, as well as a pattern of through-holes. The electrode may be fully encapsulated within the ceramic material with respect to the through-holes. In some implementations, a heater element may also be embedded within the hybrid ceramic showerhead faceplate. A DC voltage source may be electrically connected with the hybrid ceramic showerhead faceplate during use. The hybrid ceramic faceplates may be easily removable from the substrate processing showerheads for easy cleaning and faceplate replacement.

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