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(54) **Title**: SOLAR WAFER ELECTROSTATIC CHUCK

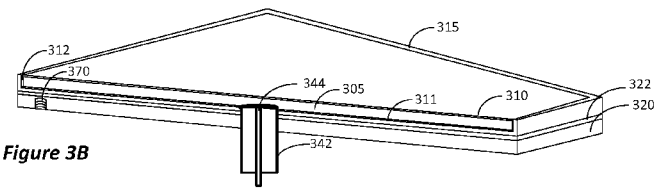


Figure 3B

(57) **Abstract**: An electrostatic chuck is disclosed, which is especially suitable for fabrication of substrates at high throughput. The disclosed chuck may be used for fabricating large substrates or several smaller substrates simultaneously. For example, disclosed embodiments can be used for fabrication of multiple solar cells simultaneously, providing high throughput. An electrostatic chuck body is constructed using aluminum body having sufficient thermal mass to control temperature rise of the chuck, and anodizing the top surface of the body. A ceramic frame is provided around the chuck's body to protect it from plasma corrosion. If needed, conductive contacts are provided to apply voltage bias to the wafer. The contacts are exposed through the anodization.