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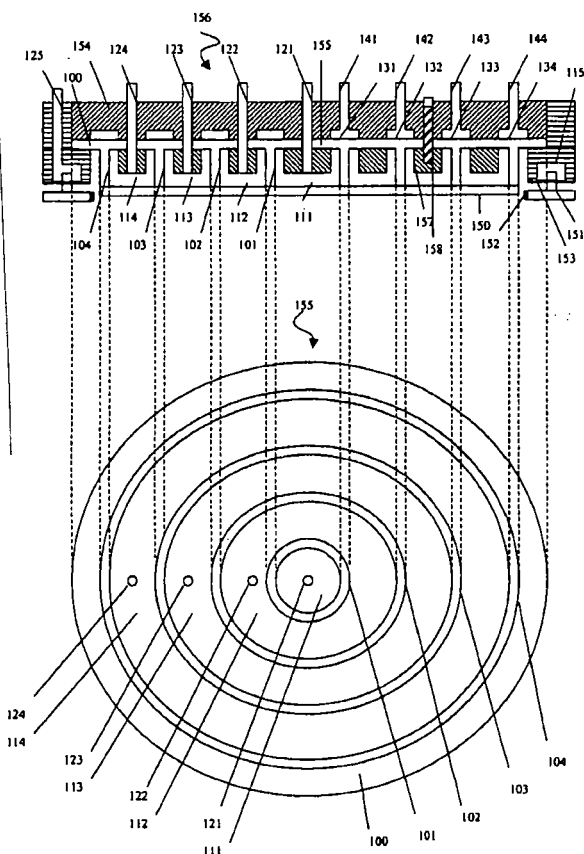
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(54) Title: A WORKPIECE CARRIER WITH ADJUSTABLE PRESSURE ZONES AND BARRIERS

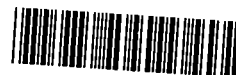


(57) Abstract: An apparatus and method are disclosed for planarizing a wafer in a carrier (156) with adjustable pressure zones (111-114) and adjustable barriers (101-104) between zones. The carrier has an independently controlled central zone (111) and concentric surrounding zones (112-114) for distributing the pressure on the backside of a wafer while the wafer is being pressed against an abrasive surface in a chemical-mechanical polishing tool. The pressure zones (111-114) may be created by mounting an elastic web diaphragm (100) to a carrier housing (154) that has a plurality of recesses (111-114). A corresponding plurality of elastic ring shaped ribs may extend from the web diaphragm opposite the recesses (131-134). The plurality of ring shaped ribs (101-104) thereby defines a central zone surrounded by one or more concentric surrounding zones (112, 114). The zones (111-114) and barriers (101-104) may be individually pressurized by utilizing corresponding fluid communication paths (141-144) during the planarization process.

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