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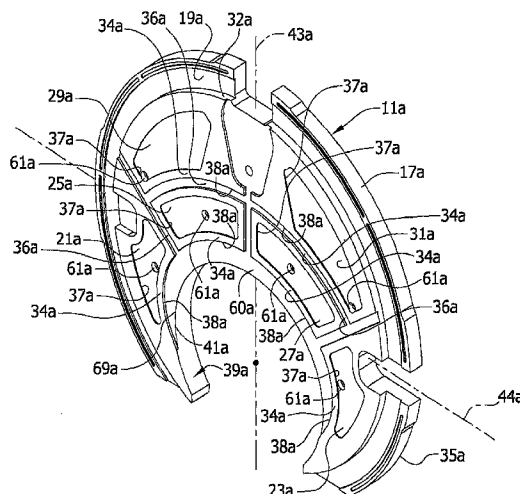
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(54) Title: DOUBLE SIDE WAFER GRINDER AND METHODS FOR ASSESSING WORKPIECE NANOTOPOLOGY



(57) Abstract: A double side grinder comprises a pair of grinding wheels and a pair of hydrostatic pads operable to hold a flat workpiece (e.g., semiconductor wafer) so that part of the workpiece is positioned between the grinding wheels and part of the workpiece is positioned between the hydrostatic pads. At least one sensor measures a distance between the workpiece and the respective sensor for assessing nanotopology of the workpiece. In a method of the invention, a distance to the workpiece is measured during grinding and used to assess nanotopology of the workpiece. For instance, a finite element structural analysis of the workpiece can be performed using sensor data to derive at least one boundary condition. The nanotopology assessment can begin before the workpiece is removed from the grinder, providing rapid nanotopology feedback. A spatial filter can be used to predict the likely nanotopology of the workpiece after further processing.

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