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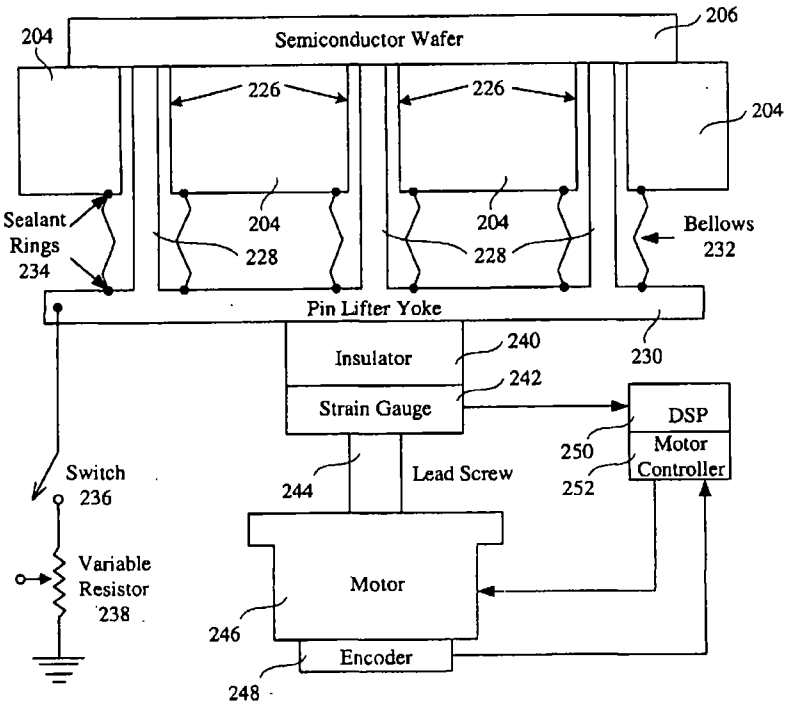
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(54) Title: SEMICONDUCTOR WAFER LIFTING DEVICE AND METHODS FOR IMPLEMENTING THE SAME



(57) Abstract: An apparatus and a method for lifting a wafer off of an electrostatic chuck after wafer processing operations are provided. In a specific example, a wafer lifting mechanism for controlling the lifting of the wafer off of an electrostatic chuck at a completion of processing is defined. The wafer lifting mechanism includes a pin lifter yoke that is oriented below an electrostatic chuck. The pin lifter yoke has a set of pins connected thereto, and the set of pins are configured to traverse through the electrostatic chuck and contact a bottom surface of the wafer. A link is also provided and connected to the pin lifter yoke. The link is moveable so as to cause the pin lifter yoke and the set of pins to move within the electrostatic chuck and contact the bottom surface of the wafer, and once in contact with the bottom surface of the wafer, the set of pins are capable of lifting the wafer off of the electrostatic chuck. Further included is a motor for moving the link and a force feedback system for limiting an application of force by the set of pins to the bottom surface of the wafer during the lifting. The application of force, in one example, is discontinued when a strain level grows to a level that can potentially cause damage to the wafer, such as in those cases where the wafer is still strongly adhered to the chuck with electrostatic forces.

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ACTION

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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