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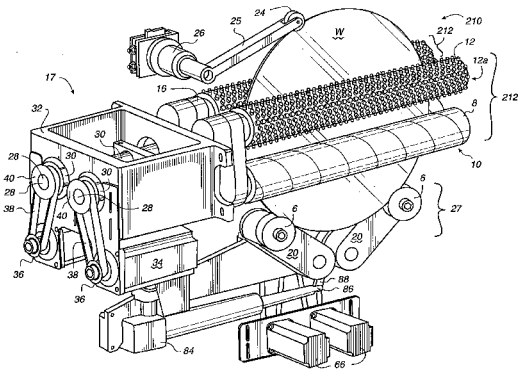
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(54) Title: WAFER PREPARATION APPARATUS



(57) Abstract: An apparatus for preparing a wafer includes a wafer preparation drive assembly (17), a variable height edge drive assembly (which includes 27), and a self-aligning mandrel assembly. In one embodiment, the apparatus includes a pair of drive rollers (6) disposed so as to support a wafer (W) in a substantially vertical orientation. Each of the drive rollers (6) is coupled to a drive belt for rotating the drive rollers. A pair of wafer preparation assemblies (212), each having first and second wafer preparation members (10, 12), is movably disposed in an opposing relationship. These assemblies (212) are movable into first and second positions in which each of the first and second wafer preparation members (10, 12) is positioned to perform first and second wafer preparation operations, respectively. In another embodiment, the apparatus includes first and second wafer drive rollers (6) rotatably disposed on first and second roller arms (20), respectively. Each of the first and second roller arms (20) transmits rotational power to the wafer drive roller (6) disposed thereon, and each of the first and second roller arms is pivotable between first and second positions to adjust a height of the wafer drive roller disposed thereon. A self-aligning mandrel assembly includes a cylindrical inner core and a fulcrum disposed on an outer surface thereof. A mandrel shell, which surrounds the cylindrical inner core, has a wafer preparation material affixed to an outer surface thereof, and is pivotably supported by the fulcrum such that the mandrel shell aligns with a surface of a substrate when the wafer preparation material contacts the surface of the susbtrate.

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