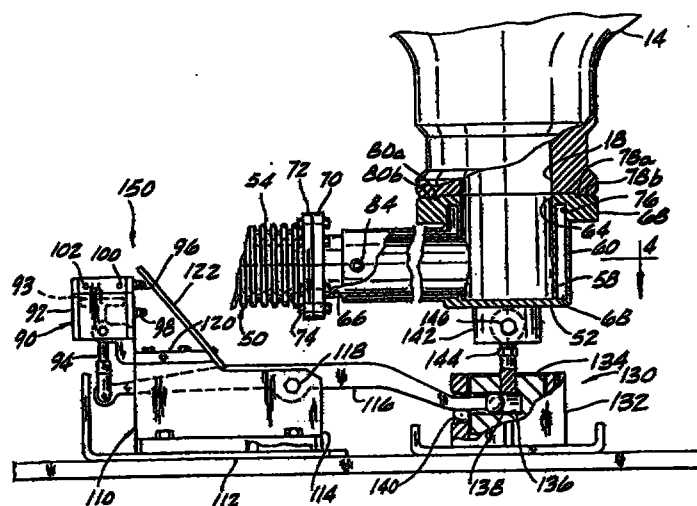




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C30B 25/14, C23C 16/44	A1	(11) International Publication Number: WO 99/47732 (43) International Publication Date: 23 September 1999 (23.09.99)
(21) International Application Number: PCT/US99/04216 (22) International Filing Date: 26 February 1999 (26.02.99) (30) Priority Data: 09/040,123 17 March 1998 (17.03.98) US (71) Applicant: MEMC ELECTRONICS MATERIALS, INC. [US/US]; 501 Pearl Drive, P.O. Box 8, St. Peters, MO 63376 (US). (72) Inventors: GUARNIERO, Umberto; Via S. D'Acquisto, 20, I-28070 Novara (IT). MAGON, Franco; Via Gironde, 10, I-28069 Trecate (IT). BONANNO, Enzo; Via Farlocchetti, 39, I-28070 Novara (IT). (74) Agents: JAMES, Kurt, F. et al.; Senniger, Powers, Leavitt & Roedel, One Metropolitan Square, 16th floor, St. Louis, MO 63102 (US).		(81) Designated States: CN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>

(54) Title: APPARATUS FOR MOVING EXHAUST TUBE OF BARREL REACTOR



(57) Abstract

An epitaxial barrel reactor for depositing a material on a semiconductor wafer by a chemical vapor deposition process using a reactant gas. The barrel reactor includes a receptacle defining a reaction chamber sized to receive at least one semiconductor wafer. The receptacle has an inlet port for introducing reacting gas to the reaction chamber and an exhaust port for removing reactant gas from the reaction chamber. The reactor also includes an exhaust tube sealingly engageable with the exhaust port of the receptacle for transporting reactant gas to facility piping to remove the gas from the reaction chamber after the chemical vapor deposition process. In addition, the reactor includes an actuator spaced from the receptacle for moving the exhaust tube between an operating position in which the tube sealingly engages the exhaust port of the receptacle and a maintenance position in which the tube is spaced from the exhaust port to provide access to the receptacle. Further, the reactor includes a mechanism operatively connected between the exhaust tube and the actuator for transmitting motion from the actuator to the exhaust tube to move the tube between the operating position and the maintenance position.