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(71) Applicant *(for all designated States except US)*: **APPLIED MATERIALS, INC.** [US/US]; 3050 Bowers Avenue, Santa Clara, CA 95054 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **MILLER, Keith, A.** [US/US]; 246 Twinlake Drive, Sunnyvale, CA 94089 (US). **LUBBEN, Daniel, C.** [US/US]; 6614 Mount Holly Drive, San Jose, CA 95120 (US).

(74) Agent: **GUENZER, Charles, S.**; Law Offices Of Charles Guenzer, 2211 Park Boulevard, P.o. Box 60729, Palo Alto, CA 94306 (US).

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(54) Title: PREDICTION AND COMPENSATION OF EROSION IN A MAGNETRON SPUTTERING TARGET

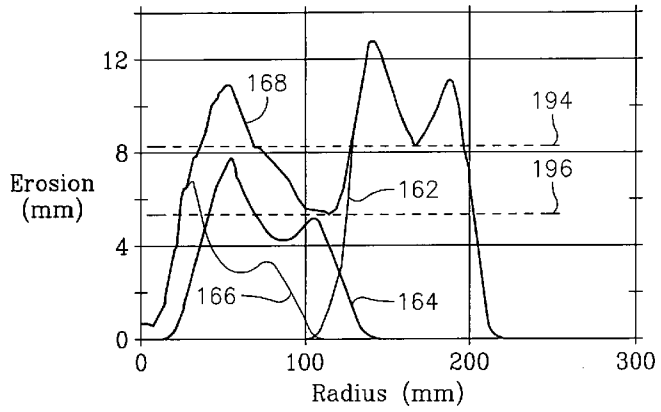


FIG. 6

(57) Abstract: When a magnetron (72) is scanned about the back of a target (38) in a selected complex path (150) having radial components, the target erosion profile has a form depending upon the selection of paths. A radial erosion rate profile (160) for a given magnetron is measured. Periodically during scanning, an erosion profile (168) is calculated from the measured erosion rate profile (160) and profiles (162, 164, 166) derived from it, the time the magnetron spends at different radii, and the target power. The calculated erosion profile may be used to indicate when erosion has become excessive at any location prompting target replacement or to adjust the height of the magnetron above the target for repeated scans, hi another aspect of the invention, the magnetron height is dynamically adjusted (206) during a scan to compensate for erosion. The compensation may be based on the calculated erosion profile or on feedback control of the present value of the target voltage (124) for a constant-power target supply (110).

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