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(54) **METHODS, APPARATUS AND SLURRIES FOR CHEMICAL MECHANICAL PLANARIZATION**

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Related U.S. Application Data

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(51) **Int. Cl.**[7] **B24B 1/00**

(52) **U.S. Cl.** **457/60**; 457/41; 457/37; 457/285; 106/3; 216/88; 57/307; 57/309

(58) **Field of Search** 451/41, 60, 57, 451/37, 285; 216/88, 89; 106/3, 491, 450, 499; 438/692, 693; 51/307, 309; 134/2

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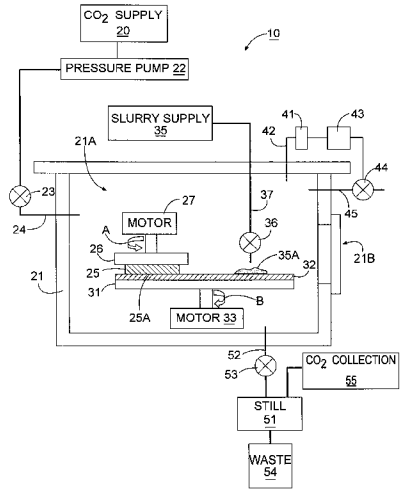
(57) **ABSTRACT**

Methods and apparatus for chemical mechanical planarization of an article such as a semiconductor wafer use polishing slurries including a carbon dioxide solvent or a carbon dioxide-philic composition. A carbon dioxide cleaning solvent step and apparatus may also be employed.

64 Claims, 3 Drawing Sheets