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Tateyama et al.

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[54] **SYSTEM AND METHOD FOR APPLYING A LIQUID**

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134/42; 134/169 R; 134/171; 134/175

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134/23, 24, 34, 168 R, 169 R, 171

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,579,597 4/1986 Sasa et al. 134/24
5,002,008 3/1991 Ushijima et al. 118/302
5,009,715 4/1991 Wilson 134/34

5,013,530 5/1991 McGregor 134/22.18

FOREIGN PATENT DOCUMENTS

57-52132 3/1982 Japan .
57-192955 11/1982 Japan .

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[57] **ABSTRACT**

A liquid applying system according to the present invention comprises a liquid supply source and a nozzle communicating with the liquid supply source. The nozzle comprises a liquid storing portion for storing a liquid supplied from the liquid supply source, a number of small passages communicating with the liquid storing portion, each of the small passages having a transverse section which is smaller than that of the liquid storing portion, and a slit-like passage communicating with the small passages, in which liquids from the small passages flow together and from which the liquids are continuously discharged like a curtain toward a semiconductor wafer.

14 Claims, 6 Drawing Sheets