



US005127362A

# United States Patent [19]

[11] Patent Number: **5,127,362**

Iwatsu et al.

[45] Date of Patent: **Jul. 7, 1992**

## [54] LIQUID COATING DEVICE

[75] Inventors: Haruo Iwatsu, Shichijo; Yasuhiro Sakamoto; Junro Iwakiri, voth of Kumamoto, all of Japan

[73] Assignees: Tokyo Electron Limited, Tokyo; Tokyo Electron Kyushu Limited, Kumamoto, both of Japan

[21] Appl. No.: 525,681

[22] Filed: May 21, 1990

### [30] Foreign Application Priority Data

May 22, 1989 [JP] Japan ..... 1-128194  
Jun. 5, 1989 [JP] Japan ..... 1-142395

[51] Int. Cl.<sup>5</sup> ..... B05B 1/24

[52] U.S. Cl. .... 118/667; 118/666;  
118/712; 118/52; 118/56; 427/240

[58] Field of Search ..... 118/52, 56, 58, 64,  
118/320, 666, 667, 688, 712; 427/240, 9, 10

### [56] References Cited

#### U.S. PATENT DOCUMENTS

2,699,080 10/1987 Finney ..... 118/666  
4,738,219 4/1988 Fujisawa ..... 118/666  
4,932,353 6/1990 Kawata et al. .... 118/52

## FOREIGN PATENT DOCUMENTS

61-90331 5/1986 Japan ..... 118/52  
61-137322 6/1986 Japan ..... 118/712  
62-214621 9/1987 Japan ..... 118/52  
63-70424 3/1988 Japan ..... 118/666  
63-119531 5/1988 Japan ..... 118/52  
1-272118 10/1989 Japan ..... 118/667

Primary Examiner—Michael G. Wityshyn

Assistant Examiner—Todd J. Burns

Attorney, Agent, or Firm—Oblon, Spivak, McClelland, Maier & Neustadt

## [57] ABSTRACT

A liquid coating device for coating a solution on a substrate to form a film includes a chuck for rotatably supporting the substrate, a nozzle for supplying the solution on the substrate, a heater provided in the nozzle for changing a temperature of the solution, a sensor for measuring a temperature of an ambient atmosphere of the substrate, and a controller for controlling the heater according the measured temperature. Thus, a solution having a temperature corresponding to the temperature of the ambient atmosphere is supplied from the nozzle to the substrate.

8 Claims, 1 Drawing Sheet

