

US005234499A

United States Patent [19]

Sasaki et al.

[11] Patent Number:

5,234,499

[45] Date of Patent:

Aug. 10, 1993

[54]	SPIN COATING APPARATUS				
[75]	Inventors:	Tadashi Sasaki; Yoshio Okamoto; Koji Kizaki, all Kyoto, Japan			
[73]	Assignee:	Dainippon Screen Mgf. Co., Ltd., Kyoto, Japan			
[21]	Appl. No.:	719,203			
[22]	Filed:	Jun. 21, 1991			
[30] Foreign Application Priority Data					
		P] Japan 2-167321 P] Japan 2-179974			
427/240 [58] Field of Search					
[56] References Cited					
U.S. PATENT DOCUMENTS					
4 4	,201,149 5/1 ,519,846 5/1 ,735,220 4/1 ,889,069 12/1	985 Aigo			
FOREIGN PATENT DOCUMENTS					
	58-4588 1/1 58-19350 4/1 0111320 7/1	979 Japan 118/52 983 Japan . 983 Japan . 983 Japan . 118/52 . . 983 Japan . 118/52 . .			

0087069	5/1984	Japan	118/52
60-143871	7/1985	Japan	110,52
		Japan	134/902
0057721	3/1989	Japan	134/902
1-135565	5/1989	Japan .	
57-48980			

Primary Examiner—W. Gary Jones Assistant Examiner—Brenda Lamb

Attorney, Agent, or Firm—Lowe, Price, LeBlanc & Becker

[57] ABSTRACT

A spin coating apparatus for use in applying a coating solution in film form to an upper surface of a substrate. This apparatus includes a rotary table for spinning the substrate as supported thereon in horizontal posture, the rotary table having a size larger than an outline contour of the substrate, and an upper rotary plate disposed parallel to and slightly spaced from the upper surface of the substrate supported on the rotary table. The rotary table and upper rotary plate define a flat treating space therebetween, which treating space has peripheral openings for allowing superfluous part of the coating solution to scatter outwardly therefrom. A nozzle plate is disposed between the rotary table and the substrate supported thereon. The nozzle plate receives cleaning liquid supplied through a rotary shaft of the rotary table, and directs the liquid to the lower surface of the substrate.

11 Claims, 10 Drawing Sheets

