US005571560A

United States Patent [19]

Lin

[11] Patent Number: 5,571,560

[45] Date of Patent: Nov. 5, 1996

[54] **PROXIMITY-DISPENSING HIGH-THROUGHPUT LOW-CONSUMPTION RESIST COATING DEVICE**

[76] Inventor: **Burn J. Lin**, 4603 Bayshore Blvd., Tampa, Fla. 33611

[21] Appl. No.: **180,368**

[22] Filed: **Jan. 12, 1994**

[51] **Int. Cl.**[6] **B05D 3/12**; B05C 11/02

[52] **U.S. Cl.** **427/240**; 427/335; 427/377; 427/385.5; 427/422; 427/425; 118/52; 118/64; 118/305; 118/313; 118/314; 118/320

[58] **Field of Search** 427/240, 385.5, 427/377, 422, 425, 335; 118/52, 64, 305, 313, 314, 320

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,347,302	8/1982	Gotman	430/270
4,416,213	11/1983	Sakiya	118/302
5,013,586	5/1991	Cavazza	427/240
5,095,848	3/1992	Ikeno	118/53
5,254,367	10/1993	Matsomura et al.	427/240
5,366,757	11/1994	Lin	427/9
5,378,511	1/1995	Cardinali et al.	427/240

Primary Examiner—Janyce Bell
Attorney, Agent, or Firm—Langen & Langen, P.A.

[57] **ABSTRACT**

A minimal amount of waste in liquid resist material is achieved by dispensing through small openings at close proximity to the substrate. An airtight substrate chamber as well as airtight sealing of dispensing assembly and airtight sealing of the space that does not have to be opened for substrate loading and unloading, are used to facilitate a uniform and planarized coating after a high-speed spin off of excess resist.

12 Claims, 6 Drawing Sheets