

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H05K 3/12, B41F 15/08		A1	(11) International Publication Number: WO 98/37741
			(43) International Publication Date: 27 August 1998 (27.08.98)
(21) International Application Number: PCT/US98/03121		(74) Agent: SULLIVAN, Thomas, M.; Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111 (US).	
(22) International Filing Date: 18 February 1998 (18.02.98)			
(30) Priority Data: ① 08/802,934 ✓ 19 February 1997 (19.02.97) ✓ US ② 08/920,121 ✓ 26 August 1997 (26.08.97) ✓ US		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(71) Applicant: MPM CORPORATION [US/US]; 16 Forge Park, Franklin, MA 02038 (US).			
(72) Inventors: DOYLE, Dennis, G.; 49 Richard Avenue, Shrewsbury, MA 01545 (US); HALL, Steven, W.; 80 Webster Street, Douglas, MA 01516 (US); WEST, Brian, D.; 72 Pearl Street, Newton Corner, MA 02161 (US); MARSZALKOWSKI, Frank, J.; 131 Burnt Swamp Road, Cumberland, RI 02864 (US); CHADWICK, Loring, W., Jr.; 3 Andrews Drive, Lincoln, RI 02865 (US); AMARAL, Richard, F.; 1090 Sherman Farm Road, Harrisville, RI 02380 (US); SPATH, Michael, D.; 42 Oxford Drive, Franklin, MA 02038 (US); MOULD, Douglas, K.; 119 Glen Avenue, West Upton, MA 01568 (US); FREEMAN, Gary, T.; 236 Hale Street, Beverly, MA 01915 (US); ENT, Stephen, M.; 294 Southeast Main Street, Douglas, MA 01516 (US).		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
		2 PDS 1 appl ¹ (see 13/306) 13 INVS.	

(54) Title: DUAL TRACK STENCILING SYSTEM WITH SOLDER GATHERING HEAD ✓

(57) Abstract

A dual track stencil system (30) includes a first set of rails (22, 24) and a second set of rails (26, 28), each of the rails being independently controlled for allowing independent movement of circuit boards through the stencil system for processing. The stencil system includes a working area (37), at which the circuit boards are stenciled. A stencil, having two patterns, each aligned with a respective working area of each track is suspended above the dual track system. In one embodiment, a solder dispensing unit including a squeegee arm (35) is suspended above the stencil, parallel to and centered between the two tracks. During operation, a circuit board enters the working area, is raised to engage with the stencil, and the squeegee arm (35) traverses that portion of the stencil pattern currently engaging the board, thereby dispensing solder through the pattern and stenciling the board. The stencil system operates to process two boards on one track before advancing to the second track for processing another pair of boards. In another embodiment, the solder dispensing unit includes a squeegee arm (35) with a solder gathering head (32). During operation using the squeegee arm (35) with the solder gathering head (32), two circuit boards are fed to the working area, and both of the circuit boards are serially processed, with excess solder being removed from the board after the processing of each of the boards.

