# (19) World Intellectual Property Organization International Bureau





#### (43) International Publication Date 19 December 2002 (19.12.2002)

#### **PCT**

# (10) International Publication Number $WO\ 02/101791\ A3$

(51) International Patent Classification<sup>7</sup>:

B65G 1/04

(21) International Application Number: PCT/US02/19172

**(22) International Filing Date:** 3 June 2002 (03.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

09/873,779 4 June 2001 (04.06.2001) US

(71) Applicant: INTRABAY AUTOMATION, INC. [US/US]; 4 Harris Court, Monterey, CA 93940 (US).

(71) Applicant and

- (72) Inventor: WHALEN, Paul, S. [US/US]; 4 Harris Court, Monterey, CA 93940 (US).
- (74) Agent: O'REILLY, David; Suite 200, 1800 Bridgegate Street, Westlake Village, CA 91361 (US).

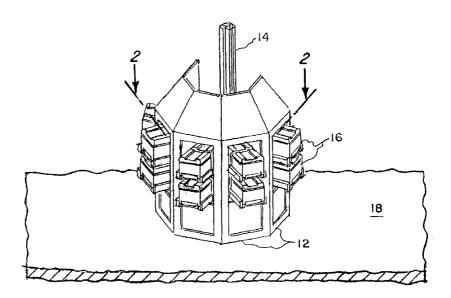
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### **Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,

[Continued on next page]

(54) Title: SEMICONDUCTOR WAFER STORAGE KIOSK



(57) Abstract: A semiconductor wafer cassette storage cabinet or stocker (10) having retrieval and transfer system constructed in the form of a kiosk encircling a pick-up and transfer apparatus. The structure is formed of a plurality of identical sections (12) having walls and a roofjoined together to form a nearly semi-circular enclosure aroundt he pick-up and transfer apparatus. Each section has multiple level input/output ports adjacent to each other with a shelf (26,28) for supporting a semiconductor wafer cassette (16). Shelves (26,28) at the input/output ports are constructed of rails (30,32) supporting drive rollers (36) and a photo-detector (40) to activate the drive rollers to fill an output port whenever a cassette has been retrieved and transferred.



## WO 02/101791 A3

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent

(GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

#### **Published:**

with international search report

## (88) Date of publication of the international search report: 31 July 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### INTERNATIONAL SEARCH REPORT

International application No.

		PC1/0802/191/2	
A. CLASSIFICATION OF SUBJECT MATTER			
IPC(7) : B65G1/04			
US CL : 414/217, 278, 273, 283, 940, 939; 118/719			
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)			
U.S.: 414/217, 217.1, 277, 278, 280, 281, 282, 283, 935, 939, 940; 118/719, 500; 432/239; 211/41.18			
0.0. +14/217, 217.1, 277, 276, 280, 281, 282, 283, 933, 939, 940; 118/719, 300; 432/239; 211/41.18			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
NONE			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
NONE			
None			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where ap	propriete of the relevant percegan	Relevant to claim No.
Y	JP 5-294410 A (DAIFUKA CO. LTD.) 09 November		
1	document).	er 1993 (09.11.1993) (See entire	1-7
Y	TD 1 200107 A (DATENTIAL GO LETT) OF D		
1	document).	er 1989 (01.12.1989) (See entire	1-7
v			
Y	US 6,036,812 A (WILLIAMS et al) 14 March 2000 (14.03.2000) (See entire document).		
	A US 5,508,859 (HU et al) 16 April 1996 (16.04.1996) (See entire document).		
A			
A	(14.11.1985) (See entire document).		
			ļ
Α	US 6,079,927 A (MUKA) 27 June 2000 (27.06.2000) (See entire document).		1-7
A	US 6,050,768 A (IWASAKI et al) 18 April 2000 (18.04.2000) (See entire document).		
A US 6,000,900 A (ISOGAI) 14 December 1999 (14.1)		2.1999) (See entire document) .	1-7
j			J
			ŀ
		J	ļ
Π.,			
Further documents are listed in the continuation of Box C.		See patent family annex.	
* Special categories of cited documents:		"T" later document published after the inte	rnational filing date or priority
date and not in conflict with the application but cited to understand the			ation but cited to understand the
"A" document defining the general state of the art which is not considered to be principle or theory underlying the invention of particular relevance			ntion
		"X" document of particular relevance; the	claimed invention cannot be
"E" earlier app	plication or patent published on or after the international filing date	considered novel or cannot be consider	red to involve an inventive step
"L" document	which may throw doubts on priority claim(s) or which is cited to	when the document is taken alone	
establish t	he publication date of another citation or other special reason (as	"Y" document of particular relevance; the	claimed invention cannot be
specified)		considered to involve an inventive step	when the document is
"O" document referring to an oral disclosure, use, exhibition or other means		combined with one or more other such being obvious to a person skilled in the	
		•	- 411
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent it	family
Date of the actual completion of the international search  Date of mailing of the international search report			
15 August 200	02 (15 08 2002)	<b>03</b> MAR 2003	
15 August 2002 (15.08.2002)  Name and mailing address of the ISA/US		Authorized officer	
Commissioner of Patents and Trademarks			l
Box PCT		Frank E. Werner	
Washington, D.C. 20231			
Facsimile No. (703)305-3230		Telephone No. (703)308-1140	