

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 February 2007 (01.02.2007)

PCT

(10) International Publication Number
WO 2007/014251 A3

- (51) International Patent Classification:
B25B 5/00 (2006.01) **B25B 11/00** (2006.01)
- (21) International Application Number:
PCT/US2006/028993
- (22) International Filing Date: 25 July 2006 (25.07.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/702,124 25 July 2005 (25.07.2005) US
- (71) Applicant (for all designated States except US):
ROBOTIC SOLUTIONS, INC. [US/US]; 13510
Railway Drive, Oklahoma City, OK 73114 (US).

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

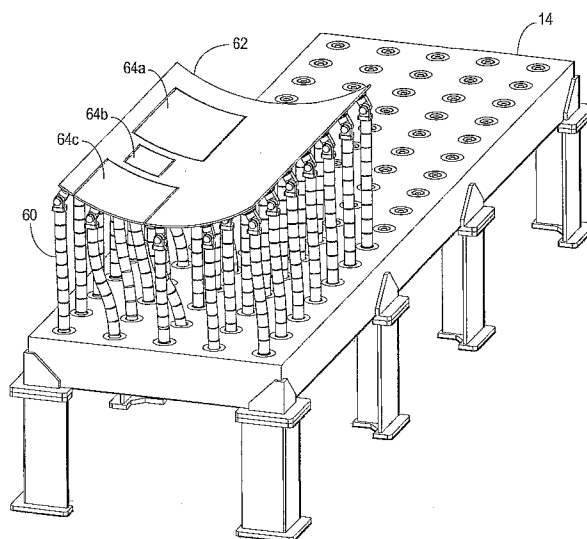
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

- (88) Date of publication of the international search report:
14 June 2007

- (72) Inventor: **KIRBY, Larry, D.**; 1009 Hunters Pointe Rd., Edmond, OK 73003 (US).
- (74) Agent: **ROUSE, Nicholas, D.**; Dunlap, Codding and Rogers P.C., P.O. Box 16370, Oklahoma City, OK 73113 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

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.

(54) Title: WORKPIECE HOLDING APPARATUS



(57) Abstract: An apparatus for holding a workpiece having a support table, a plurality of elongated workpiece supports extendible from the support table, a plurality of a clamp assemblies, and a processing machine. Each clamp assembly is positioned about a portion of a corresponding workpiece support. The clamp assemblies are moveable between a clamping position wherein the clamp assemblies support the workpiece support in a selected vertical position and a non-clamping position wherein the workpiece supports are moveable so that the position of the workpiece support is changeable. The processing machine is in communication with the clamp assemblies for controlling the position of the clamp assemblies, and the processing machine has an end effector engageable with the workpiece supports above the support table to permit the processing machine to move the workpiece supports to selected positions when the clamp assemblies are in the non-clamping position.

WO 2007/014251 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/28993

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B25B 05/00, 11/00 (2007.01)

USPC - 269/21,266; 29/559

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)

IPC(8) B25B 05/00, 11/00 (2007.01)

USPC - 269/21, 55, 58, 59, 71, 86, 266, 289R; 29/464, 466, 467, 468, 559; 294/86.4, 88

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

USPTO EAST System (US, USPG-PUB, EPO, DERWENT), MicroPatent, IP.com, DialogPro

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,186,567 B1 (BLICK) 13 February 2001 (13.02.2001) entire document	10-13
A	US 6,209,188 B1 (SODERBERG et al) 03 April 2001 (03.04.2001) entire document	1-13
A	US 2005/0015962 A1 (STURM, JR et al) 27 January 2005 (27.01.2005) entire document	1-13
A	US 5,562,276 A (BLICK) 08 October 1996 (08.10.1996) entire document	1-13

 Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

22 January 2007

Date of mailing of the international search report

19 APR 2007

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774