(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 December 2007 (27.12.2007)

PCT

(10) International Publication Number
WO 2007/149242 A3

(51) International Patent Classification:
B23B 27/16 (2006.01) *B26D 1/00* (2006.01)

(21) International Application Number:
PCT/US2007/013586

(22) International Filing Date: 8 June 2007 (08.06.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/471,046 20 June 2006 (20.06.2006) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, 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, MT, 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:
20 November 2008

WO 2007/149242 A3

(54) Title: INDEXABLE CUTTING INSERT WITH MULTIPLE CUTTING EDGES

(57) Abstract: An indexable cutting insert (10) includes a first component (12) with an outer or top surface (18) and side surfaces (22, 24, 26, 28). A third component (16) is mirror symmetric with respect to the first component (12) about a vertical or y-axis (68) of the cutting insert (10). A second component (14) is disposed between the first and third components (12, 16). Multiple cutting edges (30, 32, 34, 36) are defined at an intersection between the side surfaces (22, 24, 26, 28) and the top surface (18), wherein the cutting edges (30, 32, 34, 36) define a positive axial rake angle (50). In one embodiment, the first and third components (12, 16) are in the shape of a polygonal with a star appearance, and the second component (14) is in the shape of a square. The first and third components (12, 16) are offset from one another by a first offset angle (62), while the second component (14) is offset from the first and third components (12, 16) by a second offset angle (64) to allow the cutting insert (10) to be indexable.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/13586

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **B23B 27/16**(2006.01)
B26D 1/00(2006.01)

USPC: 407/113/42,115

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. : 407/113,42,115

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5855457 A (Arai et al.) 05 January 1999 (05.01.1999) see entire document	1,6,7-10 and 15-17
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Y		2,11
A	US 5810518 A (Wiman et al.) 22 September 1998 (22.09.1998) see entire document	1-20
A	US 6050751 A (Hellstrom) 18 April 2000 (18.04.2000) see entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
28 August 2008 (28.08.2008)	18 SEP 2008
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Form PCT/ISA/210 (second sheet) (July 1998)