



- (51) International Patent Classification:  
B27B 33/06 (2006.01)
- (21) International Application Number:  
PCT/US2011/042681
- (22) International Filing Date:  
30 June 2011 (30.06.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
12/827,658 30 June 2010 (30.06.2010) US
- (71) Applicant (for all designated States except US): **IRWIN INDUSTRIAL TOOL COMPANY** [US/US]; 8935 Northpointe Executive Drive, Huntersville, NC 28078 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **ELLISTON, Asif** [US/US]; 111 Berkshire Street, Springfield, MA 01151 (US). **KORB, William, B.** [US/US]; 151 Melrose Road, Broad Brook, CT 06016 (US). **HAMPTON, Stephen, A.** [US/US]; 39 Sturbridge Lane, East Longmeadow, MA 01028 (US).
- (74) Agents: **GIARRATANA, Mark, D.** et al.; Mccarter & English, LLP, Cityplace 1, 185 Asylum Street, Hartford, CT 06103-3495 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report (Art. 21(3))

- (88) Date of publication of the international search report:  
11 April 2013

(54) Title: SAW BLADE TOOTH FORM FOR ABUSIVE CUTTING APPLICATIONS

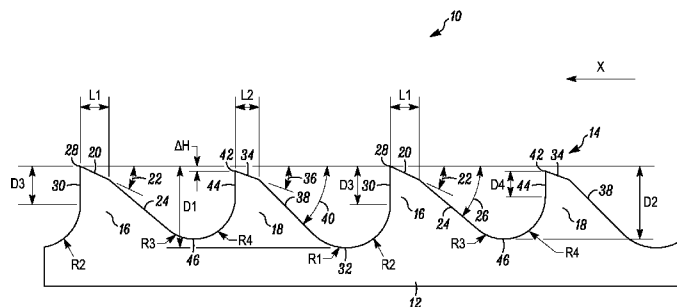


FIG. 2

(57) Abstract: A recip saw blade has a blade body and a cutting edge extending along the blade body and defined by a repeating pattern of two consecutive teeth suitable for abusive cutting applications. The blade defines a relatively coarse tooth pitch. The two consecutive teeth, which may be bi-metal, include a high tooth and a relatively low tooth in comparison to the high tooth. Each high tooth and low tooth include a primary clearance surface defining a relatively shallow primary clearance angle that is about 28° or less, and a secondary clearance surface defining a relatively steep secondary clearance angle in comparison to the primary clearance angle. The primary clearance angle of the high tooth is steeper than the primary clearance angle of the low tooth, such as between about 23° and 28°, and the secondary clearance angle of the high tooth is shallower than the secondary clearance angle of the low tooth.



**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US2011/042681

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(8) - B27B 33/06 (2011.01)                  USPC - 83/848                  According to International Patent Classification (IPC) or to both national classification and IPC</p>													
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  IPC(8) - B27B 33/02, 33/06, 33/10; B23D 61/12 (2011.01)                  USPC - 83/13, 697, 835, 846, 848, 849</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  PatBase</p>													
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td rowspan="2">US 2008/0307936 A1 (ELLISTON et al) 18 December 2008 (18.12.2008) entire document</td> <td>1-16, 20-38</td> </tr> <tr> <td>Y</td> <td>17-19</td> </tr> <tr> <td>Y</td> <td>US 3,661,037 A (ATHANASOULAS) 09 May 1972 (09.05.1972) entire document</td> <td>17-19</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2008/0307936 A1 (ELLISTON et al) 18 December 2008 (18.12.2008) entire document	1-16, 20-38	Y	17-19	Y	US 3,661,037 A (ATHANASOULAS) 09 May 1972 (09.05.1972) entire document	17-19
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.											
X	US 2008/0307936 A1 (ELLISTON et al) 18 December 2008 (18.12.2008) entire document	1-16, 20-38											
Y		17-19											
Y	US 3,661,037 A (ATHANASOULAS) 09 May 1972 (09.05.1972) entire document	17-19											
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>													
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent but published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed		
"A" document defining the general state of the art which is not considered to be of particular relevance	"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												
"E" earlier application or patent but published on or after the international filing date	"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												
"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)	"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												
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family												
"P" document published prior to the international filing date but later than the priority date claimed													
<p>Date of the actual completion of the international search 15 November 2011</p>		<p>Date of mailing of the international search report <b>25 NOV 2011</b></p>											
<p>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</p>		<p>Authorized officer:                  Blaine R. Copenheaver                  PCT Helpdesk: 571-272-4300                  PCT OSP: 571-272-7774</p>											