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- (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, QA, RO, RS, RU, RW, 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.
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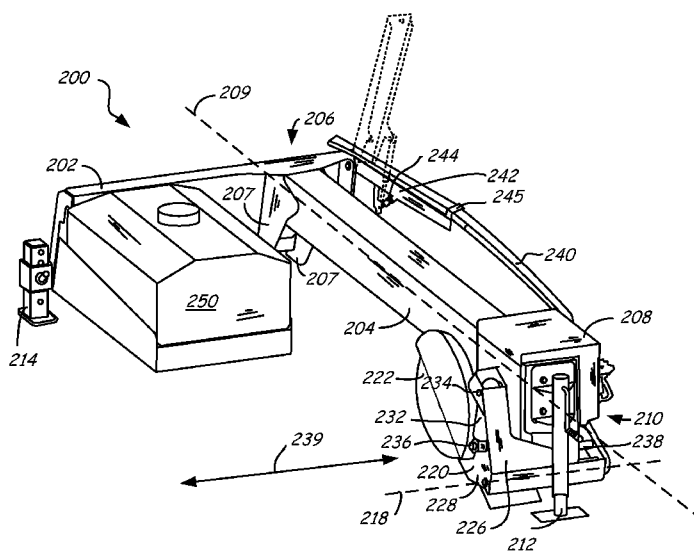
(54) **Title:** VEHICLE-MOUNTED HYDRAULIC SLAB CUTTER

FIG. 15

(57) **Abstract:** A cutting implement (200) configured to be attached to an implement carrier of a power machine. The cutting implement includes an attachment structure (202) that is capable of engaging and being secured to the implement carrier. The cutting implement further includes a boom (204) having a distal end (210) and a proximal end (206). The proximal end is attached to the attachment structure. A trolley (208) is selectively positionable between the proximal end and the distal end of the boom. An undercarriage (220) is operably coupled to the trolley and has a cutting element (222) attached to it. The undercarriage is moveable under power in a lateral direction (239) with respect to the trolley so that the cutting element is capable of being offset along a lateral direction with respect to the boom.

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7 February 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/034938

A. CLASSIFICATION OF SUBJECT MATTER
INV. E01C23/09 B28D1/04 B23D45/02
ADD.

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)
E01C B28D B27B B23D

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CA 1 253 420 A1 (BERTRAND RENE) 2 May 1989 (1989-05-02)	1-4, 12-14
Y	pages 8-12; figures 1-12 -----	8-11,15
X	US 4 433 871 A (BERTRAND RENE [CA]) 28 February 1984 (1984-02-28) the whole document -----	1-4, 12-14
X	EP 0 283 286 A2 (ANDERSON STRATHCLYDE PLC [GB]) 21 September 1988 (1988-09-21) column 2, line 35 - column 4, line 38; figures 1-3 -----	1,2,4, 13,14
Y	WO 2007/145880 A2 (HILSGEN TROY D [US]) 21 December 2007 (2007-12-21) the whole document -----	8-11,15
	-/-	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* 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

30 November 2012

Date of mailing of the international search report

06/12/2012

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/034938

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
8-11, 15
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/034938

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/194617 A1 (MOLLER KARL H [US] ET AL) 23 August 2007 (2007-08-23) the whole document	9,10

Y	WO 03/025289 A1 (WACKER WERKE KG [DE]; STEFFEN MICHAEL [DE]; RETTENWEBER ALFRED [DE]) 27 March 2003 (2003-03-27) the whole document	9,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/034938

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
CA 1253420	A1	02-05-1989	CA 1253420 A1	02-05-1989
			US 2002024249 A1	28-02-2002

US 4433871	A	28-02-1984	NONE	

EP 0283286	A2	21-09-1988	NONE	

WO 2007145880	A2	21-12-2007	CA 2654189 A1	21-12-2007
			EP 2029337 A2	04-03-2009
			US 2008017182 A1	24-01-2008
			WO 2007145880 A2	21-12-2007

US 2007194617	A1	23-08-2007	US 2007194617 A1	23-08-2007
			US 2008150347 A1	26-06-2008
			WO 2007098310 A2	30-08-2007

WO 03025289	A1	27-03-2003	AT 385528 T	15-02-2008
			DE 10145465 A1	17-04-2003
			EP 1425475 A1	09-06-2004
			EP 1842964 A2	10-10-2007
			ES 2299605 T3	01-06-2008
			JP 4109194 B2	02-07-2008
			JP 2005503501 A	03-02-2005
			JP 2008111334 A	15-05-2008
			US 2004251730 A1	16-12-2004
			WO 03025289 A1	27-03-2003

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4, 12-14

A cutting implement comprising a trolley selectively positionable on a boom and an undercarriage operably coupled to the trolley, the undercarriage having a cutting element attached thereto, wherein the undercarriage is moveable under power in a lateral direction with respect to the trolley so that the cutting element is capable of being offset along a lateral direction with respect to the boom.

1.1. claims: 2-4

Details of the undercarriage.

1.2. claim: 12

Moving mechanism of the trolley.

2. claims: 5-7

Fluid source for the cutting implement of claim 1.

3. claims: 8-11, 15

Control of the cutting element of the cutting implement of claim 1.
