(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 2 May 2002 (02.05.2002)

PCT

(10) International Publication Number WO 02/034654 A3

(51) International Patent Classification⁷: B65G 69/18

(21) International Application Number: PCT/IB01/02006

(22) International Filing Date: 25 October 2001 (25.10.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 2000/5985 25 October 2000 (25.10.2000) ZA

(71) Applicant (for all designated States except US): AL-BERTSON, Derek, William [ZA/ZA]; 12 Gillard Drive, Cresta, 2194 Randburg (ZA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): TAYLOR, Graeme, John [ZA/ZA]; 47-13th Street, 2190 Parkmore (ZA).

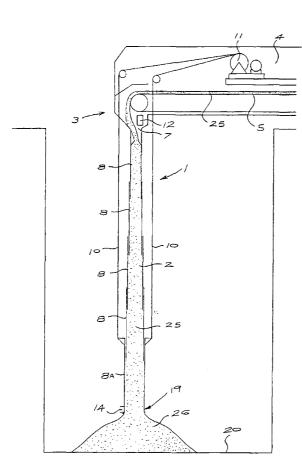
(74) Agent: JOHN & KERNICK; P.O. Box 3511, Halfway House, 1685 Midrand (ZA).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, 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).

[Continued on next page]

(54) Title: MATERIAL DISCHARGE APPARATUS



(57) Abstract: Material discharge apparatus is provided having a substantially upright chute which is extendable in its length and through which material operatively flows under gravity from an inlet to a discharge end. Control means are provided to control the discharge of the material from the chute, by controlling the length of the chute and the height of the discharge end relative to the surface onto which the material is discharged, to maintain the level of material in the chute within a predetermined range.

WO 02/034654 A3

WO 02/034654 A3



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

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.

(88) Date of publication of the international search report:

18 July 2002

INTERNATIONAL SEARCH REPORT

Intrational Application No PCT/IB 01/02006

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B65G69/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{array}{ccc} \text{Minimum documentation searched (classification system followed by classification symbols)} \\ \text{IPC} & 7 & \text{B65G} \end{array}$

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	WO 98 35897 A (HUTH ALAN ;GLADSTONE PORT AUTHORITY (AU)) 20 August 1998 (1998-08-20)	1-11,13, 14,16-20
Α	page 4, line 31 -page 10, line 12 figure 1	12,15, 21-26
X	US 5 697 408 A (REEVES LESLIE NEVILLE) 16 December 1997 (1997-12-16) column 3, line 24 -column 5, line 15 figures 1-13	1,2,4-8, 10,11, 17-21
X	US 5 016 686 A (GERSTENKORN RALPH) 21 May 1991 (1991-05-21) column 3, line 17 -column 6, line 58 figure 1	1,2,4-8, 10,11, 17-20

Further documents are listed in the continuation of box C.	Patent family members are listed in 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 document but published on or after the international filling 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 filling 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 3 May 2002	Date of mailing of the international search report 14/05/2002
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Authorized officer Papatheofrastou, M

1

INTERNATIONAL SEARCH REPORT

Intr tional Application No
PCT/IB 01/02006

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT Category: Citation of decument, with indication where appropriate of the relevant passages. Relevant to claim No.								
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.						
A	DE 89 14 932 U (ORENSTEIN KOPPEL) 18 April 1991 (1991-04-18) page 5, line 15 -page 7, line 29 figures 1-6	1,15						

1

INTERNATIONAL SEARCH REPORT

information on patent family members

Inte tional Application No
PCT/IB 01/02006

Patent document cited in search report		Publication date	Patent family member(s)		Publication date	
WO 9835897	A	20-08-1998	AU	724261 B2	14-09-2000	
			AU	5973698 A	08-09-1998	
			WO	9835897 A1	20-08-1998	
			ΕP	0995084 A1	26-04-2000	
			US	6199684 B1	13-03-2001	
US 5697408	 А	 16-12-1997	AU	686374 B2	05-02-1998	
			AU	2313695 A	29-11-1995	
			CA	2166093 A1	09-11-1995	
			DE	69501610 D1	19-03-1998	
			DE	69501610 T2	20-08-1998	
			EP	0705216 A1	10-04-1996	
			ES	2115377 T3	16-06-1998	
			WO	9529864 A1	09-11-1995	
US 5016686	Α	21-05-1991	NONE			
DE 8914932		18-04-1991	DE	8914932 U1	18-04-1991	