

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

**EP 1 609 916 A3**

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
**05.04.2006 Bulletin 2006/14**

(51) Int Cl.:  
**E02F 3/92 (2006.01)**

(43) Date of publication A2:  
**28.12.2005 Bulletin 2005/52**

(21) Application number: **05016382.3**

(22) Date of filing: **17.07.1998**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(71) Applicant: **"Dredging International"**  
**B-2070 Zwijndrecht (BE)**

(72) Inventor: **Vandycke, Stefaan**  
**8450 Bredene (BE)**

(30) Priority: **17.07.1997 BE 9700625**

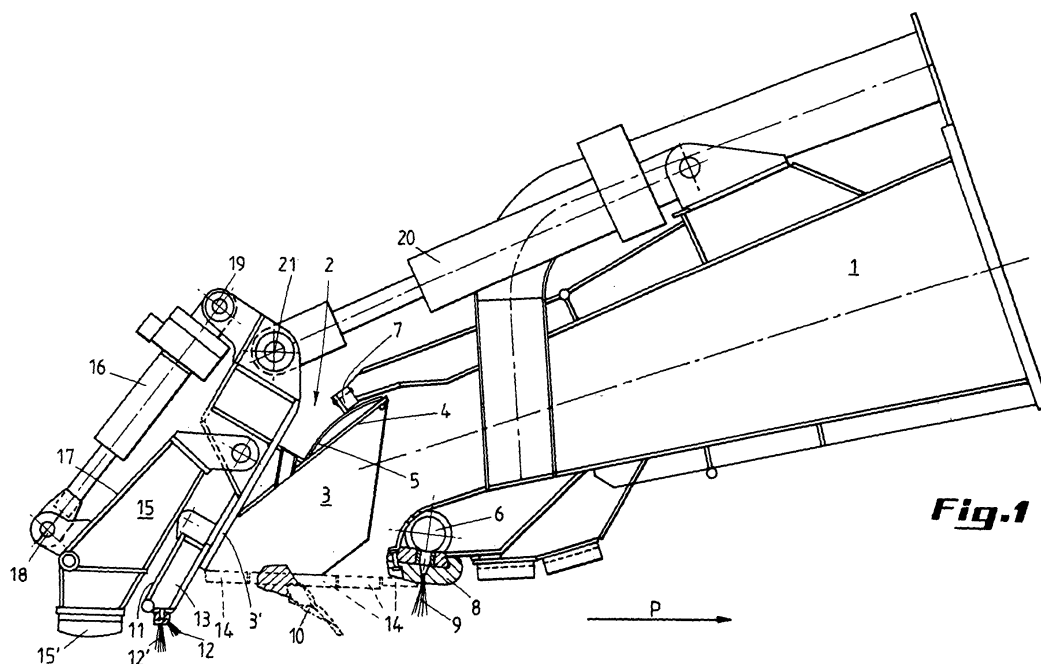
(74) Representative: **Luys, Marie-José A.H. et al**  
**Gevers & Vander Haeghen,**  
**Holidaystraat 5**  
**1831 Diegem (BE)**

(62) Document number(s) of the earlier application(s) in  
accordance with Art. 76 EPC:  
**98870161.1 / 0 892 116**

(54) **Drag head for a trailing suction hopper dredger and process for dredging by means of this drag head**

(57) This invention concerns a drag head for a trailing suction hopper dredger which essentially consists of a structure connected to a suction pipe, with a visor (2) rotating around an horizontal axis (6), in which a series of teeth (10) are applied for breaking up the sand, which are arranged along a line which extends perpendicularly

with respect to the direction of motion of the drag head, and a first series of jet pipes (9) for injecting water under high pressure, which are arranged along a line parallel to the line and in front of said teeth, wherein at least one second series of jet pipes (12,12') is provided along a line parallel to and behind the line of said teeth  
Figure 1.



**Fig.1**

**EP 1 609 916 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 05 01 6382

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	GB 1 312 032 A (KONINKL MIJ TOT HET UITVOEREN) 4 April 1973 (1973-04-04)	1	E02F3/92
A	* page 2, left-hand column, line 63 - right-hand column, line 104 * * figures *	4,6-8	
Y	DE 38 17 213 C (PAUTZ) 12 January 1989 (1989-01-12)	1	
A	* column 2, line 13 - line 17 * * column 2, line 60 - column 4, line 11 * * figures *	3,4,7,8	
A	SU 1 573 101 A1 (GELPEJ VLADILEN L,SU) 23 June 1990 (1990-06-23) * figures 1,2 *	1,3,7	
A	PATENT ABSTRACTS OF JAPAN vol. 009, no. 191 (M-402), 7 August 1985 (1985-08-07) -& JP 60 055133 A (KOKUSAI DENSHIN DENWA KK), 30 March 1985 (1985-03-30) * abstract * * figures 2-4 *	1,7,8	TECHNICAL FIELDS SEARCHED (IPC) E02F
A	GB 355 005 A (JOHN REID) 20 August 1931 (1931-08-20) * page 2, right-hand column, line 70 - line 73 *	1	
A	EP 0 668 406 A (KRUPP FOERDERTECHNIK GMBH) 23 August 1995 (1995-08-23) * figures 3,4 * * column 6, line 15 - line 45 *	1,6	
A	EP 0 142 881 A (IHC HOLLAND NV) 29 May 1985 (1985-05-29) * description on pages 9-15 * * figures figures,1-4 *	1,8	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 February 2006	Examiner Guthmuller, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

3  
EPO FORM 1503 03.82 (P04C01)

[illegible]

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 01 6382

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-02-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 1312032	A	04-04-1973	BE 761724 A1	19-07-1971
			NL 7000732 A	21-07-1971
DE 3817213	C	12-01-1989	NONE	
SU 1573101	A1	23-06-1990	NONE	
JP 60055133	A	30-03-1985	NONE	
GB 355005	A	20-08-1931	NONE	
EP 0668406	A	23-08-1995	AU 687483 B2	26-02-1998
			AU 1144395 A	31-08-1995
			DE 4405451 A1	31-08-1995
			ES 2139103 T3	01-02-2000
			FI 950726 A	22-08-1995
			JP 7259121 A	09-10-1995
			US 5603171 A	18-02-1997
EP 0142881	A	29-05-1985	AU 562608 B2	11-06-1987
			AU 3471984 A	02-05-1985
			BR 8405476 A	03-09-1985
			DE 3463067 D1	14-05-1987
			FI 844210 A	29-04-1985
			JP 60112940 A	19-06-1985
			NL 8303725 A	17-05-1985
			SU 1419525 A3	23-08-1988
			US 4597200 A	01-07-1986
EP 0075358	A	30-03-1983	DE 3263766 D1	27-06-1985
			JP 58123929 A	23-07-1983
			NL 8104293 A	18-04-1983
			US 4437244 A	20-03-1984
EP 0548707	A	30-06-1993	DE 4226492 A1	01-07-1993
			DK 548707 T3	19-08-1996
			ES 2086627 T3	01-07-1996
US 5631160	A	20-05-1997	AU 6828794 A	21-11-1994
			CA 2162029 A1	10-11-1994
			WO 9425191 A1	10-11-1994
DE 3810932	A1	19-10-1989	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82