



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
01.06.2011 Bulletin 2011/22

(43) Date of publication A2:
18.05.2011 Bulletin 2011/20

(21) Application number: **10190665.9**

(22) Date of filing: **10.11.2010**

(51) Int Cl.:
E02F 3/96 (2006.01) **E02F 5/00** (2006.01)
E02F 5/10 (2006.01) **E02F 5/14** (2006.01)
E02F 9/20 (2006.01) **E02F 3/43** (2006.01)
E02F 5/28 (2006.01) **G05B 13/02** (2006.01)
B63B 49/00 (2006.01)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **13.11.2009 NL 2003800**

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(54) **Backhoe dredger for dredging soil material under water**

(57) The invention relates to a device (1) for dredging soil material under water. The device comprises a pontoon (6), provided with an excavator (10) adapted to excavate soil under water, and actuating means (7, 16, 17, 18, 19) adapted to control the motion of the pontoon and/or the excavator. The device further comprises first monitoring means (30, 35) adapted to monitor the position of the excavator; second monitoring means (31)

adapted to monitor the forces experienced by the excavator; and computing means (33) adapted to compute, on the basis of data obtained from the first and the second monitoring means, control signals for the actuating means. The invention also relates to a method for dredging soil material under water, using the invented device, and to a computer program comprising program instructions that when loaded into a computer carries out the method.

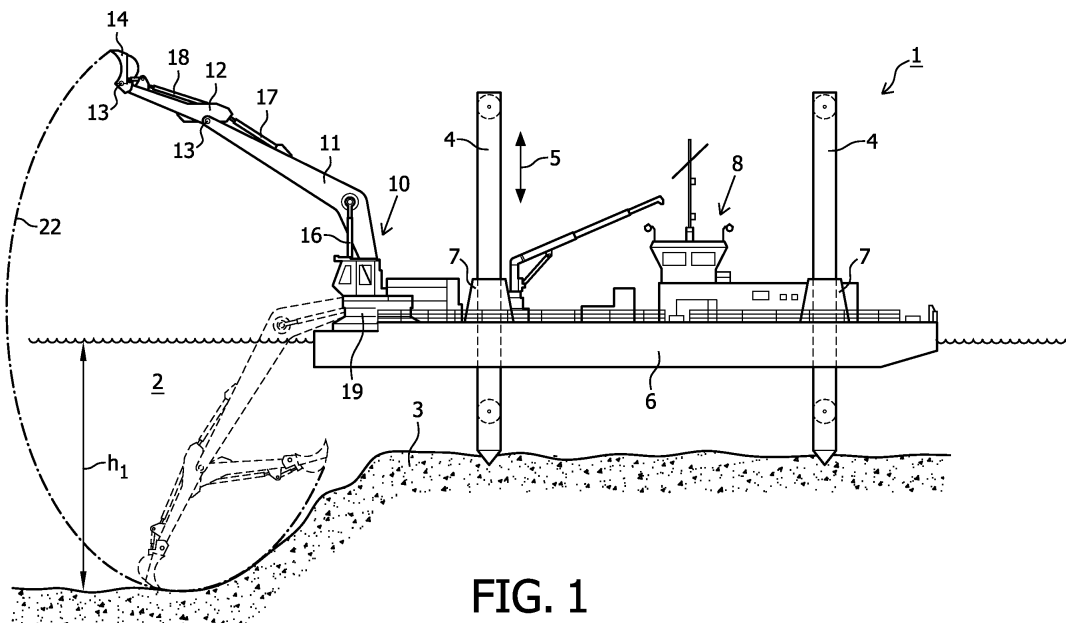


FIG. 1



EUROPEAN SEARCH REPORT

Application Number
EP 10 19 0665

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 03/023152 A2 (ROCKSAW TECHNOLOGY INC [US]; BONAR FRANCK K [US]) 20 March 2003 (2003-03-20)	1,9,10,13,17	INV. E02F3/96 E02F5/00
Y	* page 13, line 5 - line 11 * * page 14, line 9 - line 18; figures 1-3 *	2-4,7,8	E02F5/10 E02F5/14 E02F9/20
Y	US 6 076 030 A (ROWE PATRICK S [US]) 13 June 2000 (2000-06-13) * column 5, line 1 - line 10; figure 1 *	2-4	E02F3/43 E02F5/28 G05B13/02 B63B49/00
Y	US 2004/217900 A1 (MARTIN KENNETH L [US] ET AL) 4 November 2004 (2004-11-04) * paragraphs [0010], [0032] - [0037]; figure 1 *	7,8	
Y	JP 1 314915 A (KOKUDO SOGO KENSETSU KK; KITSUKOU KOGAKU KENKYUSHO KK) 20 December 1989 (1989-12-20) * abstract; figures *	7	
A	US 2008/010869 A1 (HARRELL SAMUEL J [US]) 17 January 2008 (2008-01-17) * the whole document *	1,13,17	TECHNICAL FIELDS SEARCHED (IPC) E02F A01D G05B B63B
<p>4 The present search report has been drawn up for all claims</p>			
Place of search Munich		Date of completion of the search 20 April 2011	Examiner Papadimitriou, S
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

EPO FORM 1503 03.82 (P04C01)



Application Number

EP 10 19 0665

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-4, 7-10, 13-17

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 10 19 0665

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4, 9, 10, 13-17

a parameter display means for the excavator of a device for dredging soil material under water

2. claim: 5

a pressure monitoring system for a multi-link excavator

3. claim: 6

a depth monitoring system for a multi-link excavator

4. claims: 7, 8

a means for determining an area under water to be excavated

5. claims: 11, 12

a parameter display means for the excavator of a device for dredging soil material under water

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

EP 10 19 0665

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
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20-04-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03023152 A2	20-03-2003	AU 2002324960 A1	24-03-2003
US 6076030 A	13-06-2000	NONE	
US 2004217900 A1	04-11-2004	NONE	
JP 1314915 A	20-12-1989	NONE	
US 2008010869 A1	17-01-2008	NONE	