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(54) **Cutter head drive**

(57) Device for the excavation and removal of material from a bottom of a water body, comprising a cutter member (9) for loosening the soil material and a discharge pipe line (7) for the loosened soil material, as well as a support structure, such as a ladder (1), for supporting the discharge pipe line (7), wherein the soil material is transported through the discharge pipe line (7) by means of a pump (15), furthermore provided with rotation means (11,12,...) for rotation of the cutter member, wherein the cutter member (9) has a number of cutting means (33)

and defines a space between the cutting means and the entrance of the discharge pipe line, wherein at the entrance of the discharge pipe line a filling piece (8) is arranged, provided with a suction passage (51) between the entrance and the space in order to define a suction mouth, wherein the exit opening of the suction passage to the discharge pipe line contains the centre line (S) of the discharge pipe line and the rotary centre line of the cutter member.

EP 1 882 783 A3



EUROPEAN SEARCH REPORT

Application Number
EP 07 07 5644

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	NL 6 604 311 A (VSESOJUZNY NAUCHNO-ISSLEDOVATELSKY INSTITUT) 2 October 1967 (1967-10-02) * page 3 - page 4; figure *	1,3,5,6, 12	INV. E02F3/92
Y	WO 2004/111353 A (DREDGING INTERNAT N V [BE]; CLYMANS ETIENNE [BE]) 23 December 2004 (2004-12-23) * abstract; figures *	1,3,5,6, 14	
A		2	
Y	US 3 673 716 A (TRONDLE ALOIS) 4 July 1972 (1972-07-04) * figure 2 * * column 3, line 36 - line 67 *	1,3,5,6, 14	
A	US 4 624 066 A (HEUVELMAN CORNELIS [NL]) 25 November 1986 (1986-11-25) * figure 4 *	1,5,6	
A	JP 62 001935 A (TOA HARBOR WORKS CO LTD) 7 January 1987 (1987-01-07) * figures 1,4 *	1,5,6	TECHNICAL FIELDS SEARCHED (IPC)
A	JP 04 146333 A (UBE INDUSTRIES) 20 May 1992 (1992-05-20) * figure 2 *	12	E02F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 March 2009	Examiner Guthmuller, Jacques
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			

8

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Application Number

EP 07 07 5644

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:

☒ 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:

1-6,7,12-15

☐ 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 07 07 5644

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: 1-6, 7, 12-15

Device for the excavation and removal of material, with a cutter member, a discharge pipe line, a pump and means for rotation of the cutter member, WHEREIN at the entrance of the discharge pipe line a filling piece is arranged, provided with a suction passage with an exit opening.

2. claims: 8, 9, 16; 17, 18

Device for the excavation and removal of material, with a cutter member, a discharge pipe line, a pump and means for rotation of the cutter member, WHEREIN the rotation means comprise a drive casing, which is connected to the cutter member, AND WHEREIN the drive casing is externally rotatably bearing mounted.

3. claims: 10, 11; 19-25

Device for the excavation and removal of material, with a cutter member, a discharge pipe line, a pump and means for rotation of the cutter member, WHEREIN the rotation means comprise a drive casing, which is connected to the cutter member, AND WHEREIN the drive casing is provided with a placement support for detachable attachment of the cutter member thereon.

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

EP 07 07 5644

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.

16-03-2009

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