

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference W/2XP97/62	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/NL2018/050567	International filing date ( <i>day/month/year</i> ) 4 September 2018 (04-09-2018)	(Earliest) Priority Date ( <i>day/month/year</i> ) 5 September 2017 (05-09-2017)
Applicant  BLUEMARINE OFFSHORE YARD SERVICES B.V.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed  
 a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b.  This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2.  **Certain claims were found unsearchable** (See Box No. II)

3.  **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant  
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant  
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 2, 5B  
 as suggested by the applicant  
 as selected by this Authority, because the applicant failed to suggest a figure  
 as selected by this Authority, because this figure better characterizes the invention
- b.  none of the figures is to be published with the abstract

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The invention provides a subsea trencher (1) for arranging at least partly into the seabed a subsea pipeline (55) laying on the seabed, the subsea trencher comprising:

- - at least one cart (5, 7) that separately carries at least one trench tool (9) and is configured to run along the subsea pipeline, wherein the trench tool is configured to work the seabed underneath the subsea pipeline;

CHARACTERIZED BY

- - a subsea support frame (3), that carries, separately from the cart, heavy subsea equipment connected to the trench tool for operating the trench tool, and wherein  
when the subsea support frame is fixed to the cart, the subsea trencher is configured to load at least substantially the assembled weight of the cart and subsea support frame onto the subsea pipeline as the subsea trencher runs on the subsea pipeline,  
when the subsea support frame is separate from the cart, the subsea support frame is configured to be suspended above the seabed or arranged beside the subsea pipeline at a distance from the subsea pipeline as the cart runs along the subsea pipeline.

INTERNATIONAL SEARCH REPORT

International application No

PCT/NL2018/050567

A. CLASSIFICATION OF SUBJECT MATTER  
 INV. E02F5/10 E02F3/88  
 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)  
 E02F

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	WO 2009/141409 A2 (SAIPEM SPA [IT]; LAZZARIN DIEGO [IT]; FONTOLAN MASSIMO [IT]) 26 November 2009 (2009-11-26)	1-3,5-7, 13,16, 23,24, 27-29
Y	figures 1-3, 8, 9, 10a to 10d page 12, line 12 - page 15, line 26 page 11, line 1 - page 15, line 26:	1,4,8,9, 17-21, 26,27, 30-33
X	----- US 3 583 170 A (DEVRIES DOUWE) 8 June 1971 (1971-06-08)	1,2,5-7, 10-12, 16,22, 25,27,28
Y	figure 18 figure 1 to 10 figure 12  ----- -/--	1,4,8,9, 13-15, 17-21, 26,27, 30-33



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

14 January 2019

Date of mailing of the international search report

23/01/2019

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Bultot, Coralie

## INTERNATIONAL SEARCH REPORT

International application No

PCT/NL2018/050567

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2017/017599 A1 (SAIPEM SPA [IT]) 2 February 2017 (2017-02-02) figure 9a to 9d -----	9,13-15
Y	US 6 022 173 A (SAXON SAINT E [US]) 8 February 2000 (2000-02-08) figures 11, 12 -----	17-21, 31-33
Y	US 4 087 981 A (NORMAN ROBERT M) 9 May 1978 (1978-05-09) figures 1-3 -----	1,8,9,27
Y	GB 2 014 538 A (LAND & MARINE ENG LTD) 30 August 1979 (1979-08-30) figure 1 to 3 -----	17-21, 31-33

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/NL2018/050567

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009141409	A2	26-11-2009	CA 2725374 A1
			EA 201071353 A1
			EP 2283186 A2
			US 2011211913 A1
			WO 2009141409 A2
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US 3583170	A	08-06-1971	NONE
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WO 2017017599	A1	02-02-2017	EP 3329055 A1
			US 2018216314 A1
			WO 2017017599 A1
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US 6022173	A	08-02-2000	NONE
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US 4087981	A	09-05-1978	NONE
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GB 2014538	A	30-08-1979	NONE
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