



## SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 18 92 98 31

**Classification of the application (IPC):**  
E21B 33/064, E21B 34/04, E21B 34/00, E21B 33/068, E21B 34/14

**Technical fields searched (IPC):**  
E21B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
A	US 2015060081 A1 (COX BRENT [US]) 05 March 2015 (2015-03-05) * paragraph [0052] - paragraph [0068]; figures 1-3 *	1-6, 11, 12
A	US 2017350210 A1 (LUGO MARIO [US] ET AL) 07 December 2017 (2017-12-07) * paragraph [0058]; figures 1,2 *	1-6, 11, 12
X	US 2003127231 A1 (SCHLEGELMILCH TYE [US] ET AL) 10 July 2003 (2003-07-10) * paragraph [0021] - paragraph [0035]; figures 2,4 *	7-10

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 06 December 2021	Examiner Morrish, Susan
---------------------------	--	----------------------------

### CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



## ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 18 92 98 31

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 06-12-2021  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2015060081	A1	05-03-2015	AU 2014315259 A1	21-04-2016
			EP 3042032 A1	13-07-2016
			SG 11201601607V A	28-04-2016
			US 2015060081 A1	05-03-2015
			WO 2015034994 A1	12-03-2015
US 2017350210	A1	07-12-2017	NONE	
US 2003127231	A1	10-07-2003	BR 0206084 A	05-10-2004
			US 2003127231 A1	10-07-2003
			US 2006254773 A1	16-11-2006