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(54) **METHOD AND APPARATUS FOR ARRANGING A FOUNDATION PILE IN THE GROUND**

(57) Method for arranging a foundation pile in a soil, comprising the following steps:

- providing a tube assembly comprising a tube having a tube center line, the tube forming an interior space, wherein a drill head is attached at the distal end or introduction end of the tube, wherein the drill head is provided with at least one cutter, wherein the drill head is provided with at least one passage that opens to the outside and is capable of being brought into fluid communication with the interior space,
- introducing the tube with the rotating drill head at the lower end into the soil, according to an introduction track, wherein the cutter of the rotating drill head dislodges soil material,
- during at least one first section of the introduction track via the interior space pressing grout towards the passage in the drill blade at a first pressure,
- pressing the grout out of the passage to enable the grout to mix with the soil material, in particular sandy soil material, dislodged by the drill head,
- characterized in that, the relative displacement of grout or mixture of grout with soil material is limited in proximal direction by a cross-plate or transverse flange that is attached near the distal end of the tube assembly, in particular to the drill head, and extends around the tube assembly, said cross-plate or transverse flange extending substantially radially to the outside relative to the tube center line, and being situated at the proximal side of the

drill head.

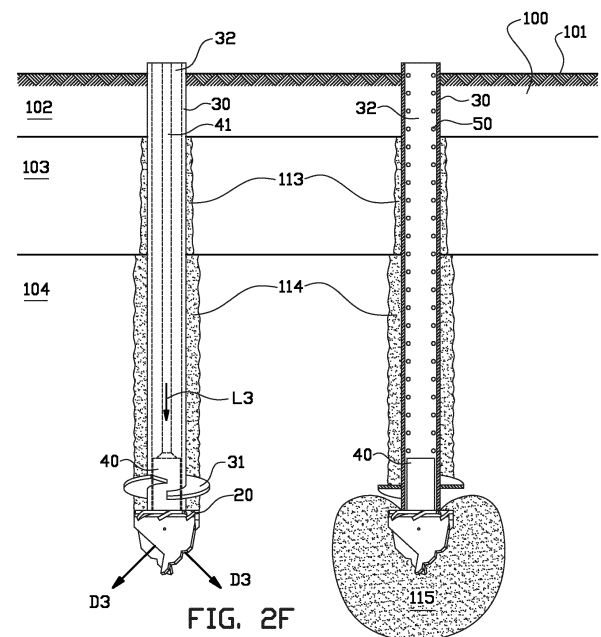


FIG. 2F

FIG. 3



EUROPEAN SEARCH REPORT

Application Number
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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	KR 101 135 163 B1 (SEAN CONSTRUCTION CO LTD [KR]; LEE BOK WOO [KR]; SEAN ENG CO LTD [KR]) 16 April 2012 (2012-04-16)	1,4-15	INV. E02D5/62 E02D5/42 E02D5/46 E02D7/26 E02D5/44
Y	* abstract * * paragraph [0026] - paragraph [0040]; figures 1-6 *	2,3	
X	JP S57 92218 A (MARUGO KISO KOGYO KK) 8 June 1982 (1982-06-08)	1,4-10, 13-15	
Y	* the whole document *	2,3,12	
X	US 3 354 657 A (TURZILLO LEE A) 28 November 1967 (1967-11-28)	11,15	
A	* the whole document *	1,4	
Y	KR 2014 0039589 A (CHOI SEONG HEE [KR]) 2 April 2014 (2014-04-02)	2,3,12	TECHNICAL FIELDS SEARCHED (IPC) E02D
A	* concrete pile, cross-plate, protrusions; figures 1-14 *	9,11,14	
Y	JP 2010 126975 A (CHIYODA GEOTECH CO LTD) 10 June 2010 (2010-06-10)	2,3,12	
A	* steel pipe pile, cross-plate, protrusions, reinforcing cage or bars; paragraph [0028]; figures 1-13,25 *	11,14	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 April 2020	Examiner Koulo, Anicet
<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>			

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

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5 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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29-04-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 101135163 B1	16-04-2012	NONE	
JP S5792218 A	08-06-1982	NONE	
US 3354657 A	28-11-1967	NONE	
KR 20140039589 A	02-04-2014	NONE	
JP 2010126975 A	10-06-2010	NONE	