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54 Electrically powered pump unit.

57 A single or double acting reciprocating pump has a plunger (12) constituted as the rotor of a linear electric motor, the stator being constituted by the pump casing in which the plunger (12) moves. The plunger (12) can be annular, the casing can then have a core around which the plunger is received, and rotor and stator windings (17, 15) can then be provided at either or both of inner and outer faces of the plunger (12). The plunger (12) can extend into a pump end of the pump through a seal (27) from a driving end in which the motor is located, the driving end being oil-filled. The pump is suitably embodied for use in a pipe stack in a fluid extraction apparatus.

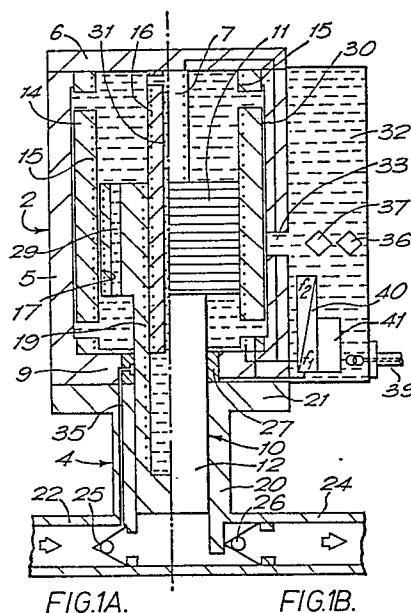


FIG.1A.

FIG.1B.



DOCUMENTS CONSIDERED TO BE RELEVANT			EP 87300290.1
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	US - A - 2 686 280 (STRONG)	1,2,11	F 04 B 17/04
Y	* Totality; especially fig. 1; column 2, lines 23-45 *	2,11	F 04 B 49/06
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X	DE - A1 - 2 903 817 (KOFINK)	1	
Y	* Totality; especially claims 1-3; fig.; page 4 *	2,11	
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	* Totality; fig.; claim 1 *		
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X	GB - A - 2 112 872 (BRITISH PETROLEUM)	1,14-16	
	* Totality *		
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X	FR - A - 2 106 841 (SAPORTA)	1	
	* Totality *		
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X	PATENT ABSTRACTS OF JAPAN, unexamined applications, field M, vol. 7, no. 71, March 24, 1983	1,3	
A	THE PATENT OFFICE JAPANESE GOVERNMENT, page 73M202	4,5	
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The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 12-11-1987	Examiner WERDECKER
CATEGORY OF CITED DOCUMENTS		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	
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			

