

⑫ **EUROPEAN PATENT APPLICATION**

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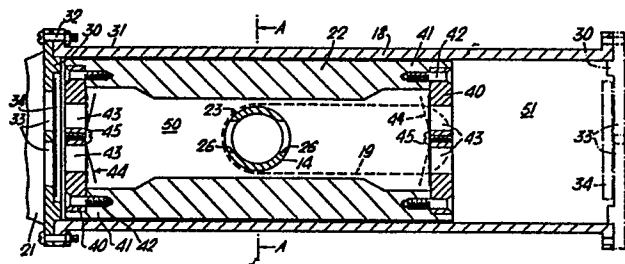
⑧④ Designated Contracting States: **AT BE CH DE FR IT LI NL SE**

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⑧⑧ Date of deferred publication of search report: **21.11.85 Bulletin 85/47**

⑤④ **Piston pump.**

⑤⑦ A pump cylinder (18) is driven in reciprocation relative to a hollow piston (22) within the cylinder. The piston and cylinder each have valved inlet ports (33, 34; 43, 44) at each end. A tubular member (14) communicates with the hollow of the piston centrally between the piston ends and extends perpendicular to the piston, serving further as a stationary pivot for oscillation of the piston while the cylinder is driven in a swinging reciprocation relative to the piston. The tubular member extends through and works relative to a slot (19) formed through the cylinder wall so that reciprocation of the cylinder pumps a fluid along a flow path through the valved inlet ports and along said tubular member. The cylinder is driven at low speed by a motor (15) through a gear box (16) rigidly secured to a tubular frame (71) of the pump. A number of piston and cylinder devices may be driven by a common drive means, and employ a common tubular member, in a modular arrangement. The pump is simple, reliable and quiet, and is effective to provide small quantities of air at low pressure, e.g. for aeration at isolated effluent treatment plants and at fish farms.





DOCUMENTS CONSIDERED TO BE RELEVANT			EP 83301911.0
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.) 3
A	<u>GB - A - 1 307 461</u> (RICHTER) * Totality * --	1,5	F 04 B 19/02
A	<u>GB - A - 1 198 584</u> (TECUMSEH PRODUCTS COMPANY) * Totality, especially fig. 1-9 * --	1,2,9	
A	<u>US - A - 4 072 210</u> (CHIEN) * Totality * --	1	
A	<u>GB - A - 587 284</u> (FREEMAN) * Totality * --	1	
A	<u>US - A - 1 295 529</u> (LAWHEAD) * Totality * --	1,5	<b>TECHNICAL FIELDS SEARCHED (Int. Cl.) 3</b>
A	<u>US - A - 1 130 959</u> (CAMPBELL) * Totality, especially numeral 29 * ----	1	F 04 B 19/00 F 04 B 29/00 F 04 B 35/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 05-08-1985	Examiner WITTMANN
<b>CATEGORY OF CITED DOCUMENTS</b> 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			