

Title (en)  
Pump.

Title (de)  
Pumpe.

Title (fr)  
Pompe.

Publication  
**EP 0174750 A1 19860319 (EN)**

Application  
**EP 85305787 A 19850814**

Priority  
GB 8420909 A 19840817

Abstract (en)

A force pump is disclosed that requires no stuffing box. The pump has a riser pipe (1) and a delivery pipe (2) branched off the riser pipe between upper and lower piston assemblies (12A, 12B) that operate together in the riser pipe. There are one-way valves (14A, 14B), respectively below the lower piston assembly (12B) and at the foot of the delivery pipe (1). The lower piston assembly (12A) incorporates a one-way bypass (21/22). The one-way bypass (21/22) in the lower piston assembly (12A) and the one-way valves (14A, 14B) are set to open and close as fluid is pumped such that on each upstroke of the piston assemblies (12A, 12B) the one-way bypass (21/22) and the one-way valve (14B) in the delivery pipe (2) are closed and the one-way valve (14A) in the riser pipe is open so that by the action of the lower piston assembly (12B) fluid is drawn into the riser riser through the one-way valve (14A) therein, and such that on each downstroke of the piston assemblies (14A, 14B) the one-way bypass (21/22) and the one-way valve (14B) in the delivery pipe are open and the one-way valve (14A) in the riser pipe is closed so that by the action of the upper piston assembly (12A) fluid from the riser pipe is passed through the one-way valve (14B) in the delivery pipe to be delivered from this pipe. In addition to requiring no stuffing box, the total work input is performed during two separate strokes so that the maximum effort required of an operator is reduced. When the pump is used to deliver water to an elevated position, or under pressure, the delivery pipe is under pressure but the resultant flooding which might otherwise occur above the upper piston assembly (12A) due to water leaking past this piston assembly (12A) when both assemblies are stationary or operating at low speeds is prevented by the foot valve assembly (14B) at the foot of the delivery pipe (2).

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**F04B 47/024** (2013.01); **F04B 53/128** (2013.01)

Citation (search report)

- [X] FR 621275 A 19270509
- [YD] GB 730097 A 19550518 - JOHN B PILLIN LTD, et al
- [Y] FR 10882 E 19091021 - CHARLES CUAU [FR]
- [Y] GB 2070697 A 19810909 - POLYNERGIE 1980 INC
- [A] FR 1288221 A 19620324 - TECALEMIT SOCIETE

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