

Title (en)  
Pump

Title (de)  
Pumpe

Title (fr)  
Pompe

Publication  
**EP 0577936 B1 19981104 (DE)**

Application  
**EP 93106328 A 19930420**

Priority  
DE 9209117 U 19920709

Abstract (en)  
[origin: US5352103A] A pump comprises a pump casing having a pump channel, a pump element rotating in the pump channel, and a rotor shaft mounted in the pump casing and attached to the pump element. The pump element has a cylindrical outer periphery, and undulating surfaces in the axial direction. The opening in the casing which receives the rotor shaft has an annular groove in which there is disposed a spring loaded sealing element which bears slidably against a flat end face of the pump element when the pump element rotates. The sealing element is subjected to the pressure of superheated steam which is conducted to the sealing element via pressure channels in the pump casing connected to the annular groove. The rotor shaft includes radial and axial channels through which a coolant flows.

IPC 1-7  
**F04C 15/00**; **F04C 13/00**

IPC 8 full level  
**F04C 13/00** (2006.01); **F04C 15/00** (2006.01)

CPC (source: EP US)  
**F04C 15/0023** (2013.01 - EP US); **F04C 15/0038** (2013.01 - EP US); **F04C 15/0096** (2013.01 - EP US)

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**US 5352103 A 19941004**; DE 59309103 D1 19981210; DE 9209117 U1 19920827; EP 0577936 A1 19940112; EP 0577936 B1 19981104; ES 2123584 T3 19990116; HK 1019539 A1 20000211

DOCDB simple family (application)  
**US 6344993 A 19930518**; DE 59309103 T 19930420; DE 9209117 U 19920709; EP 93106328 A 19930420; ES 93106328 T 19930420; HK 98117620 A 19981228