

Title (en)  
Centrifugal pump and its housing.

Title (de)  
Kreispumpe und ihr Gehäuse.

Title (fr)  
Pompe centrifuge et son carter.

Publication  
**EP 0017829 A1 19801029 (DE)**

Application  
**EP 80101683 A 19800328**

Priority  
CH 332779 A 19790409

Abstract (en)  
[origin: US4349311A] The disclosure relates to a rotary pump especially for corrosive liquids including an impeller rotating in a working chamber. A spirally wound duct leads from one surface of the working chamber to the outlet pipe of the pump. The upstream end of the duct obliquely enters the working chamber, whereby the end portion of the duct is laterally open towards the chamber and forms a channel in the wall of the chamber. The duct winds helically around the rotation axis of the impeller, having an inside wall at a progressively decreasing radial distance from said rotation axis and a progressively increasing pitch when viewed in the direction of the flow. A feature is the provision of the wound duct in the form of a helix as an open groove formed on the outer surface of a solid stator body and closed by an encompassing casing. A further feature is the provision of a relatively loose, elongated drive shaft from a motor to the pump impeller disposed within a guide tube and a circumferential clearance between the shaft and the tube for leakage flow of liquid being pumped to lubricate the shaft wherein a bypass port is provided in the guide tube for return of the leakage flow upstream of a restriction in the clearance. The restriction increases pressure in the clearance to dampen lateral oscillation of the shaft in the tube. No seals are used for the shaft thereby precluding the tendency of seals to stick during prolonged rest periods.

Abstract (de)  
Die Pumpe besitzt einen Rotor (5), welcher sich in einem Arbeitsraum dreht. Rotor und Arbeitsraum sind, in Axialrichtung gesehen, an einem Ende (11) eingeschnürt und der Arbeitsraum geht an seinem anderen Ende in einen schneckenförmigen Gang (8) mit - in Strömungsrichtung (G) gesehen - Kleiner werdendem Radius und zunehmender Steigung über, dessen radiale Ausdehnung die lichte Weite des Arbeitsraumes nicht überschreitet.

IPC 1-7  
**F04D 29/42**; **F04D 29/44**

IPC 8 full level  
**E04D 13/08** (2006.01); **F04D 29/42** (2006.01); **F04D 29/44** (2006.01)

CPC (source: EP US)  
**E04D 13/08** (2013.01 - EP US); **F04D 29/4266** (2013.01 - EP US); **F04D 29/445** (2013.01 - EP US)

Citation (search report)

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- CH 599467 A5 19780531 - SIEMENS AG
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**EP 0017829 A1 19801029**; **EP 0017829 B1 19840613**; AT E7946 T1 19840615; CH 643918 A5 19840629; DE 3013138 A1 19801023; DE 3013138 C2 19920213; DK 140280 A 19801010; DK 148105 B 19850304; DK 148105 C 19891120; JP S55139998 A 19801101; NO 151979 B 19850401; NO 151979 C 19850710; NO 801003 L 19801010; US 4349311 A 19820914

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**EP 80101683 A 19800328**; AT 80101683 T 19800328; CH 332779 A 19790409; DE 3013138 A 19800403; DK 140280 A 19800401; JP 4671780 A 19800409; NO 801003 A 19800408; US 13508980 A 19800328