

Title (en)  
Thrust-balancing device

Title (de)  
Achsschubausgleich

Title (fr)  
Equilibrage de poussée axiale

Publication  
**EP 0952352 A3 20010530 (EN)**

Application  
**EP 99107770 A 19990419**

Priority  
JP 10972098 A 19980420

Abstract (en)  
[origin: EP0952352A2] A flow channel and pressure equalizing sections introduce a fluid having substantially no angular momentum into a thrust balance chamber of a thrust balance device. The introduction of this fluid reduces the angular momentum of the fluid in the thrust balance chamber, facilitating the discharge of fluid out of the thrust balance chamber through a variable orifice. The thrust balance chamber exerts a variable pressure onto a rear surface of an impeller of a centrifugal pump. This pressure prevents significant displacement of the impeller during pump operation. The result is a centrifugal pump having good thrust balance properties regardless of flow rate and impeller speed. <IMAGE>

IPC 1-7  
**F04D 29/04**

IPC 8 full level  
**F04D 29/04** (2006.01); **F04D 29/22** (2006.01)

CPC (source: EP KR)  
**F04D 29/0416** (2013.01 - EP); **F04D 29/2266** (2013.01 - EP); **F04D 29/66** (2013.01 - KR)

Citation (search report)

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- [A] US 5320482 A 19940614 - PALMER ALAN S [US], et al

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Designated contracting state (EPC)  
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**EP 0952352 A2 19991027; EP 0952352 A3 20010530; EP 0952352 B1 20041222**; CN 1120937 C 20030910; CN 1232928 A 19991027; DE 69922729 D1 20050127; DE 69922729 T2 20051201; KR 100295011 B1 20010712; KR 19990083231 A 19991125; TW 406166 B 20000921

DOCDB simple family (application)  
**EP 99107770 A 19990419**; CN 99105578 A 19990414; DE 69922729 T 19990419; KR 19990013435 A 19990416; TW 88105939 A 19990414