

Title (en)

Use of a two-phase turbine in a hydrotreating process

Title (de)

Anwendung einer Zweiphasenturbine in einem Hydrobehandlungsverfahren

Title (fr)

Utilisation d'une turbine diphasique dans un procédé d'hydrotraitement

Publication

EP 1505250 B1 20101006 (FR)

Application

EP 04291934 A 20040728

Priority

FR 0309620 A 20030804

Abstract (en)

[origin: EP1505250A1] A fluid with a liquid proportion greater than or equal to 95% at a pressure P1 is expanded across a single-phase turbine to obtain a fluid with a liquid proportion less than or equal to 5% at a pressure P2. The second fluid is expanded again through a two- phase turbine to obtain a fluid at pressure P3. The two-phase turbine is a rotodynamic turbine. The single phase and two-phase turbines form a single machine with at least one single phase impulsor and distributor and at least one two-phase impulsor and distributor. The turbines, impulsors and distributors share a common shaft. Before the first expansion, part of the high pressure fluid is taken and expanded in a first device, then the rest of the fluid is expanded in a second device before entering the single-phase turbine. The low pressure fluid from the two- phase turbine is expanded in a third device. The first, second and third devices are expansion valves or turbines.

IPC 8 full level

E21B 43/00 (2006.01); **F02C 1/02** (2006.01); **C10G 45/00** (2006.01); **C10G 45/02** (2006.01); **C10G 47/00** (2006.01); **F04D 31/00** (2006.01)

CPC (source: EP US)

C10G 45/00 (2013.01 - EP US); **C10G 47/00** (2013.01 - EP US); **F04D 31/00** (2013.01 - EP US)

Designated contracting state (EPC)

DE GB IT

DOCDB simple family (publication)

EP 1505250 A1 20050209; **EP 1505250 B1 20101006**; DE 602004029424 D1 20101118; FR 2858668 A1 20050211; FR 2858668 B1 20050923; JP 2005054800 A 20050303; US 2005029165 A1 20050210; US 7384541 B2 20080610

DOCDB simple family (application)

EP 04291934 A 20040728; DE 602004029424 T 20040728; FR 0309620 A 20030804; JP 2004227752 A 20040804; US 90943004 A 20040803