

Title (en)  
Mixer, heat exchanger

Title (de)  
Mischer/Wärmeaustauscher

Title (fr)  
Mélangeur, échangeur de chaleur

Publication  
**EP 1384502 A1 20040128 (DE)**

Application  
**EP 03015959 A 20030714**

Priority  
DE 10233506 A 20020724

Abstract (en)

The combined static mixer and heat exchanger has a housing (6) with heat exchange pipes (1) with projecting blades (2a,2b) at their circumference, which act as static mixers in at least two parallel levels. The blades are offset from each other by an angle ( $\alpha$ ) of 45-135 degrees and especially 70-110 degrees around the pipe axes. The blades are pitched an angle ( $\beta$ ) to the material flow direction of +/-10 degrees to +/-80 degrees.

Abstract (de)

Es wird eine Kombination von statischem Mischer und Wärmetauscher zur verfahrenstechnischen Behandlung empfindlicher viskoser Medien beschrieben. Der Mischer weist Wärmetauscherrohre (1) auf, die auf ihrem Umfang mit Stegen (2a, 2b) versehen sind, die eine statische Mischwirkung ausüben. <IMAGE>

IPC 1-7  
**B01F 5/06; F28F 13/06; F28F 9/22**

IPC 8 full level  
**F28D 7/16** (2006.01); **B01F 23/47** (2022.01); **F28D 7/00** (2006.01); **F28F 9/22** (2006.01); **F28F 13/06** (2006.01)

CPC (source: EP US)

**B01F 23/47** (2022.01 - EP US); **B01F 25/4316** (2022.01 - EP US); **B01F 35/93** (2022.01 - EP US); **F28D 7/0058** (2013.01 - EP US); **F28F 9/22** (2013.01 - EP US); **F28F 13/06** (2013.01 - EP US); **B01F 2215/0422** (2013.01 - EP US); **B01F 2215/0495** (2013.01 - EP US)

Citation (search report)

- [X] EP 1067352 A1 20010110 - FLUITEC GEORG AG [CH]
- [AD] DE 2839564 A1 19800320 - HOECHST AG
- [A] US 6412975 B1 20020702 - SCHUCHARDT HEINRICH [DE], et al
- [A] BE 465451 A

Cited by

EP2851118A1; US8536356B2; EP2865503A1; CN113916037A; CN112179176A; FR2929856A1; US2011071308A1; WO2009021930A1; WO2009127596A1; WO2009027212A1; DE102011085944A1; US8119708B2; US8153735B2; EP3489603A1; US11085710B2; WO2024052189A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

**EP 1384502 A1 20040128; EP 1384502 B1 20060111**; AT E315434 T1 20060215; DE 10233506 A1 20040212; DE 10233506 B4 20041209; DE 50302165 D1 20060406; ES 2256622 T3 20060716; JP 2004058058 A 20040226; JP 4430347 B2 20100310; US 2004085853 A1 20040506; US 7220048 B2 20070522

DOCDB simple family (application)

**EP 03015959 A 20030714**; AT 03015959 T 20030714; DE 10233506 A 20020724; DE 50302165 T 20030714; ES 03015959 T 20030714; JP 2003201315 A 20030724; US 62262503 A 20030718