

Title (en)  
Fluid mixing apparatus

Title (de)  
Flüssigkeitsmischvorrichtung

Title (fr)  
Appareil de mélange de fluides

Publication  
**EP 1894618 B1 20090826 (EN)**

Application  
**EP 07019313 A 20031024**

Priority  
• EP 03811311 A 20031024  
• US 29456302 A 20021115

Abstract (en)  
[origin: WO2004045753A1] A mixer apparatus for use with a vessel centered about a longitudinal axis is disclosed. The mixer has a blade body is formed along a central head axis. The blade body has a first end, a second end spaced from the first end along the head axis, and a passageway extending between the first and second ends. The passageway tapers from the first end to the second end. The outer surface of the blade body defines an inside blade diameter "ID" at the second end and an outside blade diameter "OD" at the first end. The blade body is positioned within and coaxial to the vessel. A scotch yoke, operatively connected to the blade body by a shaft, effects reciprocating longitudinal movement of the blade body through a stroke "S", with a duration "T" for each stroke. Enhanced mixing efficiencies are achieved when the mixer is operated within a set of operational parameters defined by the equation:  $80 \leq 0.36 \times OD^2 / ID^2 \times S / T \leq 550$ , when OD, ID and S are expressed in inches, and T is expressed in minutes.

IPC 8 full level  
**B01F 15/00** (2006.01); **B01F 11/00** (2006.01); **B03D 1/16** (2006.01)

CPC (source: EP US)  
**B01F 31/441** (2022.01 - EP); **B01F 31/449** (2022.01 - EP); **B01F 35/325** (2022.01 - EP); **B01F 35/55** (2022.01 - EP US); **B03D 1/028** (2013.01 - EP); **B03D 1/1462** (2013.01 - EP); **B03D 1/16** (2013.01 - EP); **B01F 2215/0409** (2013.01 - EP)

Cited by  
US9675944B2; TWI457509B

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)  
**WO 2004045753 A1 20040603**; AT E393662 T1 20080515; AT E440660 T1 20090915; AU 2003275848 A1 20040615; CA 2549983 A1 20040603; CA 2549983 C 20071120; CA 2596287 A1 20040603; CA 2596287 C 20090825; CA 2596395 A1 20040603; CA 2596395 C 20100406; DE 60320674 D1 20080612; DE 60320674 T2 20090702; DE 60328548 D1 20090903; DE 60329043 D1 20091008; DK 1572337 T3 20080811; EP 1572337 A1 20050914; EP 1572337 B1 20080430; EP 1886724 A1 20080213; EP 1886724 B1 20090722; EP 1894618 A1 20080305; EP 1894618 B1 20090826; ES 2305571 T3 20081101; PT 1572337 E 20080611

DOCDB simple family (application)  
**CA 0301629 W 20031024**; AT 03811311 T 20031024; AT 07019313 T 20031024; AU 2003275848 A 20031024; CA 2549983 A 20031024; CA 2596287 A 20031024; CA 2596395 A 20031024; DE 60320674 T 20031024; DE 60328548 T 20031024; DE 60329043 T 20031024; DK 03811311 T 20031024; EP 03811311 A 20031024; EP 07019312 A 20031024; EP 07019313 A 20031024; ES 03811311 T 20031024; PT 03811311 T 20031024