

Title (en)
Detonative cleaning apparatus

Title (de)
Detonative Reinigungsvorrichtung

Title (fr)
Appareil de nettoyage détonatif

Publication
EP 1987895 A1 20081105 (EN)

Application
EP 08251552 A 20080429

Priority
US 80032907 A 20070504

Abstract (en)
An apparatus (22) is provided for cleaning a surface within a vessel (20). A vessel wall separates a vessel exterior from a vessel interior and has a wall aperture. The apparatus comprises an elongate conduit (26) having an upstream first end (28) and a downstream second end (30). The conduit (26) is positioned to direct a shock wave from the second end (30) into the vessel interior. A source (32,34) of fuel and oxidizer is coupled to the conduit (26) to deliver the fuel and oxidizer to the conduit (26). An initiator is positioned to initiate a combustion of the fuel and oxidizer. The conduit (26) comprises a first portion (50) and a second portion (52) downstream of the first portion (50). The second portion (52) is extensible and contractible relative to the first portion (50) to selectively position the second end (30) at a desired location within the vessel (20). The conduit downstream end (30) comprises a centerbody (72) positioned to direct the shock wave essentially axisymmetrically.

IPC 8 full level
B08B 7/00 (2006.01)

CPC (source: EP US)
B08B 7/0007 (2013.01 - EP US); **F23J 3/023** (2013.01 - EP US); **F27D 1/1694** (2013.01 - EP US); **F28G 7/00** (2013.01 - EP US); **F28G 7/005** (2013.01 - EP US)

Citation (applicant)
• US 7011047 B2 20060314 - AARNIO MICHAEL J [US], et al
• US 2005112516 A1 20050526 - AARNIO MICHAEL J [US], et al
• US 5494004 A 19960227 - HUNTER JR LOUIS G [US]
• US 2004107858 A1 20040610 - ZILKA FRANCIS [US], et al
• US 5430691 A 19950704 - FRIDMAN IGOR [IL]
• "Journal of Engineering for Gas Turbines and Power", TRANSACTIONS OF THE ASME, vol. 1, no. 116, January 1994 (1994-01-01), pages 223 - 236

Citation (search report)
• [A] US 5494004 A 19960227 - HUNTER JR LOUIS G [US]
• [A] US 2005112516 A1 20050526 - AARNIO MICHAEL J [US], et al
• [A] US 2004107858 A1 20040610 - ZILKA FRANCIS [US], et al
• [A] US 5430691 A 19950704 - FRIDMAN IGOR [IL]
• [A] US 2006272684 A1 20061207 - STEUR FRANS JR [DE]
• [A] US 1767281 A 19300624 - HENRY GARRISON GEORGE

Cited by
WO2013014097A1; CH707256A1; DE102011015252A1; EP2548662A1; CN102322643A; CN107131512A; JP2022073546A; GB2494517A; GB2494517B; US9636717B2; US10065220B2; US8651066B2; JP2016511688A; KR20160042806A; AU2014214477B2; EA031744B1; JP2019195808A; EP3753641A1; WO2014094190A1; WO2014121409A1

Designated contracting state (EPC)
DE GB

Designated extension state (EPC)
AL BA MK RS

DOCDB simple family (publication)
EP 1987895 A1 20081105; CN 101298969 A 20081105; US 2008271685 A1 20081106

DOCDB simple family (application)
EP 08251552 A 20080429; CN 200810125893 A 20080504; US 80032907 A 20070504