

Title (en)

Combustor swirler with twisted vanes

Title (de)

Verwundene Drallschaufeln für eine Brennkammer

Title (fr)

Virile avec des aubes tordues pour chambre de combustion

Publication

EP 0902237 A3 20000920 (EN)

Application

EP 98116591 A 19980902

Priority

JP 24547797 A 19970910

Abstract (en)

[origin: EP0902237A2] Pre-mixture forming swirler in gas turbine pre-mixed flame type low NO_x combustor is improved so as to accelerate mixing of fuel and air and to prevent occurrence of flame stagnation and burning of component. Three-dimensional swirler is constructed such that swirler vane (101a) is twisted from hub side thereof to tip side so that fitting angle (beta) of the tip side relative to fuel nozzle (102) center axis (C) is larger than that (alpha) of the hub side. Thereby, while the angle (alpha) of the hub side is set smaller so that flame stagnation and burning of components resulted therefrom may be prevented from occurring, the angle (beta) of the tip side may be selected so that shearing flow necessary for appropriate mixing of fuel (F) and air (A) is obtained, thus favorable pre-mixing is done, life deterioration due to the burning etc. is prevented and combustion efficiency is enhanced. <IMAGE>

IPC 1-7

F23R 3/14

IPC 8 full level

F23R 3/14 (2006.01); **F23R 3/20** (2006.01); **F23R 3/32** (2006.01)

CPC (source: EP)

F23R 3/14 (2013.01)

Citation (search report)

- [X] WO 8906307 A1 19890713 - SUNDSTRAND CORP [US]
- [X] US 2798661 A 19570709 - WILLENBROCK JR ARTHUR, et al
- [X] US 4221558 A 19800909 - SANTISI HARRY C
- [A] EP 0397046 A2 19901114 - MITSUBISHI HEAVY IND LTD [JP]
- [A] US 5186607 A 19930216 - YANG SHYH-CHING [TW], et al
- [A] US 1931692 A 19331024 - GOOD PAUL E
- [A] US 4695225 A 19870922 - HELLAT JAAN [CH], et al

Cited by

EP1985924A1; EP2728260A1; EP2728261A1; CN103807879A; US7360363B2; US9557061B2; US7753677B2; KR20170003053A; KR20170003050A; WO03006887A1; WO2008128955A1; WO2004025183A3

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

EP 0902237 A2 19990317; **EP 0902237 A3 20000920**; **EP 0902237 B1 20031203**; CA 2246219 A1 19990310; CA 2246219 C 20021119; DE 69820183 D1 20040115; DE 69820183 T2 20040826; JP H1183016 A 19990326

DOCDB simple family (application)

EP 98116591 A 19980902; CA 2246219 A 19980902; DE 69820183 T 19980902; JP 24547797 A 19970910