

Title (en)

COMBUSTION DEVICE AND METHOD FOR OPERATING A COMBUSTION DEVICE FOR LOW-NO_x? AND LOW-CO COMBUSTION

Title (de)

BRENNEREINRICHTUNG UND VERFAHREN ZUM BETREIBEN EINER BRENNEREINRICHTUNG FÜR EINE NO_x?- UND CO-ARME VERBRENNUNG

Title (fr)

BRULEUR ET PROCEDE DE FONCTIONNEMENT D'UN BRULEUR DESTINE A UNE COMBUSTION PAUVRE EN NO_x? ET EN CO

Publication

EP 0834040 A1 19980408 (DE)

Application

EP 97924865 A 19970418

Priority

- DE 9700817 W 19970418
- DE 19615761 A 19960420

Abstract (en)

[origin: US2001018171A1] There exists a tendency in the construction of combustion devices to employ a multi-level, spatially distributed feed of the combustion air in order to be able to better influence the stoichiometric ratios during the combustion. These solutions are little suited for the compact construction and, in addition, the flame temperature is too high in the region of the air feed relative to a low NO_x combustion if one does not employ expensive constructions with additional cooling bodies. These problems are avoided if the combustion air is fed into the combustion zone by means of one or several combustion-air distributor bodies (7) in the inner space of a largely hollow-cylindric-like space section, filled by the flame, along the entire or a large part of the length of the flame. For this purpose, a plurality of openings for the air exit are distributed over the contour of the combustion-air distributor body. In contrast, the fuel is introduced only in the region of the bottom part of the combustion-air distributor bodies, i.e. in the region of the base of the flame, by means of at least one nozzle row (12) including several fuel nozzles, wherein the nozzle row is disposed around the combustion-air distributor bodies. It has proven to be particularly effective for an optimum preservation of the predetermined value regions of the air number lambda if the jet-flow direction of the fuel nozzles within the same nozzle row and/or the jet-flow direction of the fuel nozzles of neighboring nozzle rows are directed to different longitudinal regions of the combustion-air distributor bodies. The admixture of small amounts of air to the fuel leads to a strong dilution of the flame and to a drastic decrease of the NO_x and CO emission.

IPC 1-7

F23C 7/00; **F23D 14/22**

IPC 8 full level

F23C 7/00 (2006.01); **F23D 14/20** (2006.01); **F23D 14/22** (2006.01)

CPC (source: EP US)

F23C 7/00 (2013.01 - EP US); **F23D 14/20** (2013.01 - EP US); **F23C 2201/20** (2013.01 - EP US); **F23D 2205/00** (2013.01 - EP US)

Citation (search report)

See references of WO 9740315A1

Citation (third parties)

Third party :

- EP 0619459 A1 19941012 - SHRINKFAST MARKETING [US]
- DE 4002237 A1 19910801 - ELCO ENERGIESYSTEME GMBH [DE]

Cited by

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US 2001018171 A1 20010830; **US 6419480 B2 20020716**; AT E195367 T1 20000815; DE 19717721 A1 19971030; DE 59702133 D1 20000914; EP 0834040 A1 19980408; EP 0834040 B1 20000809; ES 2151273 T3 20001216; WO 9740315 A1 19971030

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