

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 430 376 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **90203134.3**(51) Int. Cl.⁵: **F23C 6/04, F23C 9/00**(22) Date of filing: **27.11.90**(30) Priority: **01.12.89 NL 8902963**(43) Date of publication of application:
05.06.91 Bulletin 91/23(84) Designated Contracting States:
DE FR GB IT NL(88) Date of deferred publication of the search report:
15.01.92 Bulletin 92/03(71) Applicant: **INTERNATIONAL FLAME
RESEARCH FOUNDATION
P.O. Box 10.000
NL-1970 CA IJmuiden(NL)**(72) Inventor: **Knill, Kevin James
197 Pinegrove Cres.
Waterloo, Ontario, N2L 4VZ(CA)**(74) Representative: **Wentzel, Hendrik Cornelis et
al
Hoogovens Groep B.V. P.O. Box 10.000
NL-1970 CA IJmuiden(NL)**(54) **Method for the combustion of fuel by stepped fuel feed and burner for use with it.**

(57) To lower NO_x production in a stepped fuel feed combustion method, secondary fuel (15) is injected into a combustion chamber as a jet through an internal recirculation zone of the primary combustion zone (6) to a secondary combustion zone (8). The stoichiometry of the system up to and including the

secondary combustion zone is preferably 0.70 to 0.90. A burner adapted for such a method is also disclosed, which has a duct for secondary fuel (15) concentrically within an inner annular duct (13) for primary fuel and an outer annular duct (14) for primary air.

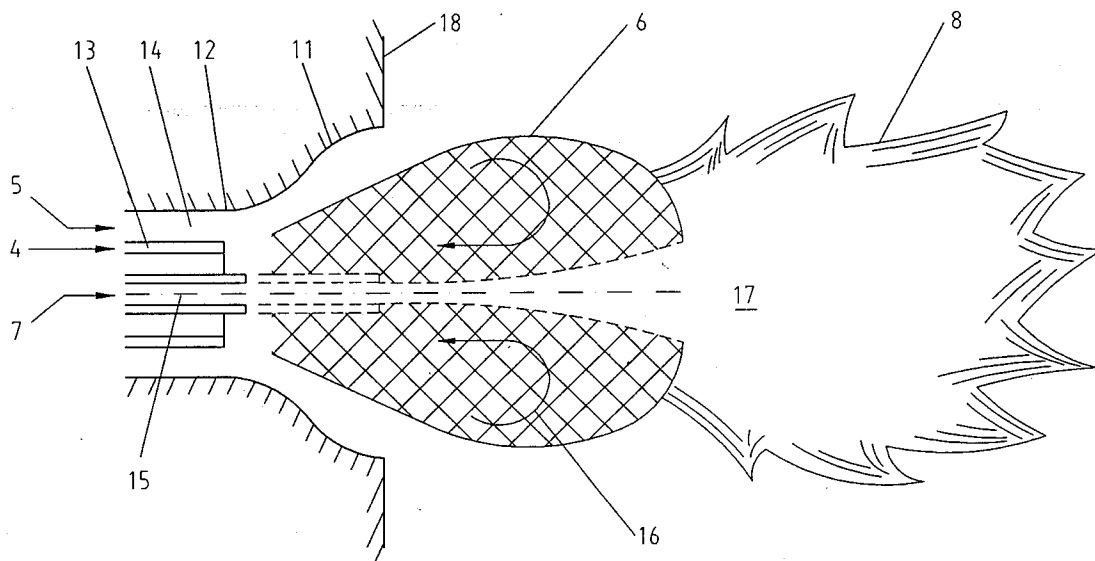


FIG. 3

EP 0 430 376 A3



European
Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 20 3134

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y,D	GB-A-2 146 113 (STEINMULLER) * Abstract; page 1, lines 6 - 12 *** page 2, line 104 - page 3, line 6 *** figure ** - - -	1,6,7	F 23 C 6/04 F 23 C 9/00
Y,D	US-A-4 265 615 (MARKOWSKI) * Abstract; column 2, lines 44 - 51 *** column 3, line 14 - column 4, line 36; figures 1,2 ** - - -	1,6,7	
A	PATENT ABSTRACTS OF JAPAN vol. 13, no. 100 (M-805)(3448) 9 March 1989 & JP-A-63 290 306 (BABCOCK HITACHI) 28 November 1988 * abstract ** - - -	1,6,7	
A	DE-A-3 206 074 (KOERTING) * page 19, line 13 - page 20, line 28; figures 9,13 ** - - -	7	
A	DE-A-3 446 788 (STEINMUELLER) * page 2, line 18 - page 3, line 22; figure 1 ** - - -	7	
A	PATENT ABSTRACTS OF JAPAN vol. 6, no. 157 (M-150)(1035) 18 August 1982 & JP-A-57 074 506 (KAWASAKI JUKOGYO) 10 May 1982 * abstract ** - - -		TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	EP-A-0 076 036 (ZINK) - - -		F 23 C F 23 D F 23 R
A	EP-A-0 323 299 (PILLARD) - - -		
A	GB-A-2 050 594 (UNITED TECHNOLOGIES) - - - - -		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 08 November 91	Examiner PHOA Y.E.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			