



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

**EP 0 841 520 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**03.11.1999 Bulletin 1999/44**

(51) Int Cl.<sup>6</sup>: **F23R 3/10**

(43) Date of publication A2:  
**13.05.1998 Bulletin 1998/20**

(21) Application number: **97308248.0**

(22) Date of filing: **17.10.1997**

(84) Designated Contracting States:  
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE**  
Designated Extension States:  
**AL LT LV RO SI**

(72) Inventor: **Allen, John Guy**  
**Chipping Sodbury, Bristol BS17 6NS (GB)**

(74) Representative: **Chapman, Helga Claire**  
**Rolls-Royce plc**  
**Patents Department**  
**Moor Lane**  
**P.O. Box 31**  
**Derby DE24 8BJ (GB)**

(30) Priority: **07.11.1996 GB 9623195**

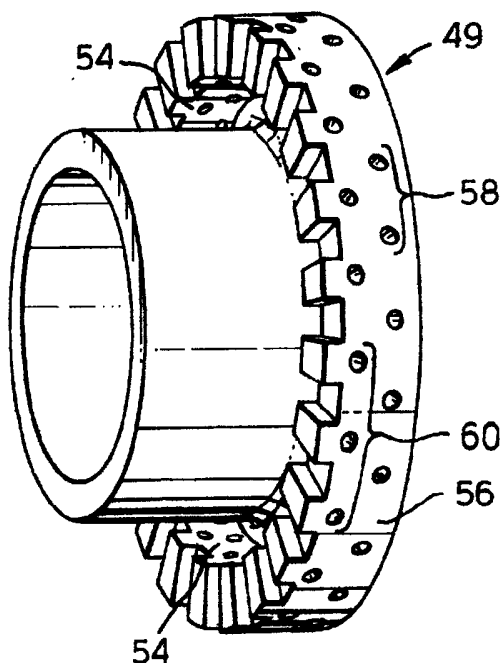
(71) Applicant: **ROLLS-ROYCE plc**  
**London, SW1E 6AT (GB)**

(54) **Gas turbine engine combustor**

(57) A combustor for a gas turbine engine has a fuel nozzle located in the upstream end thereof and is positioned within a cylinder coaxial with said nozzle. The cylinder comprises at its downstream end an annular

flange extending from the cylinder in a generally radial direction. The flange has a plurality of cooling air apertures radially extending therethrough so as to direct cooling air along the face of an adjacent heatshield.

**Fig.3.**



**EP 0 841 520 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 97 30 8248

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.6)
X	US 4 914 918 A (SULLIVAN DENNIS J) 10 April 1990 (1990-04-10) * figures *	1-9	F23R3/10
X	DE 44 27 222 A (BMW ROLLS ROYCE GMBH) 8 February 1996 (1996-02-08) * figures *	1-9	
X	DE 195 08 111 A (BMW ROLLS ROYCE GMBH) 12 September 1996 (1996-09-12) * figures *	1,2,5-7, 9	
X	US 4 934 145 A (ZEISSER MELVIN H) 19 June 1990 (1990-06-19) * figure 1 *	1,2,4-6, 9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			F23R
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>16 September 1999</b>	Examiner <b>Raspo, F</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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  &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 97 30 8248

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-09-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4914918 A	10-04-1990	NONE	
DE 4427222 A	08-02-1996	CA 2196310 A DE 59503631 D WO 9604510 A EP 0774100 A	15-02-1996 22-10-1998 15-02-1996 21-05-1997
DE 19508111 A	12-09-1996	CA 2214691 A WO 9627765 A EP 0813669 A US 5894732 A	12-09-1996 12-09-1996 29-12-1997 20-04-1999
US 4934145 A	19-06-1990	FR 2637675 A GB 2223839 A, B	13-04-1990 18-04-1990

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82