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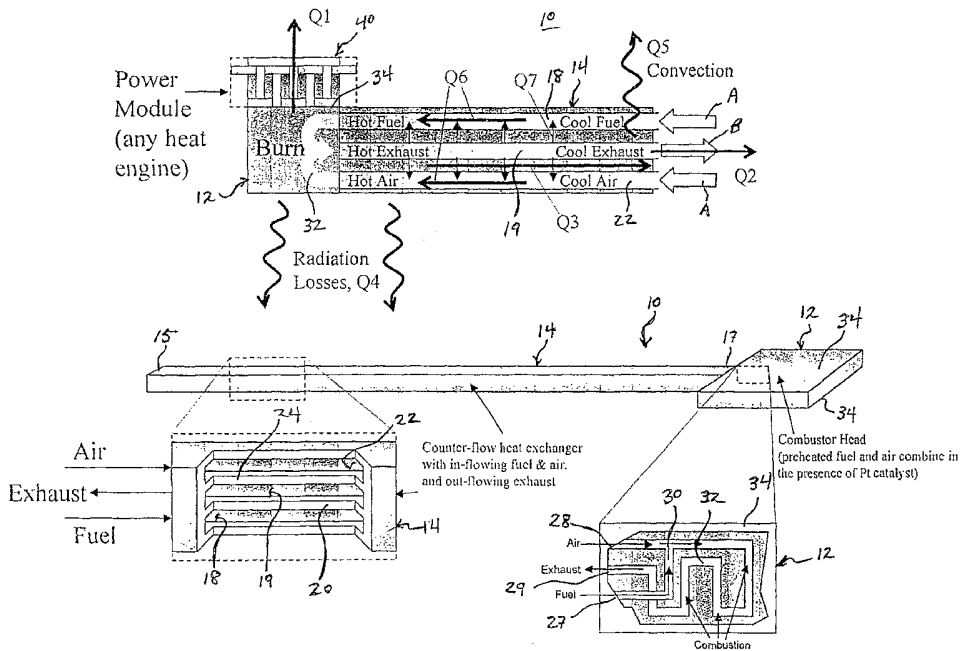
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(54) Title: COMBUSTOR WITH INTEGRATED COUNTER-FLOW HEAT EXCHANGER



(57) Abstract: A combustor includes a combustor head with an integrated counter-flow heat exchanger. The combustor head defines a combustion chamber and has a surface accessible for external delivery of thermal energy. The counter-flow inlet and a fuel outlet coupled to the combustion chamber, an exhaust channel extending between an exhaust inlet coupled to the combustion chamber and an exhaust outlet, and a shared wall between the fuel channel and the exhaust channel for transfer of thermal energy therebetween.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/22718

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **F23D 11/44**(2006.01)

USPC: 431/243,216,215

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 431/243, 216, 215, 247, 248, 11, 350, 354, 326, 328; 136/209; 165/163, 164, 165, 166; 432/178, 179, 180

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,525,325 A (PERL) 25 August 1970 (25.08.1970), see entire document.	1-4 and 9-12
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Y		5-8 and 13-23
Y	US 3,397,028 A (BRAUER) 13 August 1968 (13.08.1968), see entire document.	5, 6, 13, 14, 17-23
Y	US 6,193,501 B1 (MASEL et al) 27 February 2001 (27.02.2001), see entire document.	7, 15, and 23
Y	US 4,369,029 A (FORSTER et al) 18 January 1983 (19.01.1983), see entire document.	8 and 16
A	US 3,302,683 A (KEMP) 07 February 1967 (07.02.1967), see entire document.	1-23
A	US 5,529,484 A (MOARD et al) 25 June 1996 (25.06.1996), see entire document.	1-23

Further documents are listed in the continuation of Box C.



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"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 27 07 290 A1 (ROSENTHAL TECHNIK) 24 August 1978 (24.08.1978), see entire document.	1-23

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:
EAST searches
search terms: combustor and counter-flow or reverse near flow
PLUS search