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(71) Applicant: UNITED TECHNOLOGIES CORPORATION [US/US]; 1 Financial Plaza, Hartford, Connecticut 06101 (US).

(72) Inventor: BURD, Steven W.; 36 Renee Court, Cheshire, Connecticut 06410 (US).

(74) Agent: O'SHEA, Patrick; O'Shea Getz P.C. , 1500 Main Street, Suite 912, Springfield, MA 01115-5227 (US).

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(54) Title: ADDITIVE MANUFACTURED GAS TURBINE ENGINE COMBUSTOR LINER PANEL

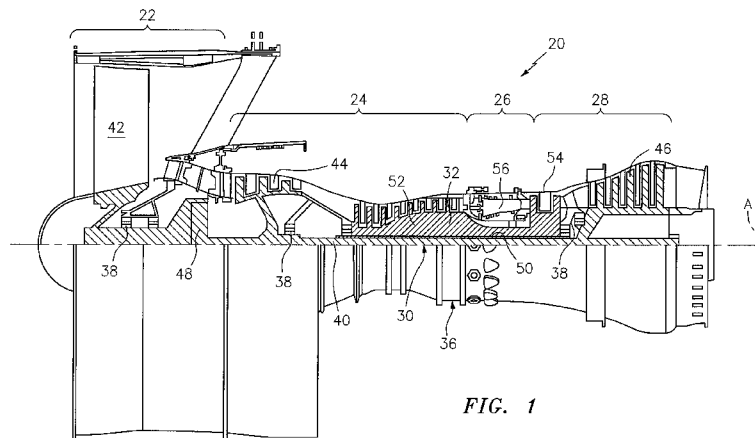


FIG. 1

(57) Abstract: A combustor of a gas turbine engine includes an additively manufactured liner panel with a heat transfer augmentation feature.



## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2014/028064****A. CLASSIFICATION OF SUBJECT MATTER****F23R 3/42(2006.01)i, F23M 5/04(2006.01)i, F02C 3/14(2006.01)i, F02C 7/24(2006.01)i**

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)

F23R 3/42; F02C 7/12; B05D 5/00; F02C 7/00; F02G 3/00; F23R 3/02; F23R 3/44; F02C 1/00; F23M 5/04; F02C 3/14; F02C 7/24

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: turbine engine, combustor, direct metal laser sintering, electron beam melting, additive manufacturing, and liner panel

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0011775 A1 (GARRY et al.) 21 January 2010 See abstract; paragraphs [0037]-[0042],[0063]; figures 1-4.	1-7,11-16,18
Y		8-10,17
Y	US 2013-0031904 A1 (GARRY, IAN M.) 07 February 2013 See abstract; paragraphs [0025],[0036]-[0043],[0046]; and figures 1-5.	8-10,17
A	US 2010-0095679 A1 (RUDRAPATNA et al.) 22 April 2010 See abstract; paragraphs [0025],[0027]; and figures 1-7.	1-18
A	US 2005-0086940 A1 (COUGHLAN, III et al.) 28 April 2005 See abstract; paragraphs [0017]-[0019]; and figures 1-4.	1-18
A	US 6,408,628 B1 (PIDCOCK et al.) 25 June 2002 See abstract; column 4, lines 17-54; and figures 1-11.	1-18

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"&amp;" document member of the same patent family

Date of the actual completion of the international search

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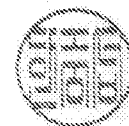
International Application Division  
Korean Intellectual Property Office  
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan City, 302-701,  
Republic of Korea

Facsimile No. +82-42-472-7140

Authorized officer

HAN, Joong Sub

Telephone No. +82-42-481-5606



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2014/028064**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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