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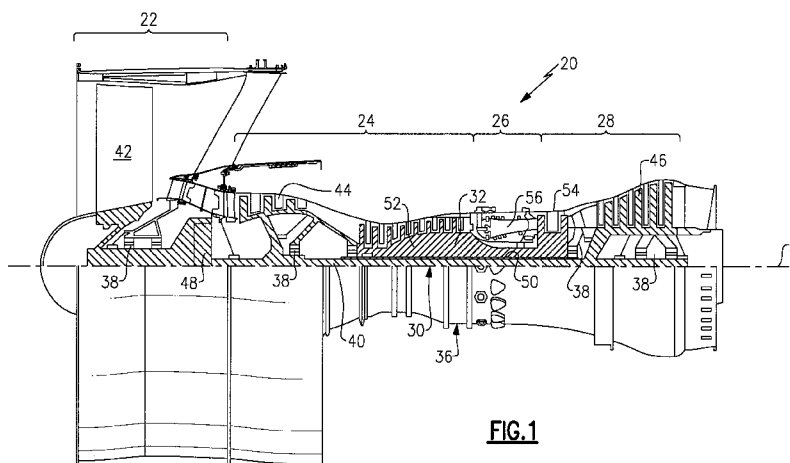


FIG. 1

(57) Abstract: A rotational component for a gas turbine engine includes at least one passage with a semi-spherical end.



**A. CLASSIFICATION OF SUBJECT MATTER****F01D 25/12(2006.01)i, F02C 7/12(2006.01)i, F01D 11/00(2006.01)i, F04D 29/58(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)

F01D 25/12; F02C 7/28; F16J 15/34; F01D 5/08; F16J 15/40; F01D 5/18; F01D 11/04; F02C 7/12; F01D 11/00; F04D 29/58

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: gas turbine, seal runner, rotational component, passage, and semi-spherical

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6688847 B2 (OYA et al.) 10 February 2004 See abstract, column 7, lines 9-61, and figure 2.	1,3-4,9,12-14
Y		2
A		5-8,10,11
Y	US 2011-0299984 A1 (GARRISON, GLENN M.) 08 December 2011 See abstract, paragraphs [0042], [0055], and figures 1, 3a.	2
A	US 2011-0049809 A1 (GARRISON, GLENN M.) 03 March 2011 See abstract, paragraphs [0042], [0044], and figures 4, 5.	1-14
A	US 2011-0068541 A1 (DURLING, CHRISTOPHER J.) 24 March 2011 See abstract, paragraphs [0018], [0019], and figure 1.	1-14
A	US 2009-0051120 A1 (MUNSELL et al.) 26 February 2009 See abstract, paragraph [0019], and figure 3.	1-14

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

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2013/068053**

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