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KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
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OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
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[Continued on next page]

(54) Title: GAS TURBINE OUTER CASE ACTIVE AMBIENT COOLING INCLUDING AIR EXHAUST INTO A SUB-AMBI-
ENT REGION OF EXHAUST FLOW

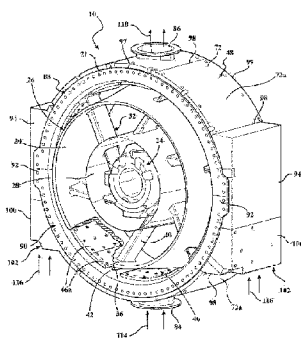
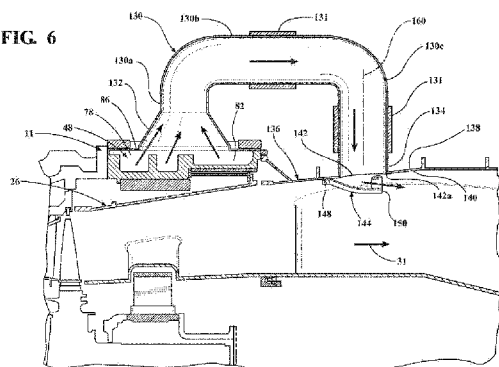


FIG. 2

(57) Abstract: A gas turbine engine including an outer case extending cir-
cumferentially around the central longitudinal axis. A cooling channel is as-
sociated with the outer surface of the outer case, the cooling channel having
a channel inlet and a channel outlet. An air duct is provided including an in-
let end in fluid communication with the channel outlet and an outlet end in
fluid communication with an exhaust gas flow from a turbine section of the
gas turbine engine. An exit structure is located at the air duct outlet end, and
the exit structure provides a sub-ambient pressure at the air duct outlet end to
induce a flow from the air duct inlet end to the air duct outlet end.

FIG. 6





TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

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

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 187 019 A1 (MITSUBISHI HEAVY IND LTD [JP]) 19 May 2010 (2010-05-19)	1-4,6-8, 10,11, 13-17
Y	page 1, column 2, paragraph 7 - paragraph 10; figures 2, 3 page 4, column 5, paragraph 26 - paragraph 30	5,9,12, 18,19
X	EP 2 261 468 A1 (MITSUBISHI HEAVY IND LTD [JP]) 15 December 2010 (2010-12-15)	1-4,6-8, 10,11, 13-17
Y	page 2, column 3, paragraph 11; figures 5, 6 page 4, column 8, paragraph 34 - paragraph 36 page 5, column 10, paragraph 43 ----- -/-	5,9,12, 18,19



Further documents are listed in the continuation of Box C.



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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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Y	EP 0 344 877 A1 (GEN ELECTRIC [US]) 6 December 1989 (1989-12-06) figure 8 -----	5
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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