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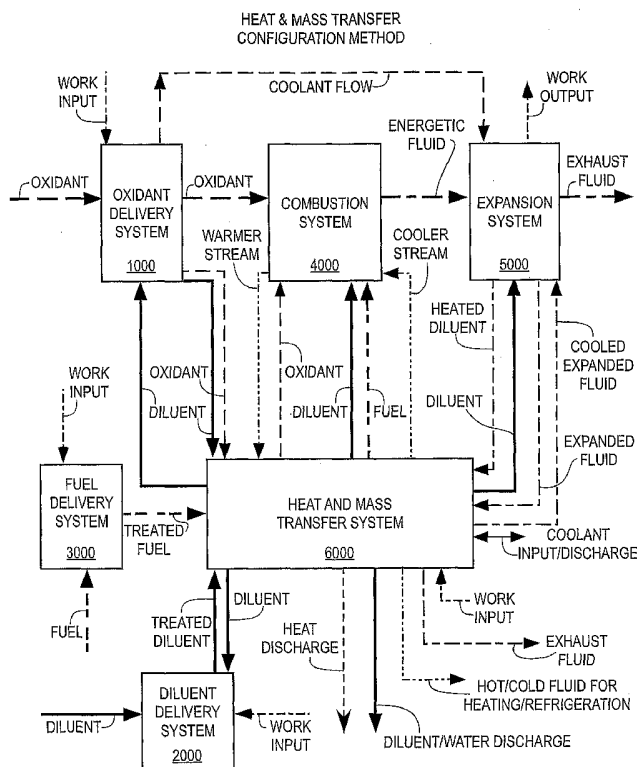
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[Continued on next page]

(54) Title: THERMODYNAMIC CYCLES USING THERMAL DILUENT



(57) Abstract: A thermodynamic system that produces mechanical, electrical power, and/or fluid streams for heating or cooling. The cycle contains a combustion system that produces an energetic fluid by combustion of a fuel with an oxidant. A thermal diluent may be used in the cycle to improve performance, including but not limited to power, efficiency, economics, emissions, dynamic and off-peak load performance, and/or turbine inlet temperature (TIT) regulation and cooling heated components. The cycle preferably includes a heat recovery system and a condenser or other means to recover and recycle heat and the thermal diluent from the energetic fluid to improve the cycle thermodynamic efficiency and reduce energy conversion costs. The cycle may also include controls for temperatures, pressures, and flow rates throughout the cycle, and controls power output, efficiency, and energetic fluid composition.



MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B60H 1/02

US CL : 237/12.1,2A2B

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. : 237/12.1,2A2B

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6810668 B2 (NAGATANI et al) 02 November 2004 (02.11.2004), entire document.	1-231
A	US 6073857 A (GORDON et al) 13 June 2000 (13..6.2000), entire document.	1-231
A	US 6053418 A (GUYER) 25 April 2000 (25.04.2000), entire document.	1-231
A	US 5226594 A (SWENSON) 13 July 1993 (13.07.1993), entire document.	1-231

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☐ See patent family annex.

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