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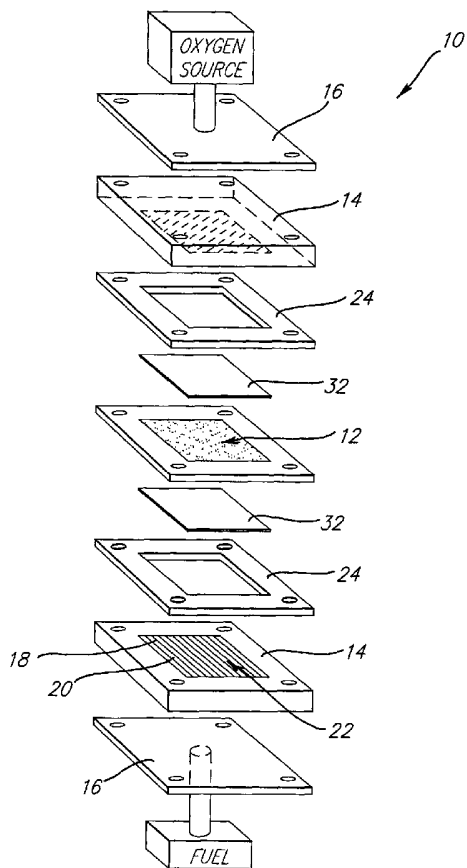
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[Continued on next page]

(54) Title: VARIABLE PRESSURE DROP STACK



(57) Abstract: A fuel cell stack having a plurality of fuel cells arranged adjacent one another and compressed together. At least one of the fuel cells has an electrode plate with a flow field formed therein, a proton exchange membrane and a compressible fluid-permeable diffusion media that is disposed adjacent the electrode plate. A compressing member is operable to vary a compression of the fuel cells during operation which varies an intrusion of the compressible diffusion media into the flow field in the adjacent electrode plate. The variation of the intrusion of the diffusion media into the flow fields allows the control of the pressure drop across the fuel cell stack and enables the fuel cell stack to be dynamically controlled so that a desired operational state is achieved.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, 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,

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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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

B. FIELDS SEARCHED

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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)
 EAST; USPATS; US-PGPUB: compress

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,419,980 A (OKAMOTO et al.) 30 May 1995, see col. 10, lines 9-19.	1, 2, 6-11, 19-21
Y	US 6,007,933 A (JONES) 28 December 1999, see col. 8, lines 20-25 and 48-51	1-2, 6-11, 19-21
A	US 5,185,220 A (SCHORA) 09 February 1993	1-21
A	US 4,973,531 A (ZAIMA et al.) 27 November 1990	1-21
A,P	US 6,663,996 B2 (GIBB et al.) 16 December 2003	1-21
A	US 6,428,921 B1 (GROT) 06 August 2002	1-21

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See patent family annex.

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