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Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
27 December 2013

(54) Title: A FUEL CELL ASSEMBLY

(57) Abstract: A fuel cell assembly comprising a plurality of fuel cell plates in a stack. The stack defines an air inlet face and/or an air outlet face; and two opposing engagement faces. The fuel cell assembly also comprises a detachable cover configured to releasably engage the two engagement faces in order to define an air chamber with the air inlet or outlet face.

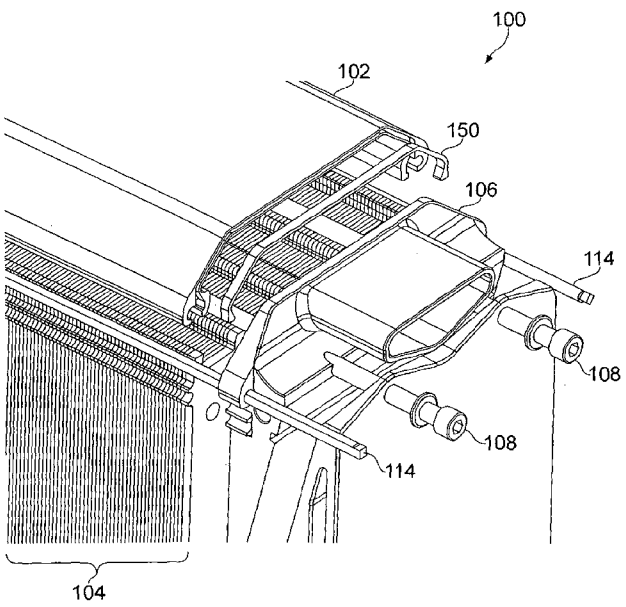


FIG. 1

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2013/051041

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01M8/24 H01M8/04
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)
H01M

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	US 2011/076588 A1 (YAMAURA KUNIHIRO [JP]) 31 March 2011 (2011-03-31)	1-6, 9-18,31, 32
A	figures 1-7 page 1, paragraph 0021 - page 2, paragraph 0024	7,8, 19-30

A	US 2006/234106 A1 (DUFFIELD MICHAEL [US] ET AL) 19 October 2006 (2006-10-19) figures 1-4 page 2, paragraph 0019 - page 3, paragraph 0026	1-32

A	EP 1 777 770 A1 (SAMSUNG SDI CO LTD [KR]) 25 April 2007 (2007-04-25) column 12, paragraph 0045 - column 14, paragraph 0049 figure 5	1-32

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 October 2013	04/11/2013

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Kelly, Michael

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2013/051041

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/112833 A1 (UTC FUEL CELLS LLC [US]; DARLING ROBERT M [US]; EVANS CRAIG E [US]; RE) 26 October 2006 (2006-10-26)	19-27, 29,30
Y	page 4, lines 11-18	28
A	page 9, line 32 - page 10, line 9 figures 1, 12	1-18,31, 32

A	US 4 212 929 A (GREVSTAD PAUL E [US] ET AL) 15 July 1980 (1980-07-15) figures 1-5 column 2, lines 14-51	1-32

A	JP S61 58175 A (SANYO ELECTRIC CO) 25 March 1986 (1986-03-25) abstract figures 1-5	1-32

Y	US 6 391 485 B1 (PERRY MICHAEL L [US]) 21 May 2002 (2002-05-21)	28
A	figure 1 column 3, lines 30-48	1-17, 29-32

Y	US 5 853 909 A (REISER CARL [US]) 29 December 1998 (1998-12-29)	28
A	figure 1 column 3, lines 21-32	1-17, 29-32

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2013/051041

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18, 31, 32

A fuel cell assembly comprising: a plurality of fuel cell plates in a stack, the stack defining: an air inlet face and/or an air outlet face; and two opposing engagement faces; and a detachable cover configured to releasably engage the two engagement faces in order to define an air chamber with the air inlet or outlet face.

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2. claims: 19-30

A fuel cell assembly, comprising: a plurality of fuel cell plates in a stack, the stack comprising a ventilation face; an air chamber cover configured to define an air chamber with the ventilation face; and a heat exchanger in fluid communication with the air chamber.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2013/051041

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