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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**:
7 March 2013

(54) **Title**: ELECTROLYTIC WATER PURIFICATION AND DISINFECTION SYSTEM AND METHOD OF USE

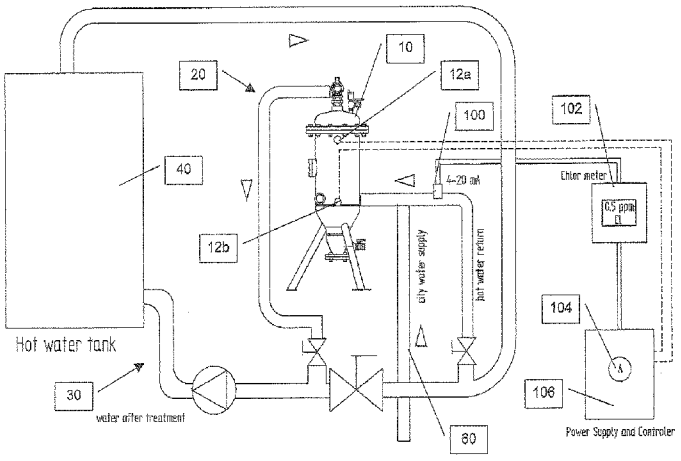


FIG. 2

(57) **Abstract**: A water purification and disinfection system for treating water in a substantially closed circulating water system, in which the water purification and disinfection system includes an electrolysis tank (10) deployed in a side branch (20) of a main flow path (30) of the substantially closed circulating water system in such a manner that substantially all the water in the substantially closed circulating water system passes through the electrolysis tank (10). Also disclosed is an electrode configuration for use in the electrolysis tank of a water purification and disinfection system. The electrode configuration includes positive and negative electrical contact bars extending into the electrolysis tank, and positive and negative electrodes deployed such that the positive electrodes are supported by both positive and negative electrical contact bars and are in electrical communication only with the positive electrical contact bar, and the negative electrodes are supported by both positive and negative electrical contact bats and are in electrical com - munication only with the negative electrical contact bar.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. C02F1/467
ADD. C02F103/02

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)
C02F F24D A61L E03C

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 1 024 115 A2 (BUTZKE WERKE AQUA [DE] AQUA BUTZKE GMBH [DE]) 2 August 2000 (2000-08-02) paragraphs [0023], [0024], [0026] - [0029]; figure -----	1-9
X	EP 1 626 034 A1 (BAUER THOMAS [DE]; BAUER GERHARD [DE]) 15 February 2006 (2006-02-15) paragraph [0041]; figure 2 -----	1-9
X	GB 2 348 945 A (DOUGLAS IND LIMITED [GB] DOUGLAS IND LTD [GB]) 18 October 2000 (2000-10-18) page 4, line 22 - line 30; figure page 6, line 3 - line 5 -----	1-9

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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
30 May 2012	16/01/2013

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	Beckmann, Oliver

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

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 196 53 696 A1 (BUTZKE WERKE AQUA [DE]) 25 June 1998 (1998-06-25) page 4, line 3 - line 65; figure page 5, line 12 - line 15 -----	1-9

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2012/050750

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1024115 A2	02-08-2000	DE 19859814 A1	21-06-2000
		EP 1024115 A2	02-08-2000
EP 1626034 A1	15-02-2006	AT 402120 T	15-08-2008
		DE 102004039232 A1	23-02-2006
		EP 1626034 A1	15-02-2006
GB 2348945 A	18-10-2000	NONE	
DE 19653696 A1	25-06-1998	NONE	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/050750

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.:

1-9

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: 1-9

   a water purification and disinfection system comprising an electrolysis tank in a side branch of a main flow path of a closed circulating water system and a feshwater inlet upstream of the electrolysis tank.

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2. claims: 10-13

   an electrode configuration for use in an electrolysis tank of a water purification and disinfection system comprising at least a first positive and at least a first negative contact bar, and at least a first positive and at least a first negative electrode which are supported by both contact bars.
