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CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ,
EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,

NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,
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MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR),
OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG).

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— of inventorship (Rule 4.17(iv))

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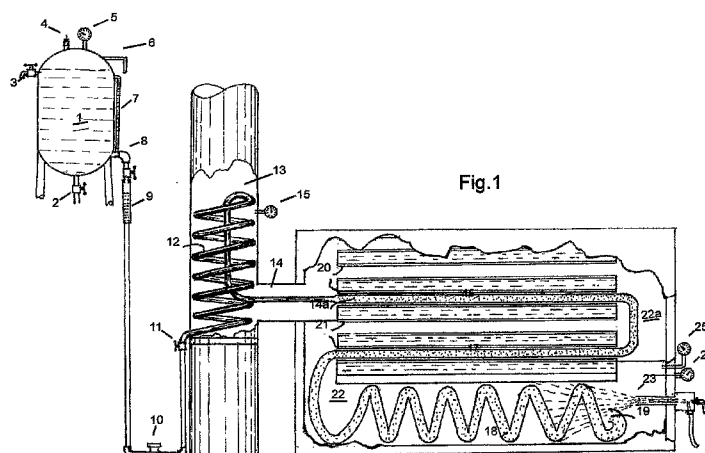
— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the
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amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

18 February 2010

(54) Title: METHOD AND DEVICE FOR DISSOCIATING WATER FOR BOILERS



(57) Abstract: A method and device for dissociating water into its constituent hydrogen and oxygen gases as fuel saver for boilers. The method utilizes the waste heat from boilers to pre-heat pressurized water in controlled flow through a stainless economizer tubing that is coiled around the inner wall of the chimney. The forward end of said coil is connected in fluid communication with a straight stainless super heater tubing that passes concentrically through the larger outer fire tube, make a u-turn toward the inner fire tube of said boiler, exit at the forward open end of said fire tube, connect in fluid communication with the coiled expansion tubing in the combustion chamber where the superheated steam expands and dissociates into hydrogen and oxygen gases between 710° F and 1200° F. The dissociated gases are released at the outlet port of said expansion chamber and directed at the base of the flame of the burning fuel to torch and cause complete combustion of the fossil fuel.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/PH2009/000004

A. CLASSIFICATION OF SUBJECT MATTER

F23K 5/08(2006.01)i, F23K 5/22(2006.01)i, F24H 9/18(2006.01)i

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)

F23K 5/08; F23C 1/00; F23C 1/08; F23C 99/00; F23D 11/20; F23D 21/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models since 1975.

Japanese utility models and applications for utility models since 1975.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

e-Kompass "hydrogen", "dissociate"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2006-0113169 A (TAEKYUNG KIM et al.) 02 November 2006 See Claim 1 and Figure 1.	1
A	See Claim 1 and Figure 1.	2
X	KR 10-2005-0078169 A (TAEKYUNG KIM et al.) 04 August 2005 See Claim 3 and Figure 1.	1
A	See Claim 1 and Figure 1.	2
X	KR 10-2006-0007494 A (DONGMIN CHOI) 26 January 2006 See Claim 1 and Figure 1.	1
A	See Claim 1 and Figure 1.	2
A	JP 2006-046765 A (BENTEN CO., LTD.) 16 February 2006 See Claims 1-3 and Figures 1, 2.	1,2

☐ Further documents are listed in the continuation of Box C.

☒ 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

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

08 DECEMBER 2009 (08.12.2009)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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member(s)

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KR 10-2006-0113169 A

02.11.2006

None

KR 10-2005-0078169 A

04.08.2005

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KR 10-2006-0007494 A

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JP 2006-046765 A

16.02.2006

None