



(51) International Patent Classification:
C01B 3/04 (2006.01)

(21) International Application Number:
PCT/PH2012/000008

(22) International Filing Date:
24 May 2012 (24.05.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12011000183 24 May 2011 (24.05.2011) PH

(72) Inventor; and

(71) Applicant : CELIS, Roberto, V. [PH/PH]; 21 Gold St.,
SSS Village, Marikina City (PH).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, 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,

KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

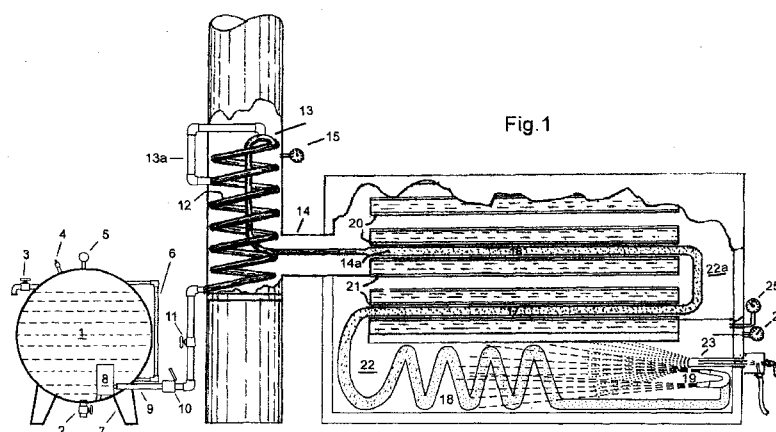
Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— without international search report and to be republished
upon receipt of that report (Rule 48.2(g))

(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 (hydrofuel) to be used as fuel and fuel enhancer to save fuel for boilers. The method utilizes the waste heat from a boiler 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, makes a U-turn toward the inner fire tube of said boiler, exits at the forward open end of said fire tube, connects in fluid communication with the coiled expansion tubing in the combustion chamber where the superheated steam expands and dissociates into hydrogen and oxygen gases (hydrofuel) between 710°F and 2500°F. The dissociated gases are released at the outlet port of said expansion piping that branches into smaller pipes with nozzles that are directed around the base of the burning fossil fuel in order to burn, torch and enhance complete combustion, save on fossil fuel and eliminate carbon emission.



METHOD AND DEVICE FOR DISSOCIATING WATER FOR BOILERS**TECHNICAL FIELD**

The present invention relates to a fuel saving method and device and more particularly to a method and device for dissociating water between 710°F and 2500°F into its constituent hydrogen gases (hydrofuel) to be used as supplemental fuel and fuel enhancer for boilers. Hydrofuel burns 7-times faster than fossil fuel and release high amount of heat upon combustion. It therefore torches and causes complete combustion, save fuel, near zero carbon emission to prevent global warming, save on maintenance and down-time losses, cleanse the combustion and exhaust system of carbon and soot and release oxygen to the environment.

The method consists of passing pressurized water in controlled flow through a coiled stainless economizer tubing around the inner wall of the chimney of said boiler in order to recover waste heat to preheat the water. The forward end of the coil is connected in fluid communication with the straight stainless super heater tubing that passes concentrically through the larger outer fire tube of the boiler, makes a U-turn and inters the larger straight inner fire tube of the boiler to super heat and exit at the open end of said fire tube and connects in fluid communication with a larger coiled stainless dissociation pipe in the combustion chamber of the boiler to discharge the super heated steam in order to dissociate into hydrogen and oxygen gases (hydrofuel) between 710°F and 2500°F therein. The dissociated hydrogen and oxygen gases are released at the outlet port of the coiled dissociation tube and directed around the base of the burning fuel in the combustion chamber of said boiler in order to burn, torch and enhance combustion of the fossil fuel.

Since hydrogen burns 7-times faster than fossil and fuel and release high amount of heat energy upon combustion, it therefore causes the fuel to burn completely, that results in saving fuel, near zero carbon emission to prevent global warming, cleanse the combustion chamber and exhaust system to save on maintenance expenses, down-time losses and release oxygen to the environment.

BACKGROUND OF THE INVENTION

In general, most fuel-saving devices are designed only for a particular kind of fuel, and some anti-pollution devices are suited only for a particular kind of fuel.

Accordingly, it is to the provision of a method and device for dissociating water into its constituent hydrogen and oxygen gases between 710°F and 2500°F to be used as supplemental fuel and fuel enhancer for boilers using any kind of fuel in order to burn, torch and cause complete combustion of the fossil fuel that results in saving fuel, near zero carbon emission to prevent global warming, cleanse the combustion and exhaust system to save on maintenance expenses, down-time losses and release oxygen to make the environment have healthy air.

OBJECTIVE

The primary objective of this invention is to save fuel by utilizing dissociated hydrogen and oxygen gases (hydrofuel) from water as supplemental fuel and as fuel enhancer for any type of boiler, using any kind of fuel.

Another objective of this invention is to use dissociated hydrogen and oxygen gases from water between 710°F and 2500°F as fuel enhancer for boilers in order to cause complete combustion of the fuel to prevent carbon emission, the main cause of global warming.

Still another objective is to save on maintenance expenses and down-time losses resulting from a clean combustion and exhaust systems due to complete fuel combustion.

Yet, another objective is to release oxygen from the chimney to make the environment healthy, prevent respiratory diseases and save on medical and hospitalization expenses.

BRIEF DESCRIPTION OF THE INVENTION

Fig. 1 is the right side cut-away view of the method and device for dissociating water into its constituents hydrogen and oxygen gases between 710°F and 2500°F for use as fuel supplemental and fuel enhancer for boiler is shown to include a high pressure water reservoir tank 1, drain plug 2, water supply pipe chamber of said boiler in order to dissociate into oxygen and hydrogen gases (hydrofuel), between 710°F and 2500°F. The dissociated hydrogen and oxygen gases are then released at the outlet port of said coiled pipe that branches into at least a pair of smaller pipes that are tapered and provided with heat resistant nozzle outlets, one directed to the left and the other to the right of the base of the burning fuel 23a that is released from the fuel burner 23 in the combustion chamber 22 of the said boiler in order to torch the fossil fuel. Since hydrogen and oxygen gases

(hydrofuel) burns 7-times faster than fossil fuels and release high amount of heat energy upon combustion, it therefore causes the fuel to burn almost completely that results in saving fuel, near zero carbon emission to prevent global warming, cleanses the inner linings of the combustion chamber, the inner linings of the fire tubes and the exhaust system that result in saving on maintenance expenses and down-time losses. Oxygen is released from the chimney, in order to provide the environment with clean and healthy air.

It should be understood that the just described embodiment merely illustrated the principle of the invention in one particular form. Many modifications, additions, deletions, may of course be made hereto without departure from the spirit of the invention as set forth in the following claims.

I claim:

1. A method of dissociating water into its constituent hydrogen and oxygen gases (hydrofuel), by efficiently utilizing the exhaust heat and combustion heat of a boiler using any kind of fuel, between 710°F and 2500°F.
2. A device for efficiently dissociating water into its constituent hydrogen and oxygen gases (hydrofuel), for use as supplemental fuel and fuel enhancer for boilers using any kind of fuel, consisting of the following:
 - a pressurized water supply tank with pressure pump that forces the water to flow through the piping system of the said device in order to absorb the heat from the out-going hot gases from the boiler,
 - a coiled stainless economizer tubing that is wound around the inner wall of the chimney of the boiler that is connected in fluid communication with the water supply pipe of the reservoir and the forward end of the said coil that is connected in fluid communication with the straight super heater tubing that passes concentrically through the larger outer fire tube and the larger inner fire tube of said boiler,
 - a straight stainless super heater tubing that is connected in fluid communication with the said economizer coil that enters and passes concentrically through the larger outer fire tube of said boiler, makes a U-turn and passes concentrically through the larger inner fire tube of the boiler in order for the water in said super heater tubing to absorb heat from the outgoing hot gases from the combustion chamber of the boiler, super heat, expand and dissociate into hydrogen and oxygen gases (hydrofuel);
 - a larger coiled stainless expansion piping in the combustion chamber of the boiler that is connected in fluid communication with the super heater tubing wherein, the super heated steam expands and dissociates into hydrogen and oxygen gases (hydrofuel), that releases at the outlet port between 710°F and 2500°F in said expansion pipe;
 - said outlet port of the expansion pipe is made to branch into at least a pair of smaller diameter outlet ports with heat-resistant constricted nozzles that cause the outgoing hydrofuel to exit at high speed in order to prevent premature ignition inside said expansion pipe;
 - said pairs of nozzles are directed around the base of the burning fuel inside the combustion chamber of said boiler in order to torch with intense heat in order to

enhance combustion of the fuel, thereby, save on fossil fuel, reduce emission to near zero, cleanse the inner lining of the combustion chamber of said boiler, cleanse the fire tube of carbon and soot that results in saving on maintenance and down-time losses and release oxygen to make the environment clean with healthy air;

- a water feed control system consisting of a water flow meter and a flow control valve;
- a water dissociation device for boilers wherein materials used are heat-resistant, preferably stainless steel.

