METHOD FOR THE PRODUCTION OF A FUEL GAS

Related Application

This is a continuation-in-part of my co-pending application Ser. No. 081,859, filed 8/5/87, now U.S. Pat. No. 4,826,581.

Field of Invention

This invention relates to a method of and apparatus for obtaining the release of a fuel gas mixture including hydrogen and oxygen from water.

BACKGROUND OF THE PRIOR ART

Numerous processes have been proposed for separating a water molecule into its elemental hydrogen and oxygen components. Electrolysis is one such process. Other processes are described in United States patents such as 4,344,831; 4,184,931; 4,023,545; 3,980,053; and Patent Cooperation Treaty application No. PCT/US80/1362, published 30 April, 1981.

OBJECTS OF THE INVENTION

It is an object of the invention to provide a fuel cell and a process in which molecules of water are broken down into hydrogen and oxygen gases, and a fuel gas mixture including hydrogen, oxygen and other gasses formerly dissolved within the water is produced. As used herein the term "fuel cell" refers to a single unit of the invention comprising a water capacitor cell, as hereinafter explained, that produces the fuel gas in accordance with the method of the invention. Brief Description of the Drawings

FIG. 1 illustrates a circuit useful in the process.

FIG. 2 shows a perspective of a "water capacitor"-'element used in the fuel cell circuit.

FIGS. 3A through 3F are illustrations depicting the theoretical bases for phenomena encountered during operation of the invention herein.

Description of the Preferred Embodiment

In brief, the invention is a method of obtaining the release of a gas mixture including hydrogen and oxygen and other dissolved gases formerly entrapped in water, from water consisting of: (A) providing a capacitor, in which the water is included as a dielectric liquid between capacitor plates, in a resonant charging choke circuit that includes an inductance in series with the capacitor; (B) subjecting the capacitor to a pulsating, unipolar electric voltage field in which the polarity does not pass beyond an arbitrary ground, whereby the water molecules within the capacitor are subjected to a charge of the same polarity and the water molecules are distended by their subjection to electrical polar forces; (C) further subjecting the water in said capacitor to said pulsating electric field to achieve a pulse frequency such that the Pulsating electric field induces a resonance within the water molecule; (D) continuing the application of the pulsing frequency to the capacitor cell after resonance occurs so that the energy level within the molecule is increased in cascading incremental steps in proportion to the number of pulses; (E) maintaining the charge of said capacitor during the application of the pulsing field, whereby the co-valent electrical bonding of the hydrogen and oxygen atoms within said molecules is destabilized such that the force of the electrical field applied, as the force is effective within the molecule, exceeds the bonding force of the molecule, and hydrogen and oxygen atoms are liberated from the molecule as elemental gases; and (F) collecting said hydrogen and oxygen gases, and any other gases that were formerly dissolved within the water, and discharging the collected gases as a fuel gas mixture.

The process follows the sequence of steps shown in the following Table I in which water molecules are subjected to increasing electrical forces. In an ambient state, randomly oriented water molecules are aligned with respect to a molecular polar orientation. They are next, themselves polarized and "elongated" by the application of an electric Potential to the extent that covalent bonding of the water molecule is so weakened that the atoms disassociate and the molecule breaks down into hydrogen and oxygen elemental components. Engineering design parameters based on known theoretical principles of electrical circuits determine the incremental levels of electrical and wave energy input required to produce resonance in the system whereby the fuel gas comprised of a mixture of hydrogen, oxygen, and the other gases such as air test were formerly dissolved within the water, is produced.

TABLE I

PROCESS STEPS THE SEQUENCE OF THE RELATIVE STATE OF THE WATER MOLECULE AND/OR HYDROGEN/OXYGEN/OTHER ATOMS:	
A.	(AMBIENT STATE) RANDOM
B.	ALIGNMENT OF POLAR FIELDS
C.	POLARIZATION OF MOLECULE
D.	MOLECULAR ELONGATION
E.	ATOM LIBERATION BY BREAKDOWN OF COVALENT BOND
F.	RELEASE OF GASES

In the process, the point of optimum gas release is reached at a circuit resonance. Water in the fuel cell is subjected to a pulsating, polar electric field produced by the electrical circuit whereby the water molecules are distended by reason of their subjection to electrical polar forces of the capacitor plates. The polar pulsating frequency applied is such that the pulsating electric field induces a resonance in the molecule. A cascade effect occurs and the overall energy level of specific water molecules is increased in cascading, incremental steps. The hydrogen and oxygen atomic gases, and other gas components formerly entrapped as dissolved gases in water, are released when the resonant energy exceeds the co-valent bonding force of the water molecule. A preferred construction material for the capacitor plates is a stainless steel T-304 which is non-chemically reactive with water, hydrogen, or oxygen. An electrically conductive material which is inert in the fluid environment is a desirable material of construction for the electrical field plates of the "water capacitor" employed in the circuit.

Once triggered, the gas output is controllable by the attenuation of operational parameters. Thus, once the frequency of resonance is identified, by varying the applied pulse voltage to the water fuel cell assembly, gas output is varied. By varying the pulse shape and/or amplitude or pulse train sequence of the initial pulsing wave source, final gas output is varied. Attenuation of the voltage field frequency in the form of OFF and ON pulses likewise affects output.

The overall apparatus thus includes an electrical circuit in which a water capacitor having a known dielec-