

A Practical Guide to 'Free Energy' Devices

Electrolysis Patents No 14: Last updated: 28th January 2006

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Please note that this is a re-worded excerpt from this patent. If the content interests you, then you should obtain a full copy from the www.freepatentsonline.com web site. This patent describes an electrolysis system which it is claimed has demonstrated ten times the efficiency that Faraday considered to be the maximum possible.

US Patent 4,105,528

8th August 1978

Inventor: Shigeta Hasebe

APPARATUS FOR DECOMPOSITION OF AQUEOUS LIQUID

ABSTRACT

An apparatus for decomposition of liquid, in which spiral negative and positive electrodes are arranged close together but not touching. These two electrodes are supplied with power through external terminals and the electrolyte is caused to flow between the negative and positive electrodes for the electrolysis between two electrodes under the function of the potential magnetic field formed by the coil current which is generated by the electrodes with active movement of an electrolytic ion so that the electrolysis of water takes place smoothly under the spin functions of the atom and electron.

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to an apparatus for decomposition of liquid where a flowing electrolyte is subjected to electrolysis for the production of gases.

As is well known, water is composed of hydrogen atoms and oxygen atoms. When water is sufficiently magnetised, each constitutive atom is also weakly magnetised to rotate the elementary particle in a regular direction. This rotation of the elementary particle is generally called "spin". That is, the spin function is caused by an electron, atomic nucleus, atom and even by the molecule. When a negative electrode is immersed in the electrolyte - Sodium Hydroxide ("lye" or NaOH) solution - with a view to applying a voltage to it in order to cause the elementary particle to react with the electric field, the coupling state of the hydrogen with the oxygen is varied and the electrolysis is facilitated by the spin.

In the present invention, spiral negative and positive electrodes are arranged close together but not touching and these two electrodes are supplied with power through external terminals and the electrolyte is caused to flow between the negative and positive electrodes. Thus, the electrolyte is subjected to the electrolysis between two electrodes while within a magnetic field formed by the coil current which is generated by the electrodes with active movement of an electrolytic ion (Na^+ , OH^-) so that the electrolysis of water takes place smoothly under the spin functions of the atom and electron.

It has been confirmed that the rate of the electrolysis of water using this invention is approximately 10 or more times (approximately 20 times when calculated) than that produced by conventional electrolysis.

The design of the electrolytic cell of this invention is such that the electrolyte flowing through the supply ports provided at the lower portion of the electrolytic cell is subjected to the magnetic field produced by a permanent magnet and the electrodes cause it to be further subjected to magnetic and electric fields which cause it to obtain a sufficient spin effect.

It is, therefore, a general object of the invention to provide a novel apparatus for decomposition of liquid in which an electrolyte (NaOH) solution is subjected to magnetic fields to cause electrolysis assisted by the spin of the water molecules which produces a great amount of gas with less consumption of electrical energy.

A principal object of the invention is to provide an apparatus for decomposition of liquid which has a liquid circulating system for the separation of gas and liquid in which positive and negative spiral electrodes are arranged across the flow path of the liquid and the opposite ends of the electrodes being provided with magnetic materials to augment the effect caused by the applied voltage across a liquid passing through a magnetic field caused by the positive and negative spiral electrodes, thereby to promote generation and separation of cat-ions and an-ions with a high efficiency in production of a large quantity of gases.

Other objects and advantages of the present invention will become apparent through the detailed description which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described more in detail in the following with reference to the accompanying drawings, wherein:

Fig.1 is a partially cross-sectional schematic elevation of an apparatus in accordance with the invention;

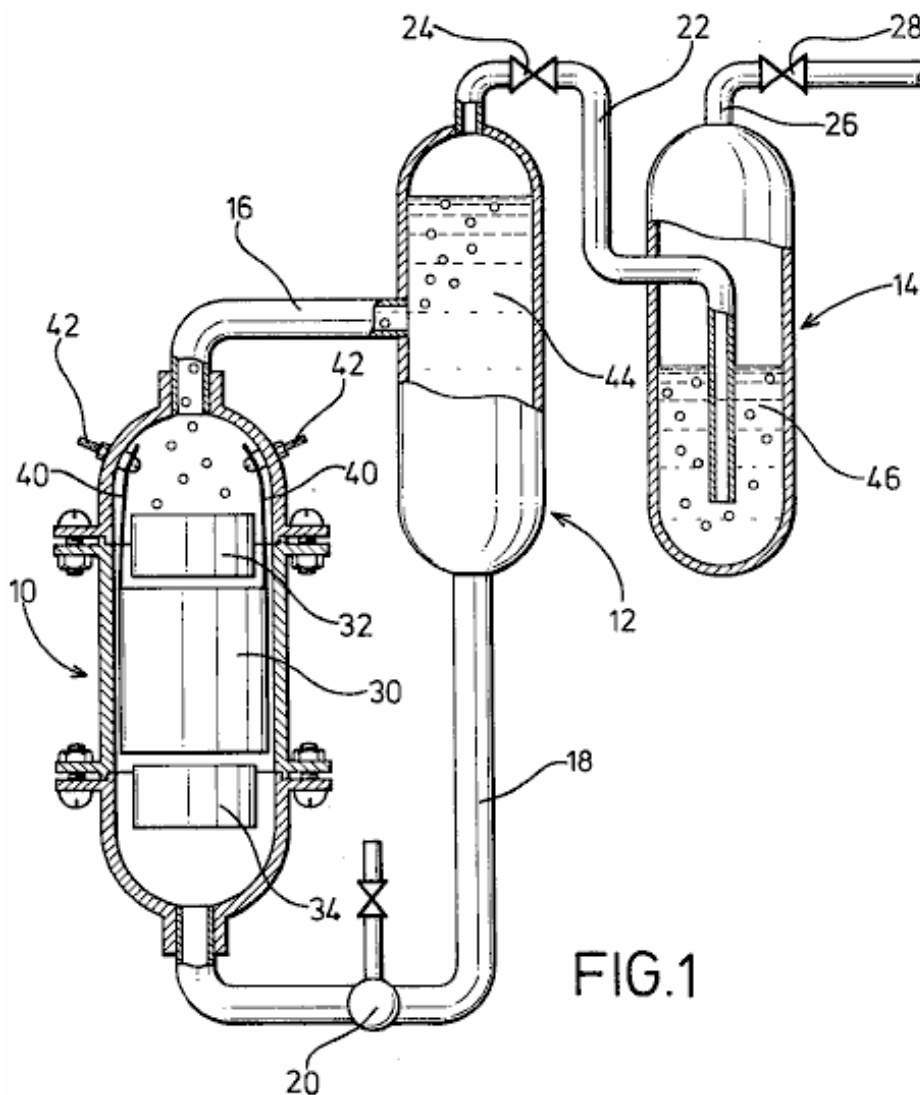


FIG.1

Fig.2 is a perspective view of electrodes arranged in accordance with the invention;

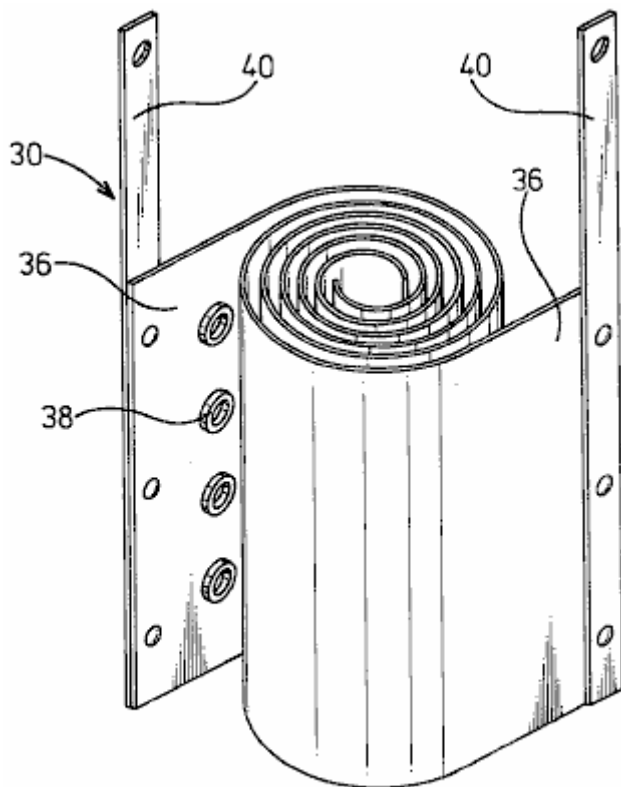


FIG.2

Fig.3 is a plan view of electrodes with magnetic materials.

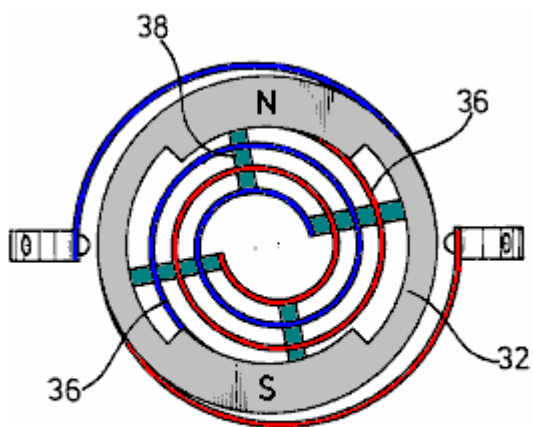


FIG.3

DESCRIPTION OF THE PREFERRED EMBODIMENT

In Fig.1, an electrolysis cell 10, a gas-liquid separation tank 12 and a gas-washing tank 14 are vertically arranged as shown with the electrolytic cell 10 being positioned a little lower than the tanks.

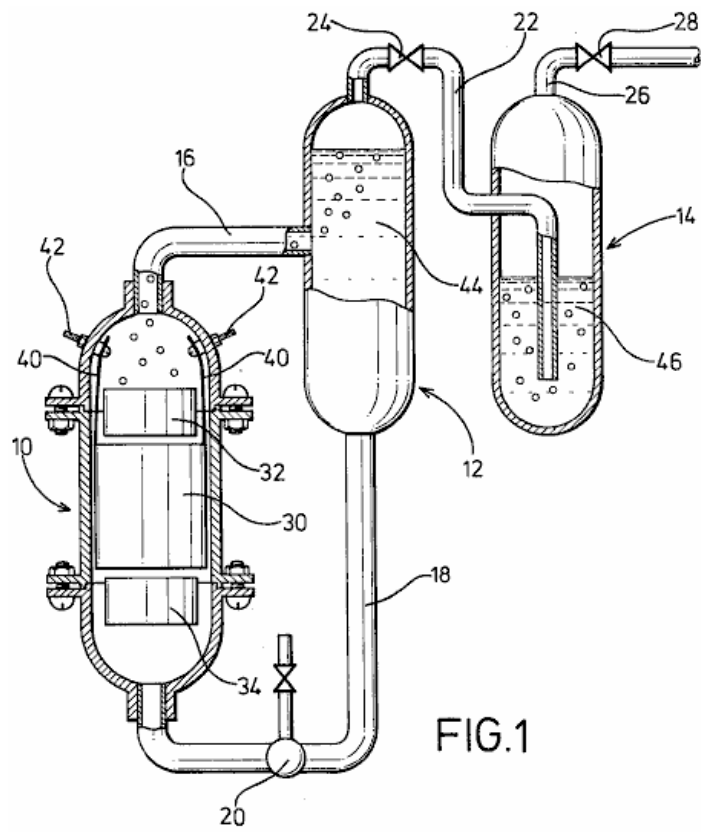


FIG. 1

Cell 10 and tanks 12 and 14 are connected together by a delivery pipe 16 which connects the top of the electrolytic cell 10 with the middle of the gas-liquid separation tank 12. A feed-back pipe 18 containing a pump 20, is provided to connect the bottom of the gas-liquid separation tank 12, with the bottom of the electrolytic cell 10. Also provided is pipe 22, which runs from the top of the gas-liquid separation tank 12 through a valve 24 to the bottom of the gas-washing tank 14. A drain pipe 26, provided with a valve 28, is taken from the top of the gas-washing tank 14.

In the electrolytic cell 10, positive and negative spiral electrodes 30 of diameters suited to the internal diameter of the electrolytic cell 10 are arranged coaxially. At the upper and lower parts of the spiral electrodes 30 are arranged magnet rings 32 and 34 made from ferrite or similar material, positioned so that North and South poles are opposite one another to create a magnetic field which is at right angles to the axis of the electrolytic cell.

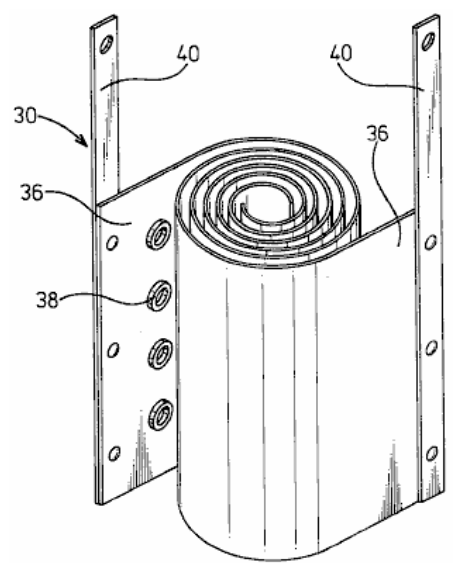


FIG. 2

Electrodes **30** are composed of two metal strips **36** which are wound into spiral shapes with cylindrical insulating spacers **38** made of rubber or a similar material, placed between them and attached to the surface of the metal strips **36**. From the metal strips **36**, wires **40**, are taken to the positive and negative power supply terminals, via connectors provided in the inner wall of the electrolytic cell.

The electrolytic cell **10** and the gas-liquid separation tank **12** are filled with an electrolyte **44** which is circulated by the pump **20**, while the gas-washing tank **14** is filled with a washing liquid **46** to such a level that gases gushing out of the conduit **22** are thoroughly washed.

The apparatus of the present invention may be well be used for the electrolysis of flowing water for the production of hydrogen gas and oxygen gas at a high efficiency. That is to say, the electrolytic cell **10** and the gas-liquid separation tank **12** are filled with the electrolyte **44** which is caused by pump **20** to flow through a magnetic field in an vortex path in which positive and negative magnetic poles N, S of the magnets **32** and **34** face each other to produce a transverse field, and through the metal plates **36** of the vertical electrodes **30** to generate an orientation for the electrical migration of cat-ions and an-ions, causing an increased gas separation rate and enhancement of the electrolysis.

In particular, the flowing oxygen gas serves to facilitate an aeration of the electrolyte since it has varying magnetic effects as it passes through the magnetic field. The spiral electrodes **30** of this invention, create a remarkable increase in the rate of electrolysis. This is caused by the continuously decreasing space between the electrodes **30** which causes the flow velocity to increase as the flow progresses along its path. This causes turbulence which instantly removes bubbles of gas from the surface of the electrodes, allowing fresh ions full contact with the metal surfaces, thus raising the efficiency of the cell.

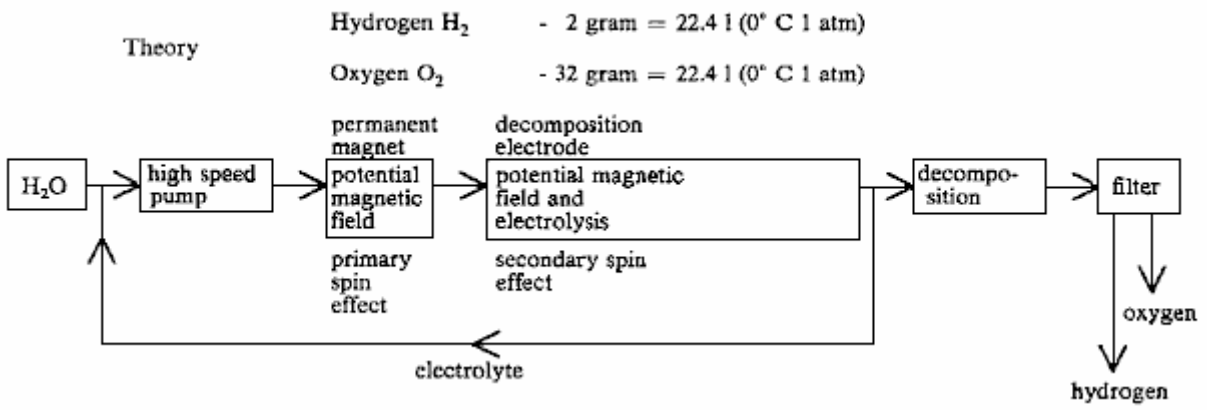
The spiral coiling of the electrodes also enables a very desirable reduction in the size of the cell, while increasing the electrode area and improving its contact with the electrolyte **44**. There is also a relatively short migration distance of ions which also promotes rapid gas production. On the other hand, insulating spacers **38** interposed between the metal strips **36** serves to create the desired turbulence of the electrolyte passing through the cell.

The liquid circulating system for separation of gas and liquid requires no other driving unit except the circulation pump **20** to achieve separation of gas and liquid by utilising differences in water heads between cell **10** and tanks **12** and **14**. In other words, a flow of gas-liquid mixture supplied from electrolytic cell **10** is fed into the gas-liquid separation tank **12** where, due to the difference in buoyancy of gases and liquid, the gas rises and is fed into the gas-washing tank **14** while the liquid moves down and is returned to the electrolytic cell **10**. The washing tank **14** is filled with any convenient washing liquid **46** so that the gases gushing out of conduit **22** are thoroughly washed and fed into the drain pipe **26**. Thus, the apparatus may be constructed at reduced cost and without any complexity.

As described earlier, the magnets **32** and **34** provide positive and negative magnetic poles N, S which are confronted in the annular wall for facilitating an alignment between the cross section of the flow-path of the liquid and the annular portion of the magnets **32** and **34** and a generation of a magnetic field in a direction perpendicular to that of the liquid flow, so that the liquid is forced to flow through the magnetic field.

Experimental data	Value
Room temperature	20 ^o Centigrade
Atmospheric pressure	1003 millibars
Electrolyte temperature	25 ^o Centigrade
Humidity	43%
Voltage	2.8 Volts
Current	30 Amps
Hydroxy gas production rate	116 cc/sec.
Hydrogen production per Coulomb (1A x 1 sec.)	2.6 cc.
Oxygen production per Coulomb	1.3 cc.

The rate of generation shown by these figures is over 20 times that which could be obtained by standard Faraday electrolysis.



While a preferred embodiment of the invention has been illustrated by way of example in the drawings and particularly described, it will be understood that various modifications may be made in the construction and that the invention is no way limited to the embodiments shown.