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(54) **ELECTROLYSIS CELL FOR THE PRODUCTION OF HYDROGEN**

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(57) **ABSTRACT**

A method of producing hydrogen through the electrolysis of water using a hydrogen releasing reactant and an A/O current. Various forms of cell configuration and electrode materials may he utilized along with varying voltages and frequencies.

ELECTROLYSIS CELL FOR THE PRODUCTION OF HYDROGEN

[0001] 1. Input voltage: 0-600 Volts Alternating Current

[0002] 2. Input Frequency: 0-5 MHz

[0003] 3. Electrolyte: An aqueous solution containing one or more reactants such as sodium chloride, NaCl, sodium bicarbonate, NaHCO3, or magnesium, Mg, water and can also contain one or more hydrogen rich compounds such as cellulose $C_6H_{10}O_5$, sucrose $C_{12}H_{22}O_{11}$, or chlorophyll $C_{55}H_{72}O_5N_4Mg$.

[0004] 4. Electrodes: Any conductive material of various shapes or sizes such as flat plates or cylindrical dependant on cell output requirements and outer cell configuration.

1. While numerous patents have been issued for electrolysis cells for the production of hydrogen, the basic method remains the same. A D/C currant is passed through an electrolyte solution, usually an add water mixture, utilizing an anode and cathode. By changing the voltage from D/C to A/C and utilizing a hydrogen releasing reactant, cell efficiency is greatly increased. Initial testing has been conducted substantiating this claim utilising the following voltages, reactant, and electrode design:

Cylindrical shaped electrodes one placed inside the other with attached leads to apply electrical current.

Single phase 110 VAC 60 Hz electrical power.

Sodium Chloride, common table salt, as a reactant.

Tests repealed that by using A/C current the sodium was separated from the chlorine in the salt thereby releasing the hydrogen from the water in a substantially greater amount than conventional electrolyte solutions. Additionally, since both electrodes become anodes and cathodes equally, no metal transfer occurs between electrodes as in D/C cells.

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