

# JP59059889A - Apparatus for generating hydrogen gas and related gases from water

## Public Patent Report (A)

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- 2. Title of Application:** Apparatus for generating hydrogen gas and related gases from water
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## 1. Title of the Invention:

Apparatus for generating hydrogen gas and related gases from water.

## 2. Field of the Invention:

(1) This invention relates to an apparatus for generating hydrogen gas and other related gases from water, specifically designed to facilitate the electrolysis of water to produce these gases.

## 3. Background of the Invention:

(1) In general, the electrolysis process involves using an electrolytic cell, which consists of two electrodes immersed in water to facilitate the separation of water into hydrogen and oxygen gases.

- (2) The electrodes are typically connected to an external power supply, which allows for a continuous flow of electricity. The hydrogen gas produced is a vital by-product of this process, and it is collected and stored for further use.
- (3) In previous methods, the electrolysis was often inefficient due to poor conductivity and inadequate management of the produced gases, leading to safety and performance issues.
- (4) The apparatus includes various modifications to enhance efficiency, reduce energy consumption, and ensure safe handling of the gases generated.
- (5) A critical aspect of the design involves managing the pressure within the electrolysis cell to prevent any dangerous buildup of gases, ensuring a stable and controlled operation.
- (6) The device has an electrode arrangement designed to ensure that the electrodes are uniformly distributed within the electrolytic cell, allowing for efficient electrolysis. The arrangement includes several electrodes to enhance the reaction surface area, thus improving the efficiency of hydrogen gas production.
- (7) The apparatus also features a control mechanism that regulates the output size of the gases generated. This ensures that the production of gases remains stable and consistent, preventing fluctuations that could affect performance.
- (8) The main electrodes are constructed with materials that enhance their conductivity, providing a reliable and efficient means of generating hydrogen and other gases through electrolysis.
- (9) In some embodiments, the design allows for the adjustment of the electrode spacing to optimize the electrolysis process, improving gas production rates and efficiency.
- (10) The system includes safety features to prevent the buildup of gases, maintaining a safe operating environment.

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