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(54) Title: HYDROGEN GAS GENERATOR

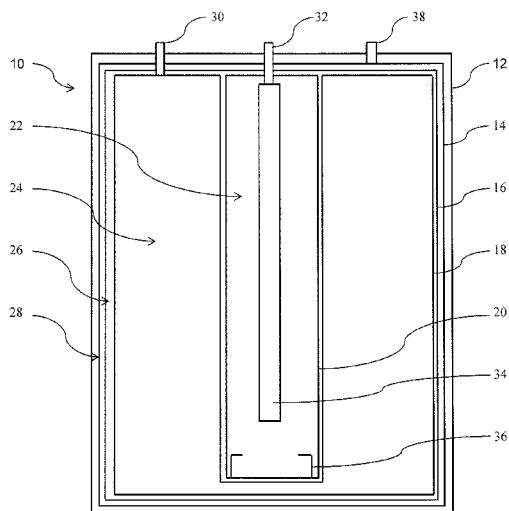


FIG. 1

(57) **Abstract:** The invention is a hydrogen generator (10) with a liquid reservoir (24), a reaction area (22), a byproduct containment area (26) and a hydrogen containment area (28) within a housing (12). A liquid from the liquid reservoir can react within the reaction area to produce hydrogen gas and byproducts, which flow to the byproduct containment area, and hydrogen gas passes into the hydrogen containment area (28) and is released from the housing through a hydrogen outlet (38) as needed. The liquid reservoir and the reaction area are each within a container (18,20) made of a liquid impermeable material, the byproduct containment area is within a flexible container (16) made of a hydrogen permeable, liquid impermeable material, and the hydrogen containment area is within a flexible container (14) made of a hydrogen impermeable material. The byproduct containment area is in a volume exchanging relationship with one or both of the liquid reservoir and the reaction area.