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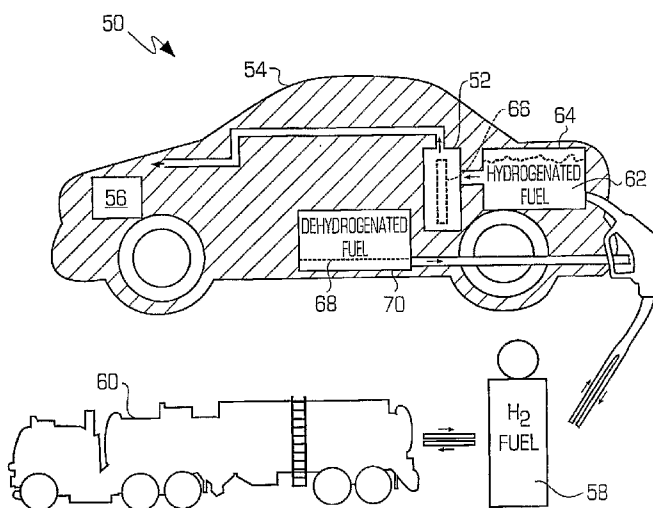
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(54) Title: METHOD AND DEVICE FOR HYDROGEN STORAGE AND DELIVERY



(57) Abstract: Methods, devices and assemblies involving hydrogen production. System (50) includes a vehicle (54) having device (52) for producing hydrogen for generating energy, service station (58), and a transportation means (60). A hydrogen producing compound (62) (e.g., liquid organothiol) is transferred from service station (59) to storage reservoir (64) of device (52) located within vehicle (54). The compound (62) is reacted with a metal substrate (66), upon demand, to produce hydrogen gas and spent compound and/or R-X compound (e.g., organothiolate) bound to the metal substrate (66). The hydrogen gas can be delivered to hydrogen consuming device (56) for generating energy utilized in operation of vehicle (54). The R-X compound bound to the metal substrate (66) can be dissociated from the metal substrate (66) by application of energy from an energy source to produce a spent compound (68) (e.g., dimeric compound, R-X-X-R). Spent compound (68) can be stored in reservoir (70) and transported by transportation means (60) to service station (58) for regeneration.

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