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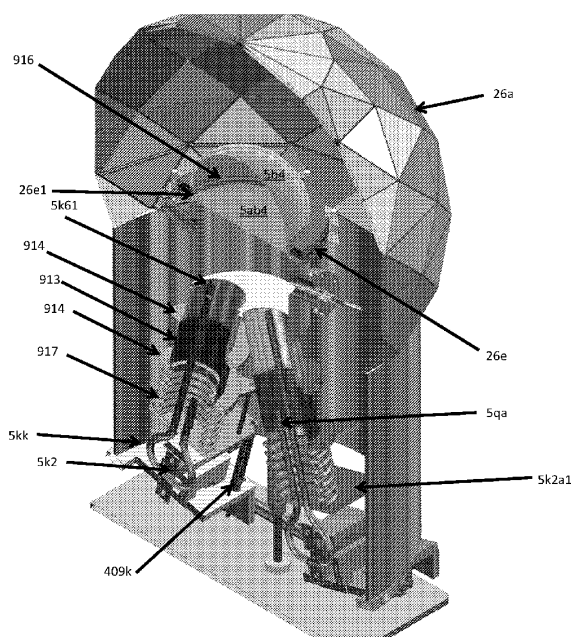


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(54) Title: INFRARED LIGHT RECYCLING THERMOPHOTOVOLTAIC HYDROGEN ELECTRICAL POWER GENERATOR

Fig. 13



(57) Abstract: A power generator is described that provides at least one of electrical and thermal power comprising (i) at least one reaction cell for reactions involving atomic hydrogen products identifiable by unique analytical and spectroscopic signatures, (ii) a molten metal injection system comprising at least one pump such as an electromagnetic pump that provides a molten metal stream to the reaction cell and at least one reservoir that receives the molten metal stream, and (iii) an ignition system comprising an electrical power source that provides low-voltage, high-current electrical energy to the at least one stream of molten metal to ignite a plasma to initiate rapid kinetics of the reaction and an energy gain. In some embodiments, the power generator may comprise: (v) a source of H₂ and O₂ supplied to the plasma, (vi) a molten metal recovery system, and (vii) a power

[Continued on next page]

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converter capable of (a) converting the high-power light output from a blackbody radiator of the cell into electricity using concentrator thermophotovoltaic cells with light recycling or (b) converting the energetic plasma into electricity using a magnetohydrodynamic converter.