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(54) Title: PRODUCTION OF HYDROGEN-RICH FUEL-GAS WITH REDUCED CO₂ EMISSION

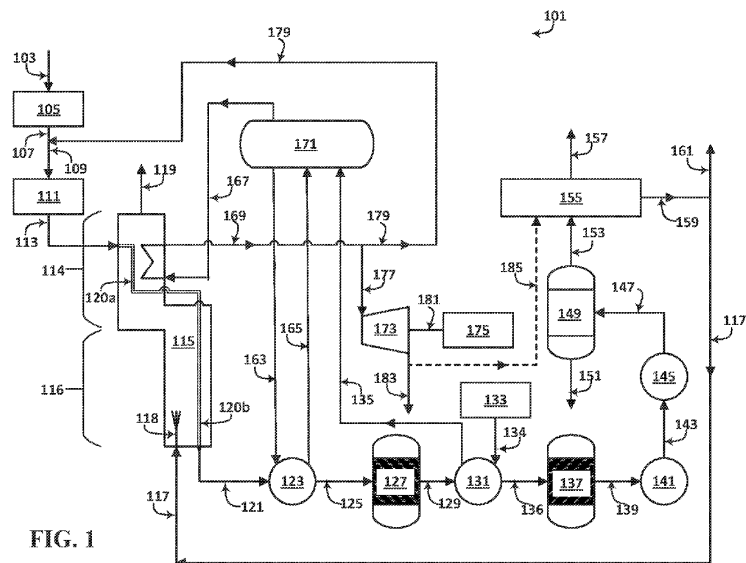


FIG. 1

(57) Abstract: An H₂-rich fuel gas stream can be advantageously produced by reforming a hydrocarbon/steam mixture in to produce a reformed stream, followed by cooling the reformed stream in a waste-heat recovery unit to produce a high-pressure steam stream, shifting the cooled reformed stream a first shifted stream, cooling the first shifted stream, shifting the cooled first shifted stream to produce a second shifted stream, cooling the second shifted stream, abating water from the cooled second shifted stream to obtain a crude gas mixture stream comprising H₂ and CO₂, and recovering a CO₂ stream from the crude gas mixture stream. The H₂-rich stream can be advantageously combusted to provide thermal energy needed for residential, office, and/or industrial applications including in the H₂-rich fuel gas production process. The H₂-rich fuel gas production process can be advantageously integrated with an olefins production plant comprising a steam cracker.

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