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(54) Title: PROCESSES AND SYSTEMS FOR UPGRADING A HYDROCARBON

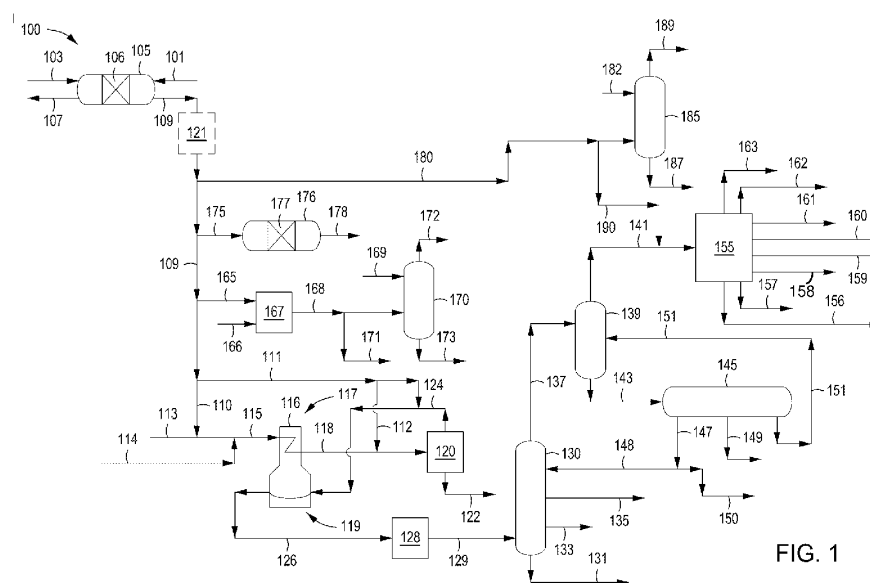


FIG. 1

(57) Abstract: Processes and systems for upgrading a hydrocarbon. In some embodiments, the process for upgrading a hydrocarbon, can include contacting a gas that can include one or more C₁-C₄ hydrocarbons and carbonyl sulfide with a sorbent under conditions sufficient to cause at least a portion of the carbonyl sulfide to sorb onto the sorbent to produce a treated gas lean in carbonyl sulfide and a sorbent rich in carbonyl sulfide. The process can also include contacting the sorbent rich in carbonyl sulfide with a regenerating gas that can include molecular hydrogen, one or more C₁-C₄ hydrocarbons, or a mixture thereof to produce a regenerated sorbent and a desorb effluent that can include a sulfur-based contaminant. The process can also include introducing at least a portion of the desorb effluent into a pyrolysis zone of a steam cracker and recovering a steam cracker effluent from the pyrolysis zone.

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