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(54) Title: **STAGED UPFLOW HYDROPROCESSING WITH NONCATALYTIC IMPURITY REMOVAL FROM THE FIRST STAGE VAPOR EFFLUENT**

(57) Abstract

A hydroprocessing process for removing impurities from a feed (22) comprising a hydrocarbonaceous liquid comprises at least two cocurrent, upflow hydroprocessing reaction stages (14, 16) and a non-catalytic, vapor-liquid contacting stage (20). The reaction and contacting stages may all be in the same reactor vessel (12). The feed and a hydrogen treat gas (24) are passed up into a catalyst bed which comprises the first reaction stage, which produces a partially hydroprocessed liquid and vapor effluent. This first stage vapor is passed up into the contacting stage (20) in which it contacts a hydrocarbonaceous liquid which reduces the vapor impurity content. The impurity-enriched contacting liquid passes down and mixes with the first stage liquid effluent. The combined effluents and hydrogen are passed up into the second reaction stage to form a processed product liquid and hydrogen-containing vapor effluent. This second stage vapor effluent is passed up into the first stage to provide at least a portion of the hydrogen for the first stage reaction. Additional product liquid may be recovered by cooling and condensing the purified contacting stage vapor effluent.

