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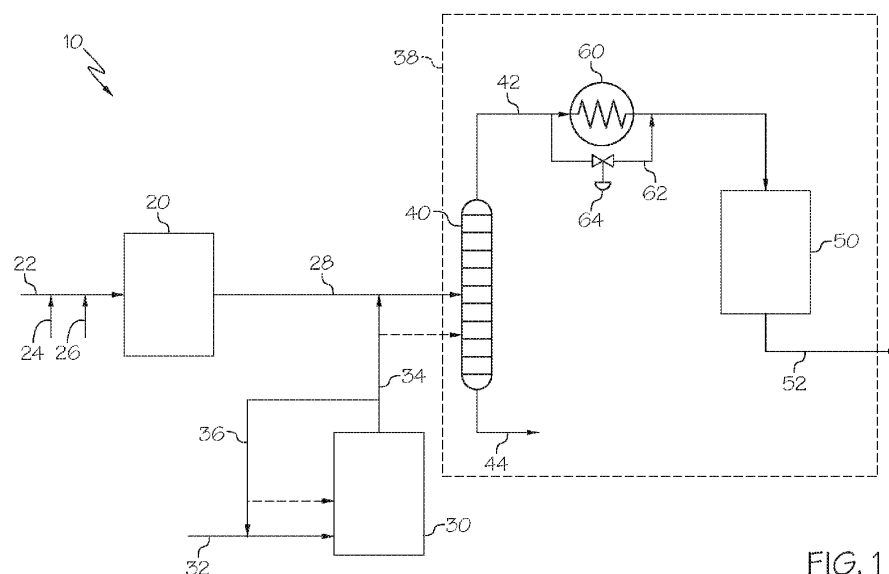
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(54) Title: METHODS FOR OPERATING ACETYLENE HYDROGENATION UNITS DURING INTEGRATION OF CHEMICAL PROCESSING SYSTEMS FOR PRODUCING OLEFINS



(57) Abstract: A method for operating an acetylene hydrogenation unit of a steam cracking system that integrates a fluidized catalytic dehydrogenation (FCDh) effluent from a fluidized catalytic dehydrogenation (FCDh) system may include separating a cracked gas from the steam cracking system into at least a hydrogenation feed comprising at least acetylene, CO, and hydrogen, introducing the FCDh effluent to the separation system, combining the FCDh effluent with the cracked gas upstream of the separation system, or both. The method may include hydrogenating acetylene in the hydrogenation feed. Elevated CO concentration in the hydrogenation feed due to the FCDh effluent may reduce a reaction rate of acetylene hydrogenation. The acetylene hydrogenation unit may operate at an elevated temperature relative to normal operating temperatures when the portion of the FCDh effluent is not integrated, such that a concentration

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