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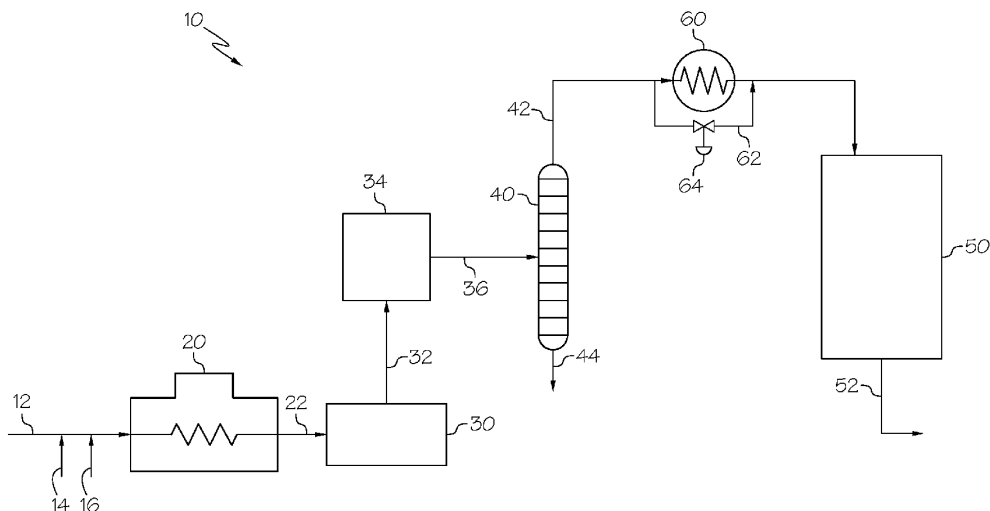


FIG. 1

(57) Abstract: A method for selectively hydrogenating acetylene in a cracked gas from a steam cracking unit for producing olefins may include separating a hydrogenation feed from the cracked gas. The hydrogenation feed may include acetylene, hydrogen, carbon monoxide, and at least one product. The method may further include contacting the hydrogenation feed with an acetylene hydrogenation catalyst, the contacting causing hydrogenation of at least a portion of the acetylene of the hydrogenation feed to produce a hydrogenation effluent. In response to a change in a composition of a feedstock to the steam cracking unit that results in a change in a hydrogen concentration in the hydrogenation feed, the method may further include determining the hydrogen concentration in the hydrogenation feed and increasing or decreasing a temperature of the hydrogenation feed based on the determined hydrogen concentration of the hydrogenation feed.

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