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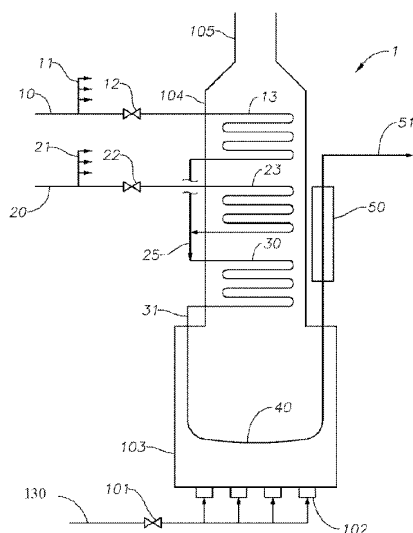
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(54) Title: EROSION RESISTANT ALLOY FOR THERMAL CRACKING REACTORS



Figure

(57) Abstract: Reactor components formed using an erosion resistant alloy having desirable high temperature mechanical strength are provided. The erosion resistant components can include, but are not limited to, tubes, reactors walls, fittings, and/or other components having surfaces that can be exposed to a high temperature reaction environment in the presence of hydrocarbons and/or that can provide pressure containment functionality in processes for upgrading hydrocarbons in a high temperature reaction environment. The erosion resistant alloy used for forming the erosion resistant component can include 42.0 to 46.0 wt. % nickel; 32.1 to 35.2 wt. % chromium; 0.5 to 2.9 wt. % carbon; 0 to 2.0 wt. % titanium; 0 to 4.0 wt. % tungsten, and iron, with at least one of titanium and tungsten is present in an amount of 1.0 wt. % or more. The iron can correspond to the balance of the composition. Optionally, the erosion resistant alloy can provide further improved properties based on the presence of at least one strengthening mechanism within the alloy, such as a carbide strengthening mechanism, a solid solution strengthening mechanism, a gamma prime strengthening mechanism, or a combination thereof.

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