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*[Continued on next page]*

(54) **Title**: A PROCESS FOR THE SELECTIVE HYDROGENATION AND HYDRODESULFERIZATION OF A PYROLYSIS GASOLINE FEEDSTOCK

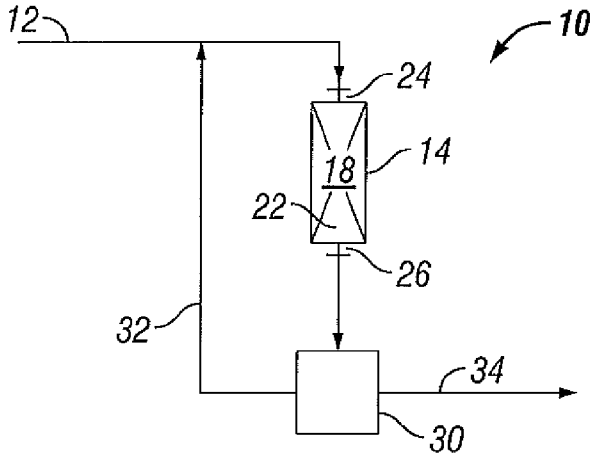



FIG. 1

(57) **Abstract**: Disclosed is a process for the selective hydrogenation of diolefins and sulfur compounds that are contained in a pyrolysis gasoline feedstream. The process includes utilizing a single hydrotreating reaction stage by introducing the pyrolysis gasoline feedstock that includes a diolefin concentration and an organic sulfur concentration into a reactor that is loaded with a high activity hydrotreating catalyst and which is operated under selective hydrogenation conditions. A reactor effluent having a reduced diolefin concentration and a reduced organic sulfur concentration is yielded from the reactor and is separated into a portion that is recycled as a reactor feed. The remaining portion of the reactor effluent is passed downstream for further processing or handling.

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