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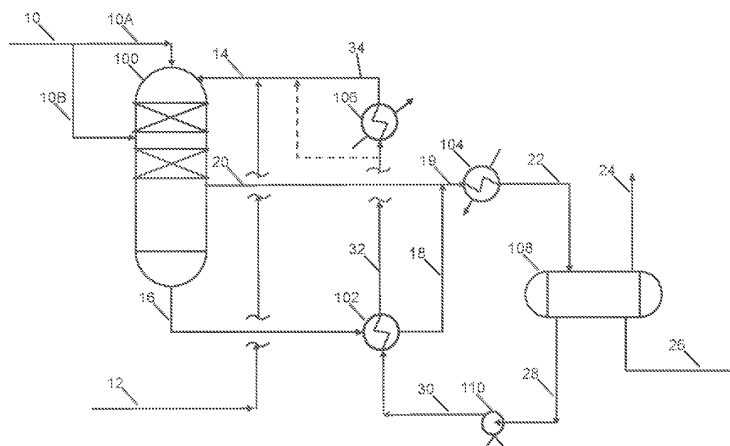
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(54) **Title:** PRODUCTION OF HEAVY ISOPARAFFINIC HYDROCARBONS

Fig. 1



(57) **Abstract:** Processes and systems for the production of heavy isoparaaffinic hydrocarbons include feeding hydrogen and a mixed isoolefin stream, including C8-C12 olefins, isoolefins, and oligomers, and C8-C12+ hydrogenated hydrocarbons to a trickle-bed reactor system. The hydrogen and mixed isoolefin are reacted over a hydrogenation catalyst, producing a liquid effluent comprising hydrogenated hydrocarbons and unreacted olefins and oligomers, and a vapor effluent comprising hydrogenated hydrocarbons, hydrogen and unreacted olefins and oligomers. The liquid effluent is fed to a first heat exchanger, producing a cooled liquid effluent stream, which is combined with the vapor effluent, producing a mixed phase effluent. The mixed phase effluent is cooled in a second heat exchanger, producing a partially condensed effluent, which is fed to a drum, producing a vent stream, a hydrogenated product stream having greater than 95wt% C8-C12 saturated hydrocarbons, and a hydrogenated recycle stream. The hydrogenated product stream may be provided to downstream blending systems.

[Continued on next page]

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