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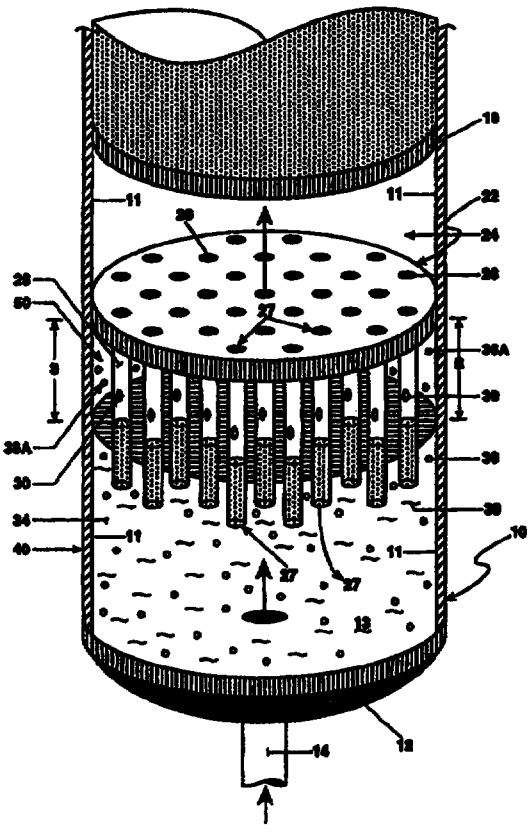
(54) Title: A GAS-POCKET DISTRIBUTOR AND METHOD FOR HYDROPROCESSING A HYDROCARBON FEED STREAM

(57) Abstract

A distributor assembly for hydroprocessing a hydrocarbon mixture of hydrogen-containing gas and liquid hydrocarbon is presented. The distributor assembly has a circular plate with a plurality of hollow risers bound thereto for distributing hydrogen-containing gas and liquid hydrocarbon through openings in the circular plate member. Each of the hollow risers has a tubular opening in its associated side. The distributor assembly is connected to an internal wall of a reactor. A method is also presented for hydroprocessing a hydrocarbon feed stream comprising flowing a mixture of hydrogen-containing gas and liquid hydrocarbon into a reactor zone to produce evolved hydrogen-containing gas; and flowing the mixture of hydrogen-containing gas and liquid hydrocarbon through a plurality of tubular zones while admixing simultaneously therewith the evolved hydrogen-containing gas.