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(54) Title: OLEFIN HYDRATION PROCESS USING OSCILLATORY BAFFLED REACTOR

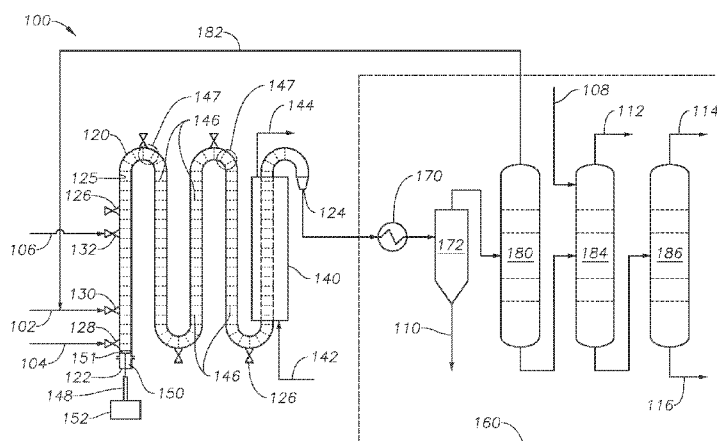


FIG. 1

(57) Abstract: A butanol production system and method of producing refined mixed butanols from water and mixed butenes. The system includes an internal baffle single pass reactor, a separation system and an exterior motion driver. The reactor has baffled cells. The separations system is operable to separately selectively separate water and mixed butenes from the crude product such that a refined mixed butanols is produced. The exterior motion driver is operable to induce unsteadiness in the fluid flow of the process fluid through the reactor. A method for producing refined mixed butanols includes introducing mixed butenes, water and a butene hydration catalyst into the reactor, operating the butanol production system such that the external motion driver induces unsteadiness in the process fluid flow and the reaction of mixed butenes and water occurs in the presence of the butene hydration catalyst such that mixed butanols form.