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(54) Title: METHODS FOR MAKING LIGHT OLEFINS BY DEHYDROGENATION USING CATALYSTS THAT INCLUDE MANGANESE

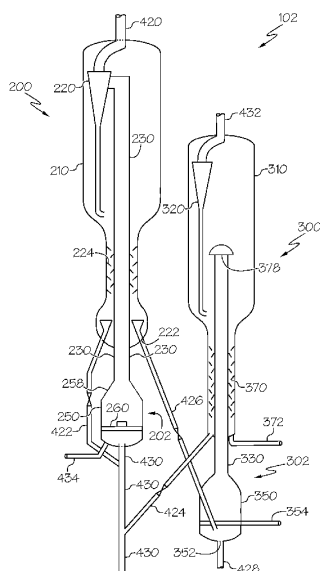


FIG. 1

(57) Abstract: A method may include contacting a hydrocarbon-containing feed with a catalyst in a reactor to form an olefin-containing effluent, then at least partially separating the olefin-containing effluent from the catalyst. The catalyst may be passed to a combustor where the catalyst may be heated. The catalyst may be passed from the combustor to an oxygen treatment zone and the catalyst may be exposed to an oxygen-containing gas for from 2 minutes to 20 minutes. The catalyst may be passed from the oxygen treatment zone to the reactor, such that at least a portion of the catalyst may continuously cycle between the reactor, the combustor, and the oxygen treatment zone. The catalyst may include from 0.1 wt.% to 10 wt.% of one or more metals chosen from gallium, indium, or combinations thereof, from 1 ppmw to 500 ppmw of one or more metals chosen from platinum, palladium, rhodium, iridium, or combinations thereof, from 0.01 wt.% to 1 wt.% of manganese, and at least 85 wt.% support.

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