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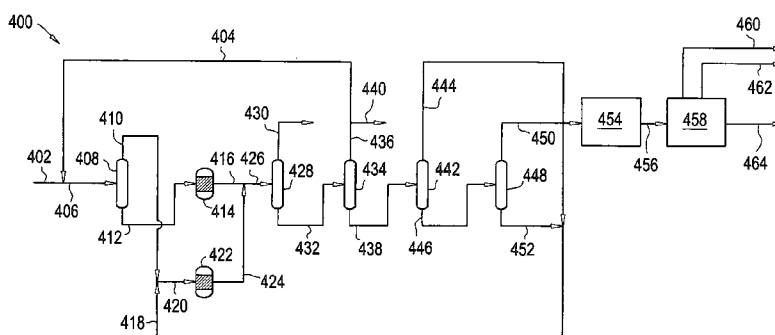
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(54) Title: PROCESS AND SYSTEM FOR THE PRODUCTION OF ISOPRENE

FIG. 4



(57) Abstract: Disclosed herein is a process for producing isoprene that includes reacting a mixed C₄ metathesis feed stream comprising isobutylene and at least one of 1-butene and 2-pentene in a first metathesis reactor in the presence of a first metathesis catalyst under conditions sufficient to produce an intermediate product stream comprising at least 30 wt. % 2-methyl-2-pentene based upon the olefin content of fresh feed in the mixed C₄ feed stream, and at least one of ethylene and propylene, separating the 2-methyl-2-pentene, subjecting the separated 2-methyl-2-pentene to pyrolysis to produce a reaction product stream comprising isoprene, and separating the isoprene into an isoprene product stream using fractionation. A system used in producing isoprene is also disclosed.