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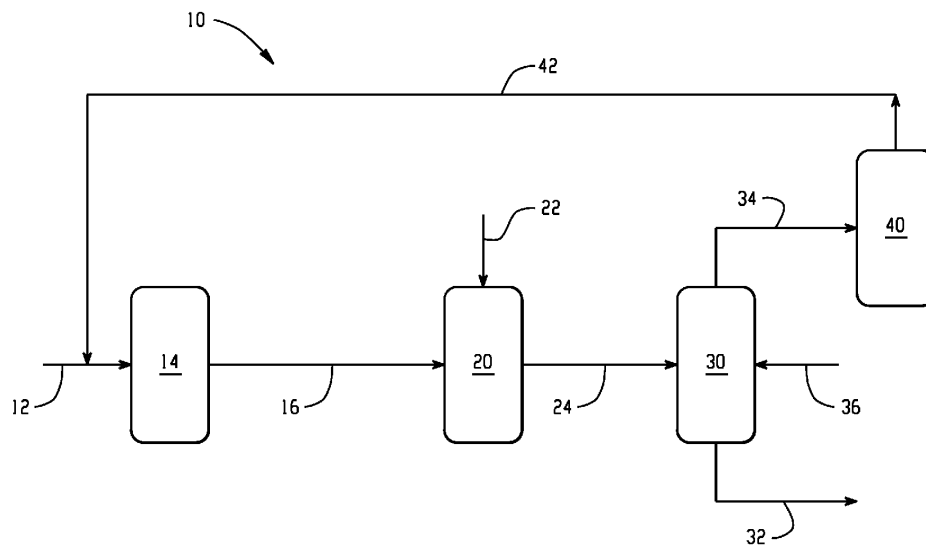
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(54) Title: METHOD OF PRODUCING A FUEL ADDITIVE



(57) Abstract: A method of producing a fuel additive includes producing a first product stream comprising butadiene by passing a feed stream comprising C4 hydrocarbons through a steam cracker; transforming greater than or equal to 90 weight % of the butadiene in the first product stream into a second product stream by passing the first product stream through a first hydrogenation unit, wherein the second product stream comprises 1-butene, 2-butene, n-butane, isobutylene, isobutane, or a combination thereof; and converting the second product stream into the fuel additive by passing the second product stream through a fuel additive synthesis unit with an acid catalyst.

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