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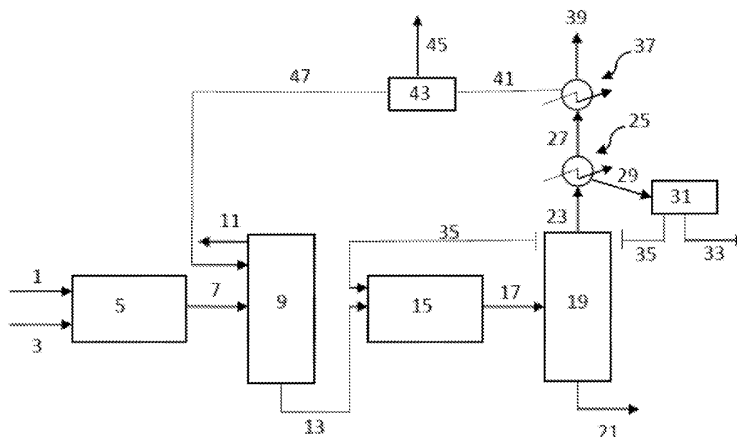
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(54) Title: METHOD AND APPARATUS FOR PRODUCING ALDEHYDE

Figure 2



(57) Abstract: The present invention provides a method for the production of a C_{2n} unsaturated aldehyde, wherein n is in the range of and including 3 to 6, the method comprising: (iv) passing a crude aldol stream from an aldolisation reaction to a crude aldol distillation column operated under distillation conditions to form a bottom stream having an increased concentration of the C_{2n} unsaturated aldehyde, water and heavies as compared to the crude aldol stream, and an overhead stream comprising unreacted C_n aldehyde, C_{n-1} alkane(s), C_{n-1} alkene(s) and a reduced concentration of the C_{2n} unsaturated aldehyde, water and heavies as compared to the crude aldol stream; (v) passing the overhead stream from the crude aldol distillation column to a first condenser zone, the first condenser zone being configured to provide a first condensed stream comprising an increased concentration of unreacted C_n aldehyde and water as compared to the overhead stream from the crude aldol distillation column and

[Continued on next page]

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an overhead stream comprising C_{n-1} alkane(s), C_{n-1} alkene(s) and a reduced concentration of unreacted C_n aldehyde and water as compared to the overhead stream from the crude aldol distillation column; (vi) passing the overhead stream from the first condenser zone to a second condenser zone, the second condenser zone being configured to condense at least a portion of the overhead stream from the first condenser zone to provide C_n/C_{n-1} condensate; and wherein at least a portion of the C_n/C_{n-1} condensate is recovered and returned to upstream of the crude aldehyde distillation column or to the crude aldehyde distillation column.