

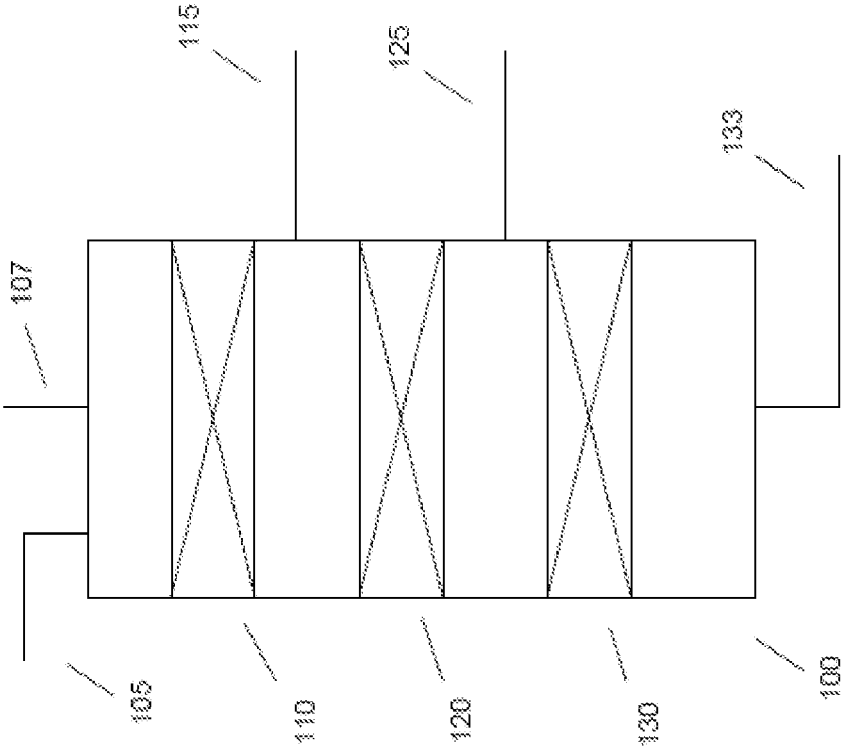


FIG. 1

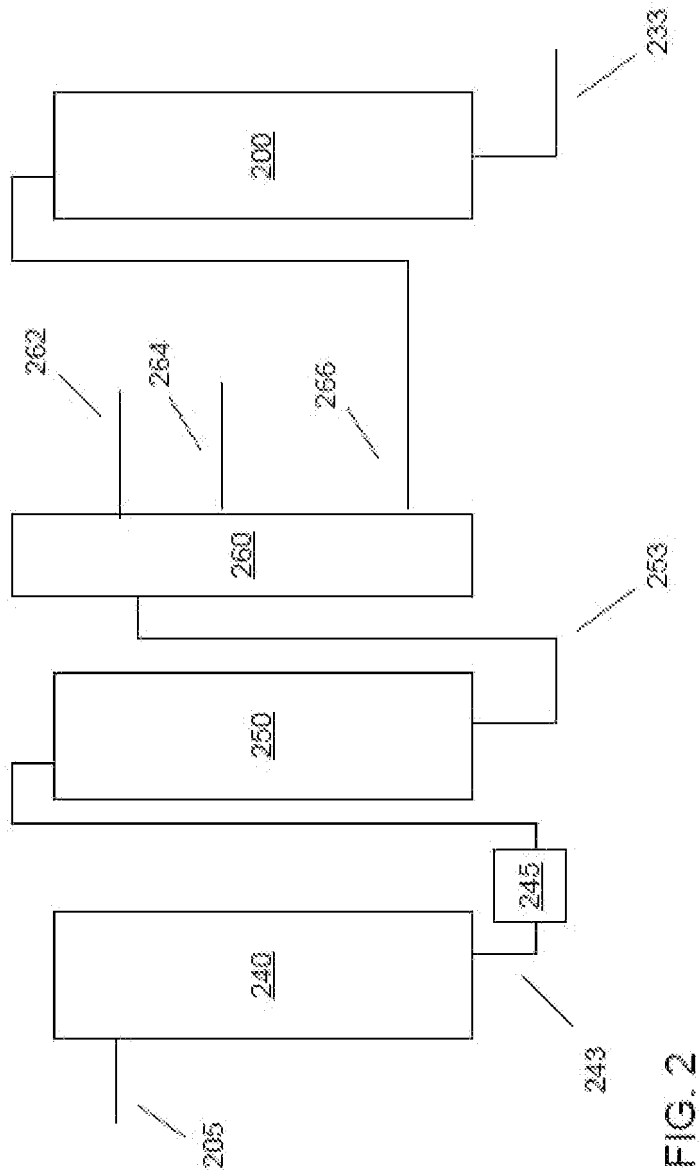


FIG. 2

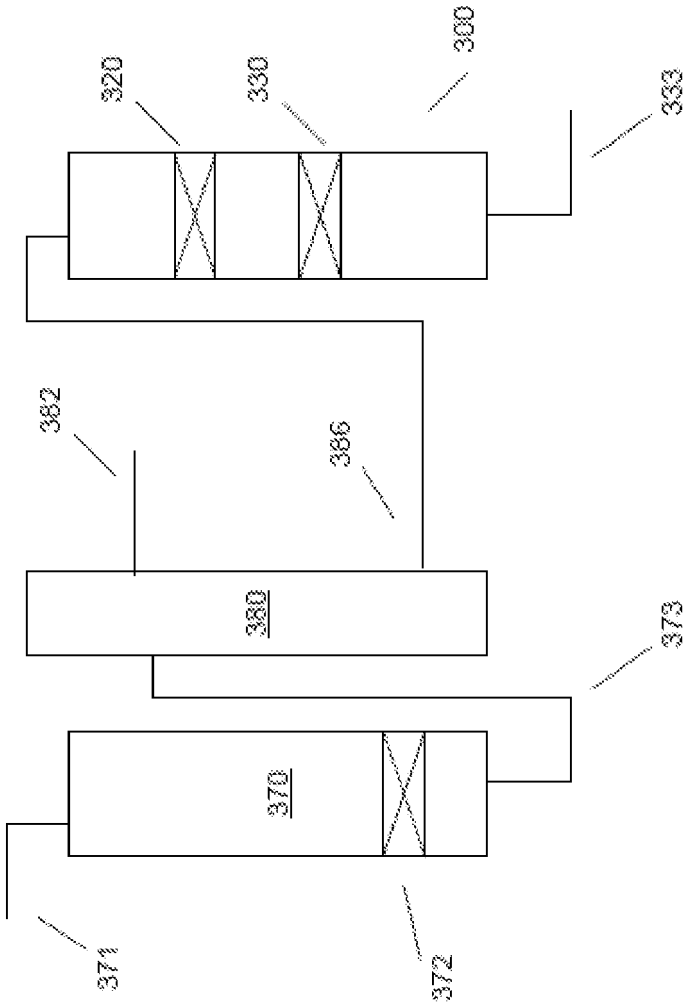


FIG. 3

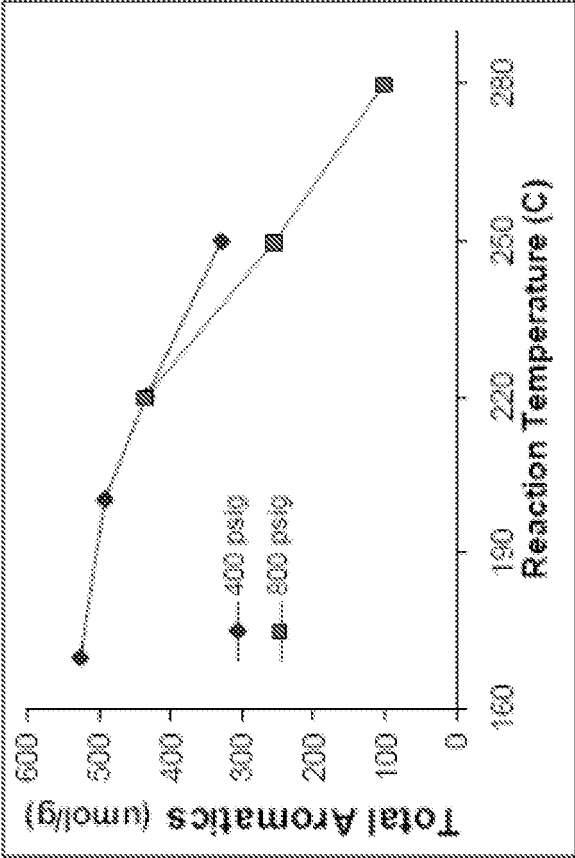


FIG. 4

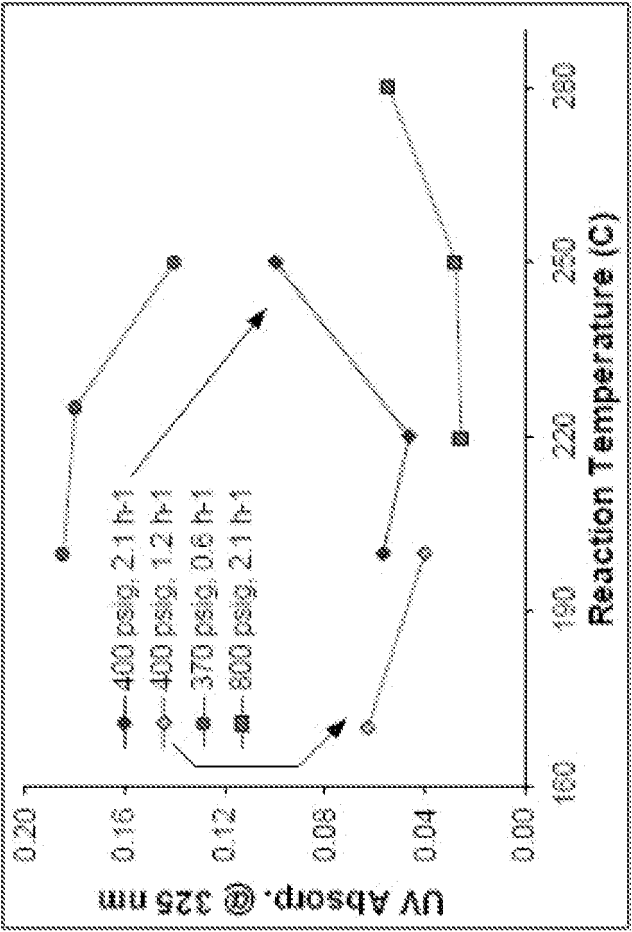


FIG. 5

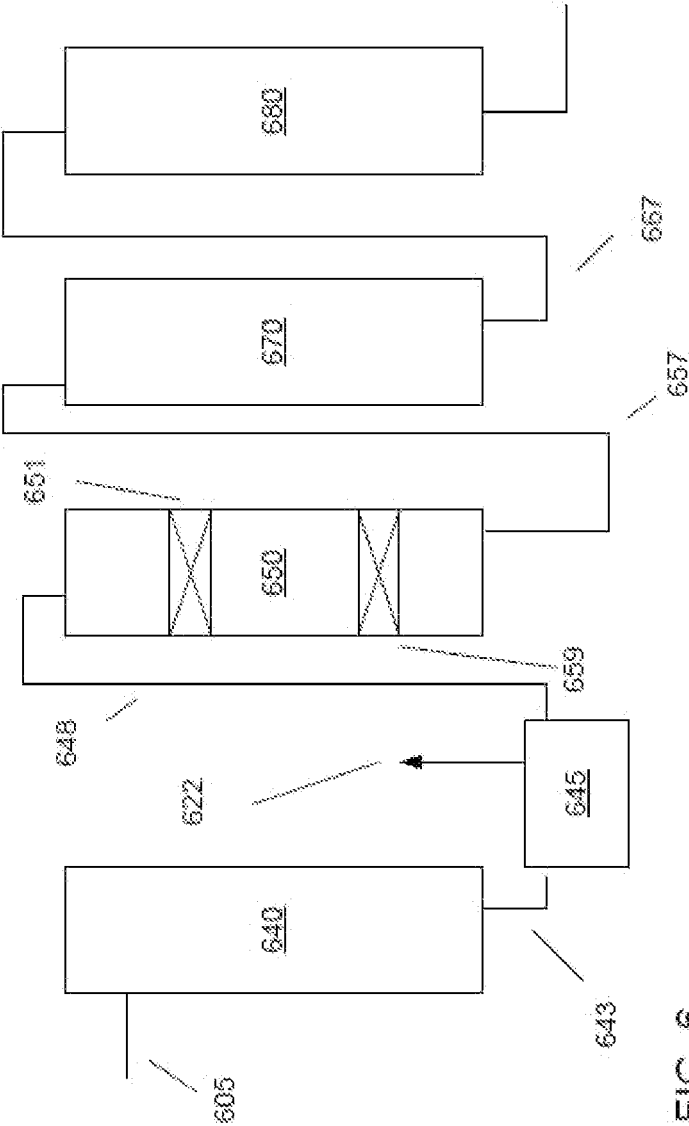
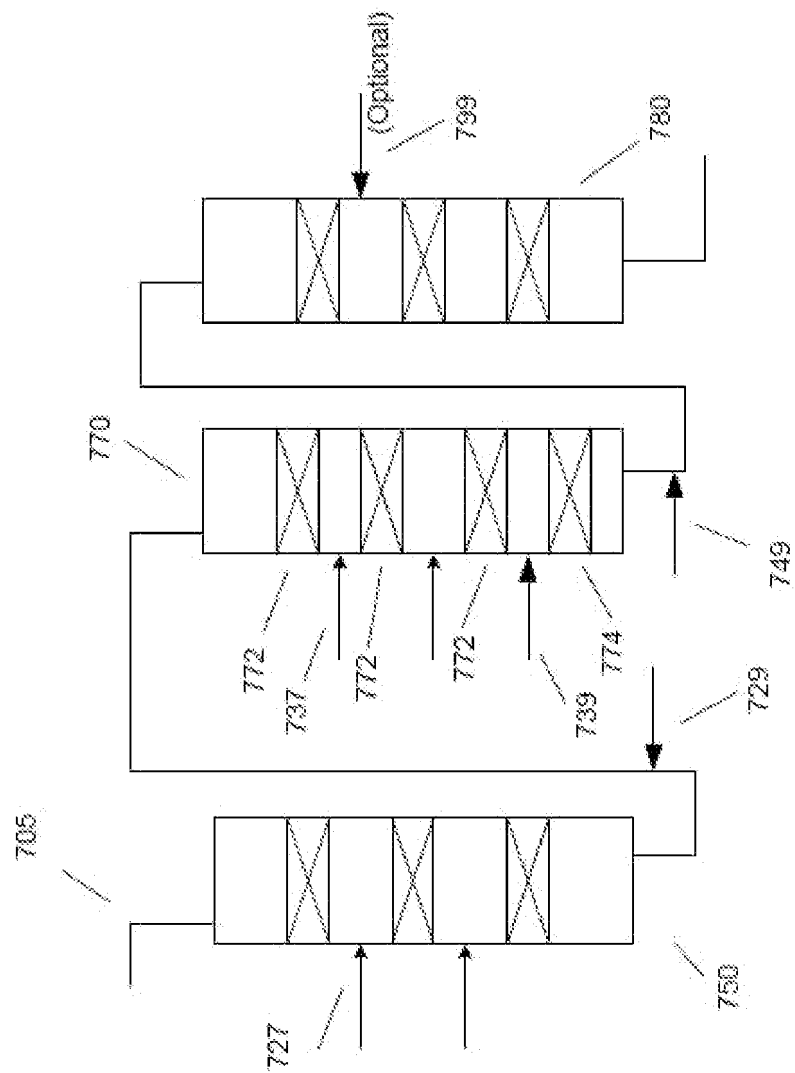


FIG. 6



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			Two stage aromatic saturation (values in parentheses represent modeled adjustments for comparison)	Three stage aromatic saturation
Feed aromatics	mmol/kg		633	630
Feed T5 (3 wt% boil)	°C		366	348
Feed T50	°C		436	440
Feed T95	°C		537	531
Hydrocracking				
H ₂ Partial Pressure	MPa	Pt on USY	12.4 (15.0)	13.0
LHSV	hr ⁻¹		2	2
Temperature	°C		372	370
Liquid Effluent Aromatics	mmol/kg		102	69
Catalytic Dewaxing				
Catalyst	Pt on ZSM-48			
LHSV	hr ⁻¹		3	3
Temperature	°C		343	350
Liquid Effluent Aromatics	mmol/kg		40	26
Aromatic Saturation				
Catalyst	Supported Pt/Pd			
LHSV	hr ⁻¹		N/A	3.6
Temperature	°C		N/A	
Liquid Effluent Aromatics	mmol/kg		N/A	6
Hydrofinishing				
Catalyst	Pt/Pd on MCM-41			
LHSV	hr ⁻¹		12	14
Temperature	°C		250	250
Liquid Effluent Aromatics	mmol/kg		13	3
Heavy Lube Aromatics	mmol/kg		24 (22)	6

FIG. 8

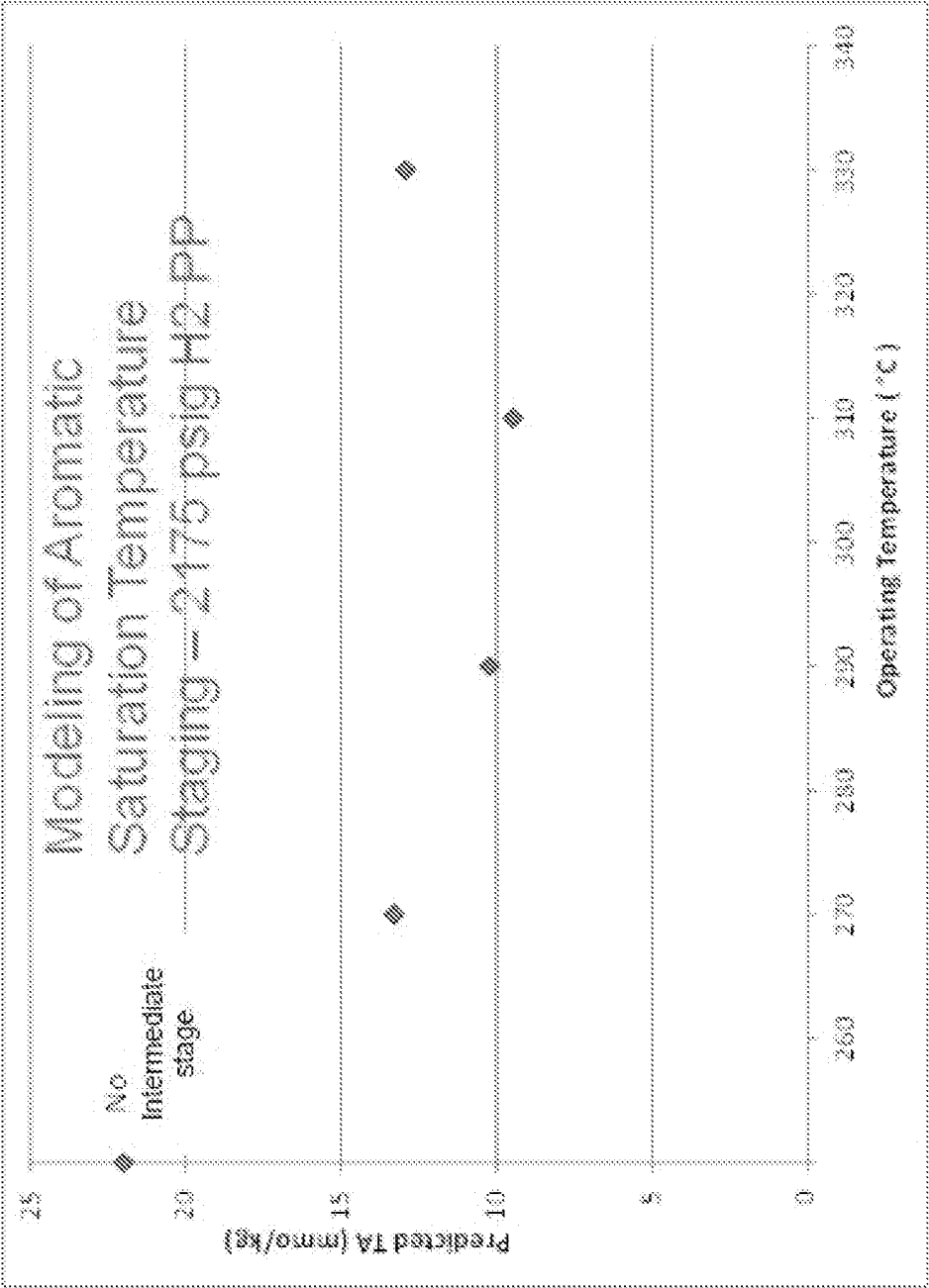


FIG. 9