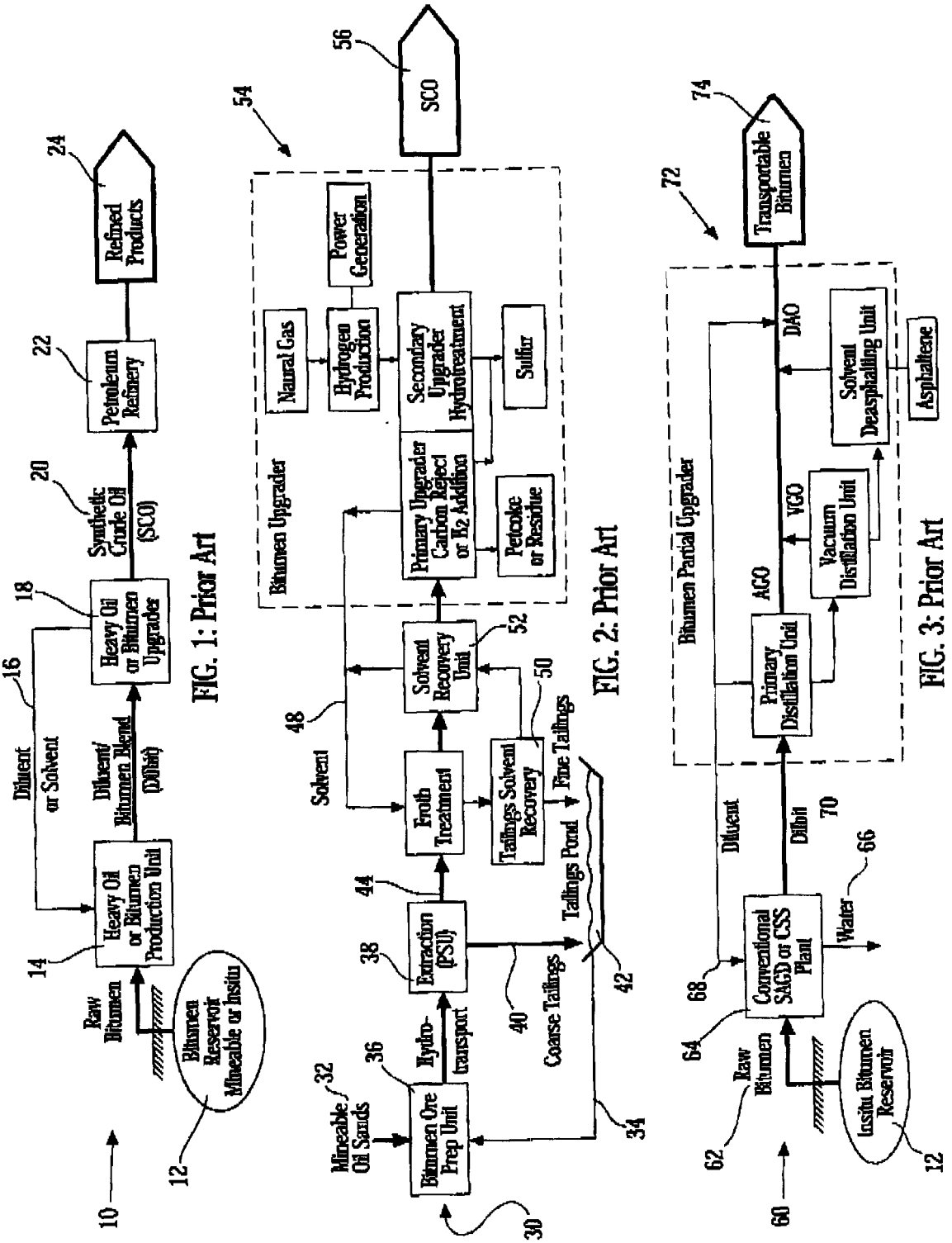





RECTIFIED SHEET (RULE 91.1)

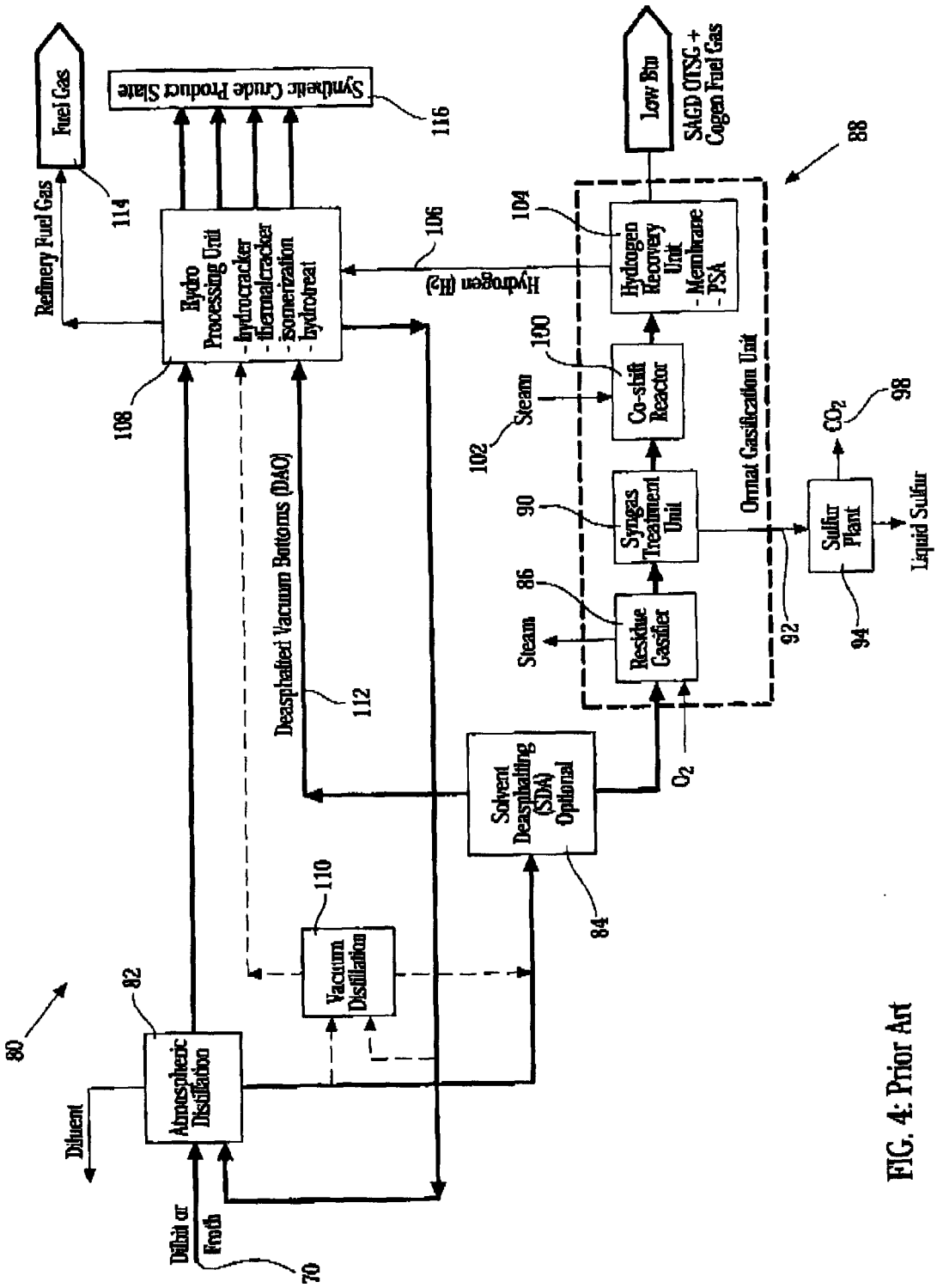



FIG. 4: Prior Art



RECTIFIED SHEET (RULE 91.1)

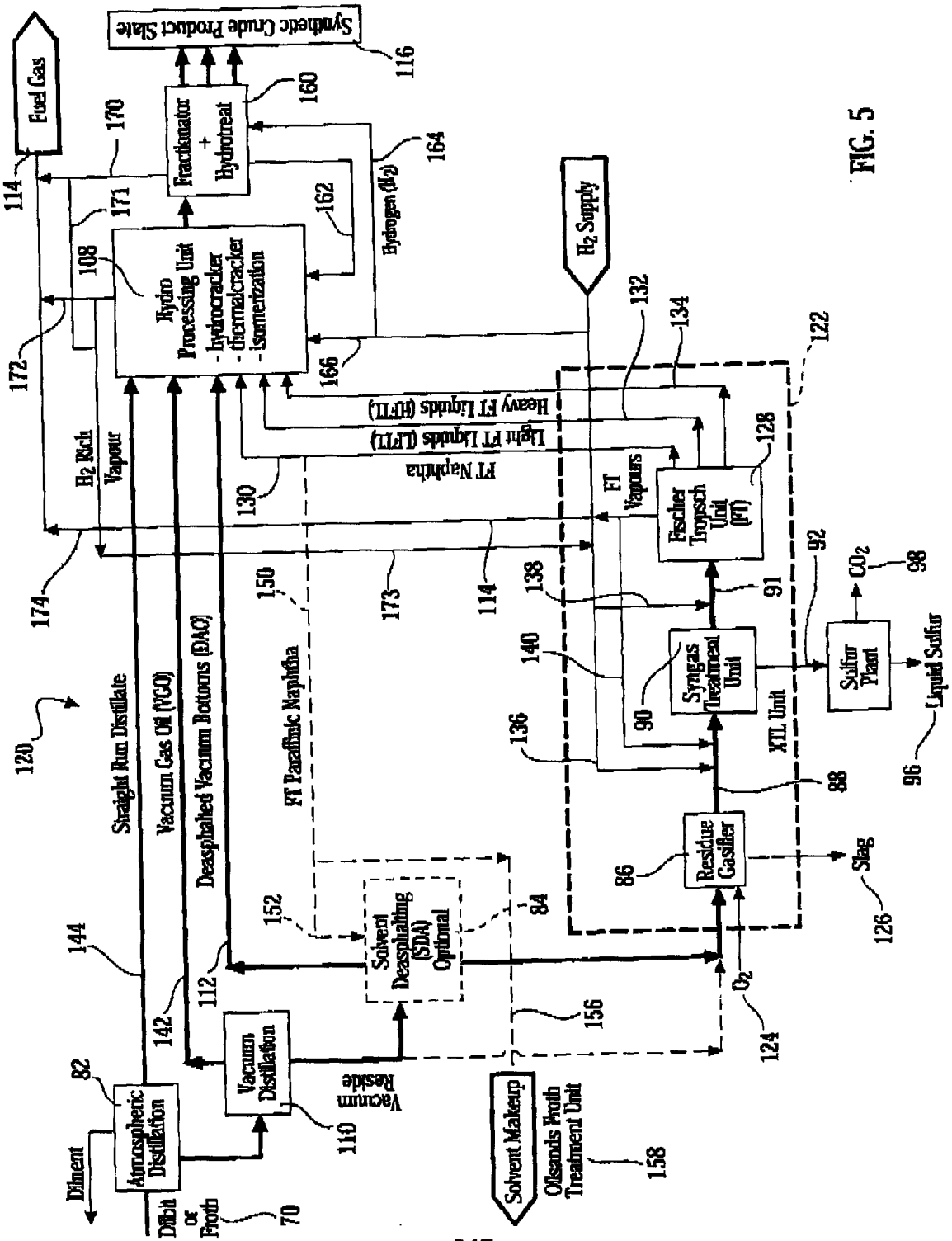

Synthetic Crude Product Slate
116
Fuel Gas
114
170
160
Fractionator + Hydrotreat
164
171
162
108
Hydro Processing Unit - hydrocracker - thermalcracker - isomerization
Hydrogen ($H_2$)
$H_2$ Supply
172
166
132
134
122
Heavy FT Liquids (HFTL)
Light FT Liquids (LFTL)
FT Naphtha
$H_2$ Rich Vapour
130
FT Vapours
128
Fischer Tropsch Unit (FT)
174
173
114
138
91
92
$CO_2$
98
150
120
Straight Run Distillate
Vacuum Gas Oil (VGO)
Deasphalted Vacuum Bottoms (DAO)
FT Paraffinic Naphtha
140
Syngas Treatment Unit
Sulfur Plant
Liquid Sulfur
96
90
136
XTL Unit
88
86
Residue Gasifier
Slag
126
152
Solvent Deasphalting (SDA) Optional
84
144
112
142
156
$O_2$
124
Vacuum Distillation
Vacuum Residue
82
Atmospheric Distillation
110
Diluent
Dilbit or Froth
70
Solvent Makeup
Oilsands Froth Treatment Unit
158

FIG. 5

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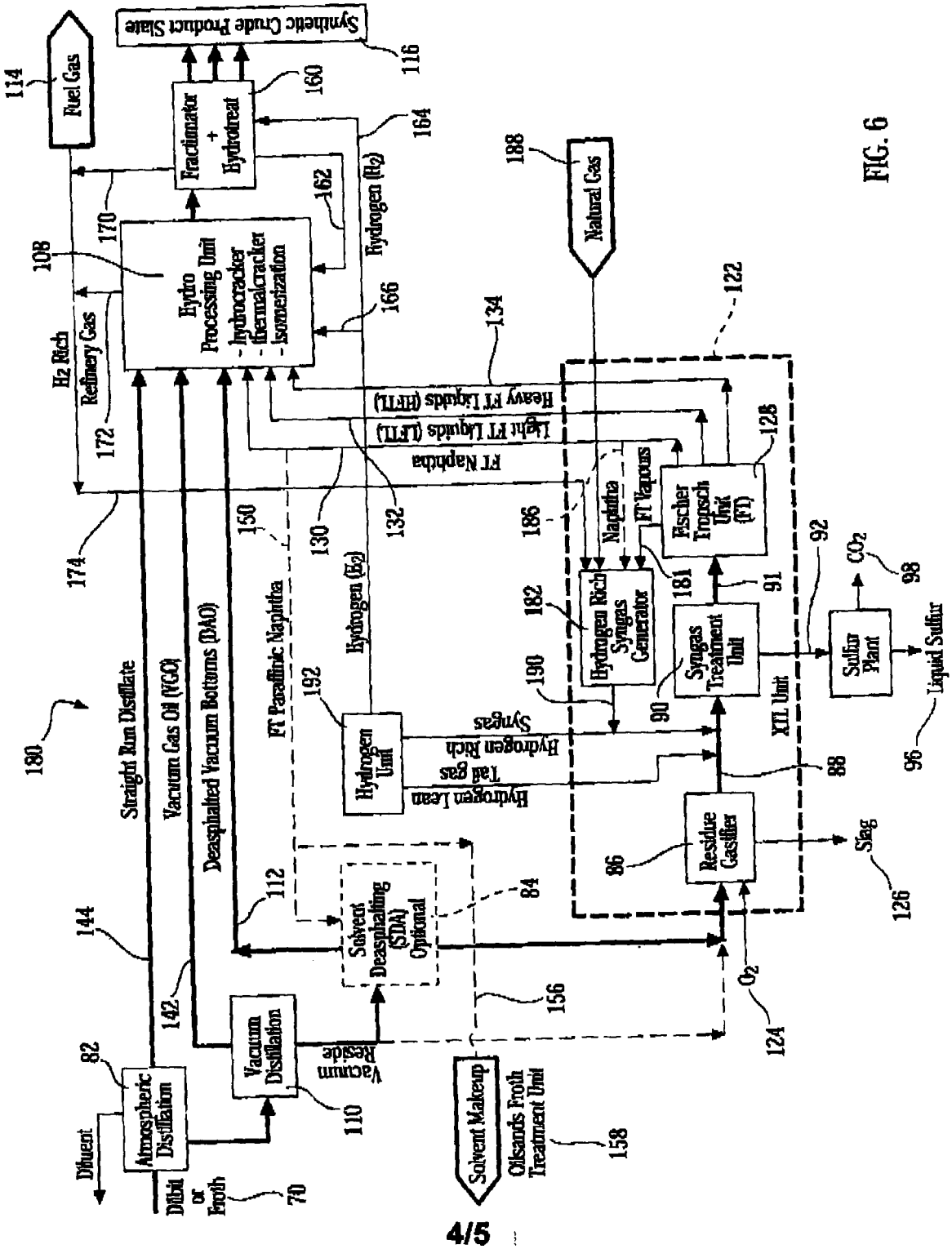

Synthetic Crude Product Slate
116
Fuel Gas
114
Fractionator + Hydrotreat
160
164
Hydrogen (H2)
162
Hydro Processing Unit - hydrocracker - thermalcracker - isomerization
108
170
Natural Gas
188
122
134
Heavy FT Liquids (HFTL)
Light FT Liquids (LFTL)
FT Naphtha
H2 Rich Refinery Gas
172
166
128
Fischer Tropsch Unit (FT)
FT Vapours
Naphtha
186
150
130
132
174
Hydrogen (H2)
182
Hydrogen Rich Syngas Generator
181
91
92
CO2
98
Syngas Treatment Unit
Sulfur Plant
Liquid Sulfur
96
190
90
XTL Unit
88
Hydrogen Unit
192
Syngas
Hydrogen Rich Tail Gas
Hydrogen Lean
180
Straight Run Distillate
Vacuum Gas Oil (VGO)
Deasphalted Vacuum Bottoms (DAO)
FT Paraffinic Naphtha
Residue Gasifier
86
Slag
126
112
Solvent Deasphalting (SDA) Optional
84
144
142
156
O2
124
Vacuum Distillation
Vacuum Residue
82
110
Atmospheric Distillation
Diluent
Dilbit or Froth
70
Solvent Makeup
Oilsands Froth Treatment Unit
158

FIG. 6

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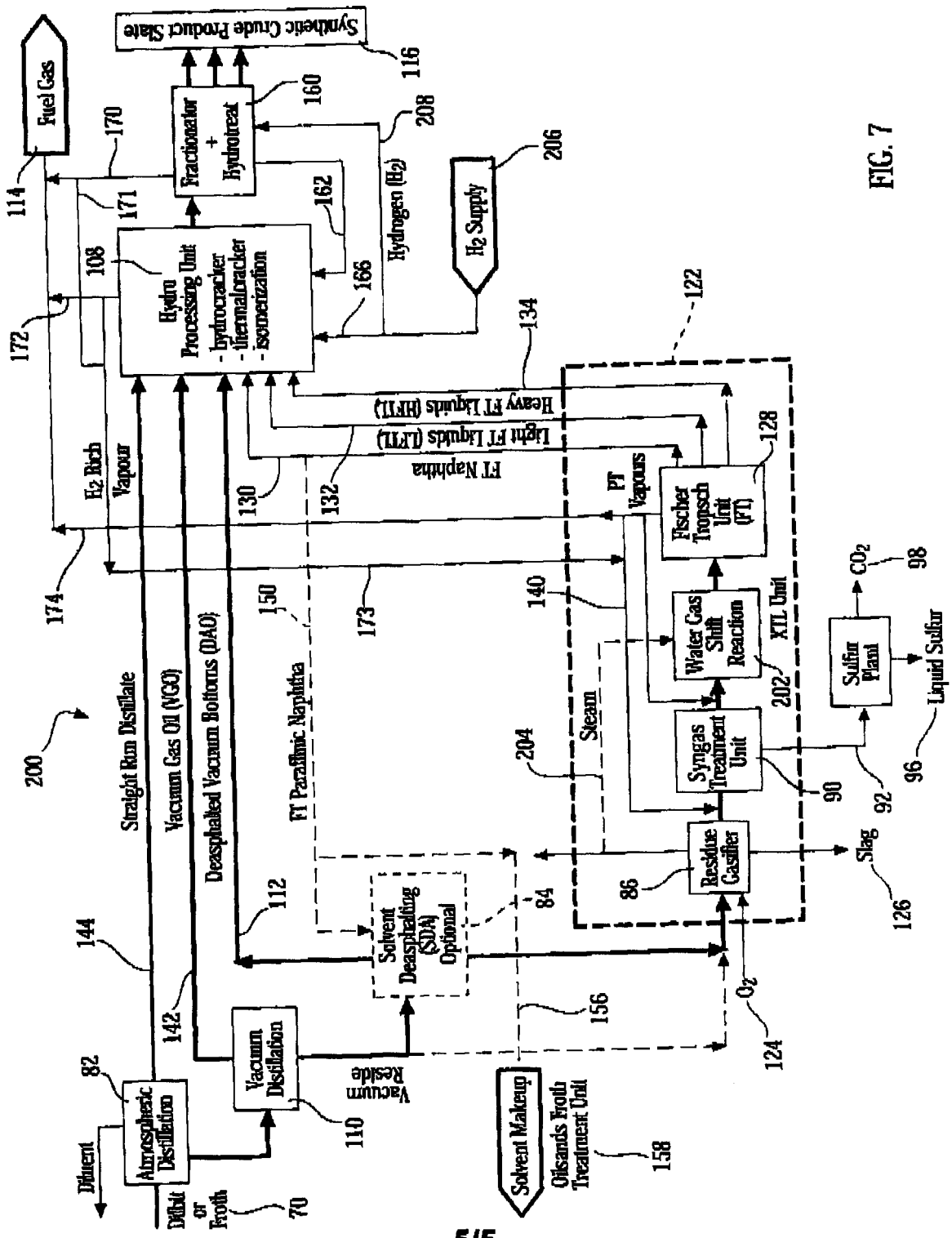

Synthetic Crude Product Slate
116
Fuel Gas
114
Fractionator + Hydrotreat
160
208
Hydrogen (H2)
H2 Supply
206
170
171
162
108
Hydro Processing Unit - hydrocracker - thermalcracker - isomerization
165
172
134
122
Heavy FT Liquids (HFTL)
Light FT Liquids (LFTL)
FT Naphtha
130
132
H2 Rich Vapour
FT Vapours
Fischer Tropsch Unit (FT)
128
174
150
173
140
CO2
98
Water Gas Shift Reaction
XTL Unit
202
Sulfur Plant
Liquid Sulfur
96
200
Straight Run Distillate
Vacuum Gas Oil (VGO)
Deasphalted Vacuum Bottoms (DAO)
FT Paraffinic Naphtha
Steam
204
Syngas Treatment Unit
90
92
Residue Gasifier
Slag
126
86
84
112
Solvent Deasphalting (SDA) Optional
144
142
156
O2
124
82
Vacuum Distillation
Vacuum Residue
Atmospheric Distillation
Diluent
Dilbit or Froth
70
110
Solvent Makeup
Oilsands Froth Treatment Unit
158

FIG. 7

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