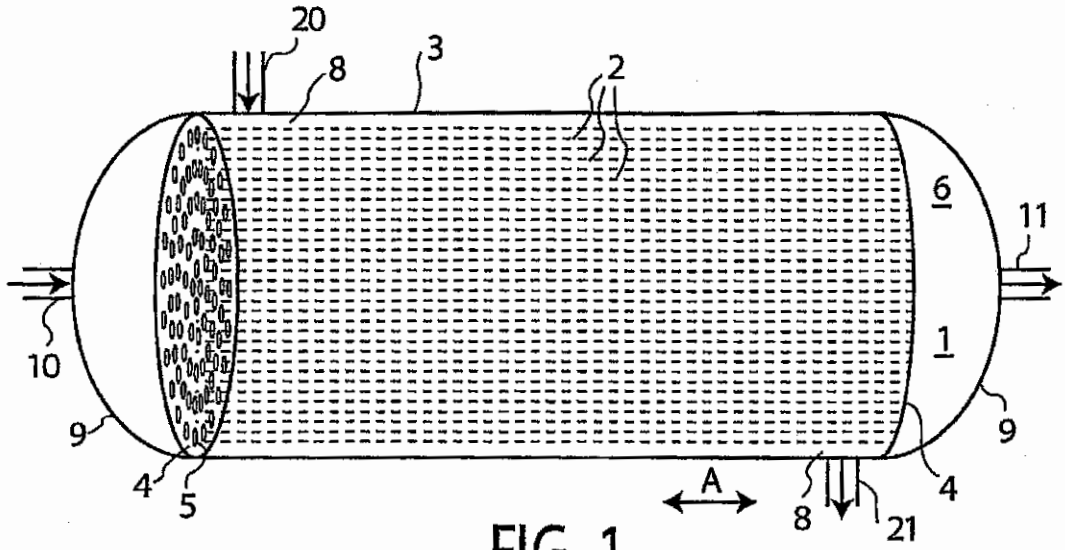


FIG. 1

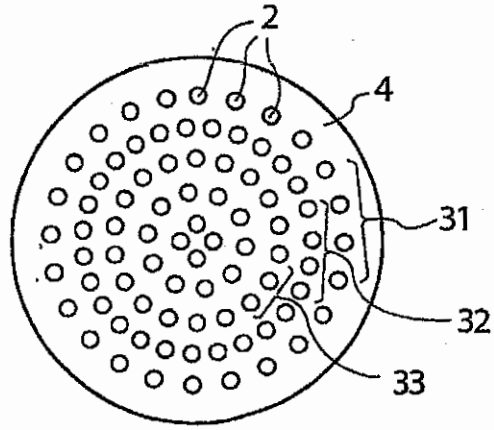


FIG. 2

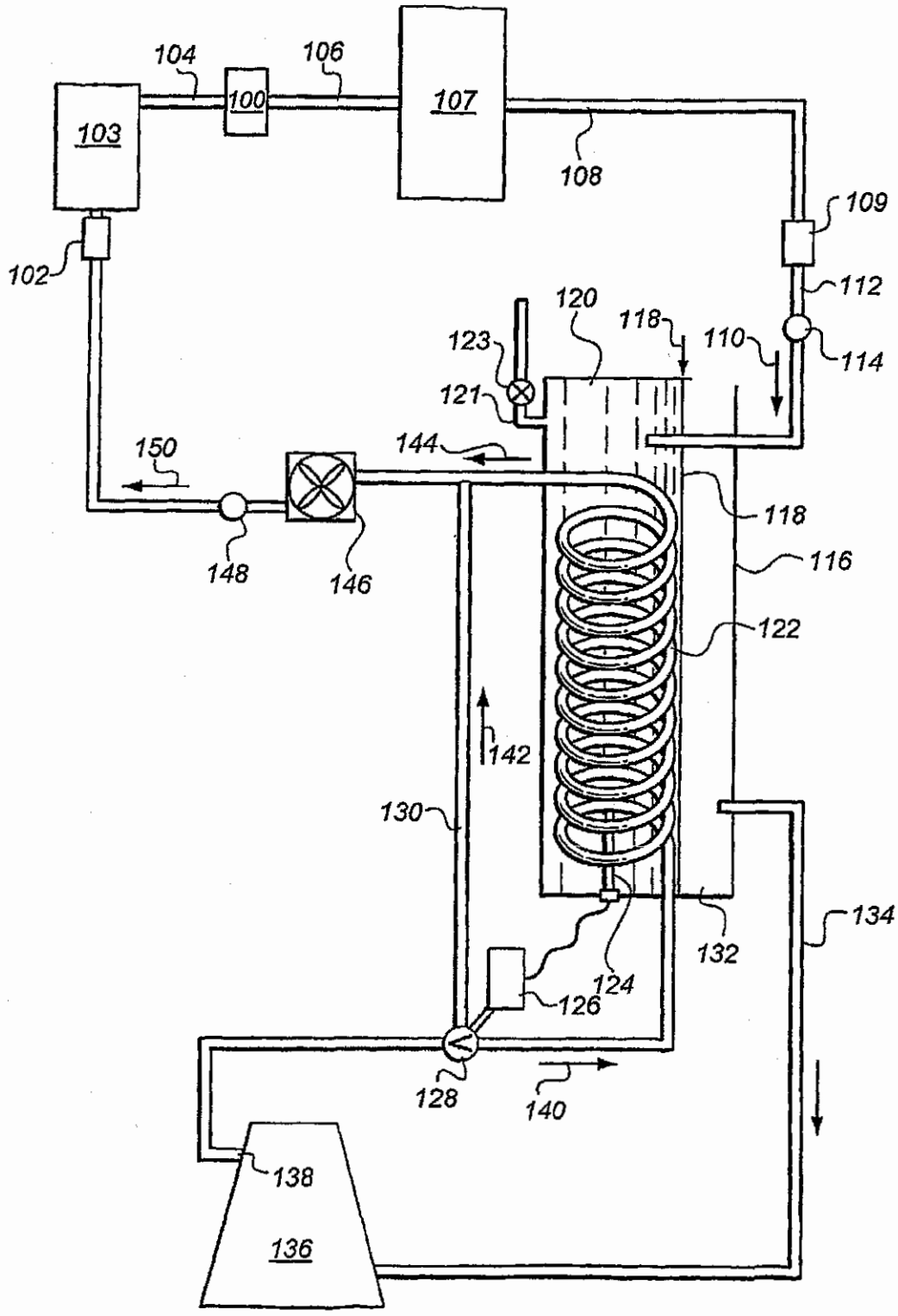

104
106
100
107
103
108
109
102
112
120
118
110
123
114
121
150
144
118
148
146
116
122
142
130
134
132
124
126
128
140
138
136

FIG. 3

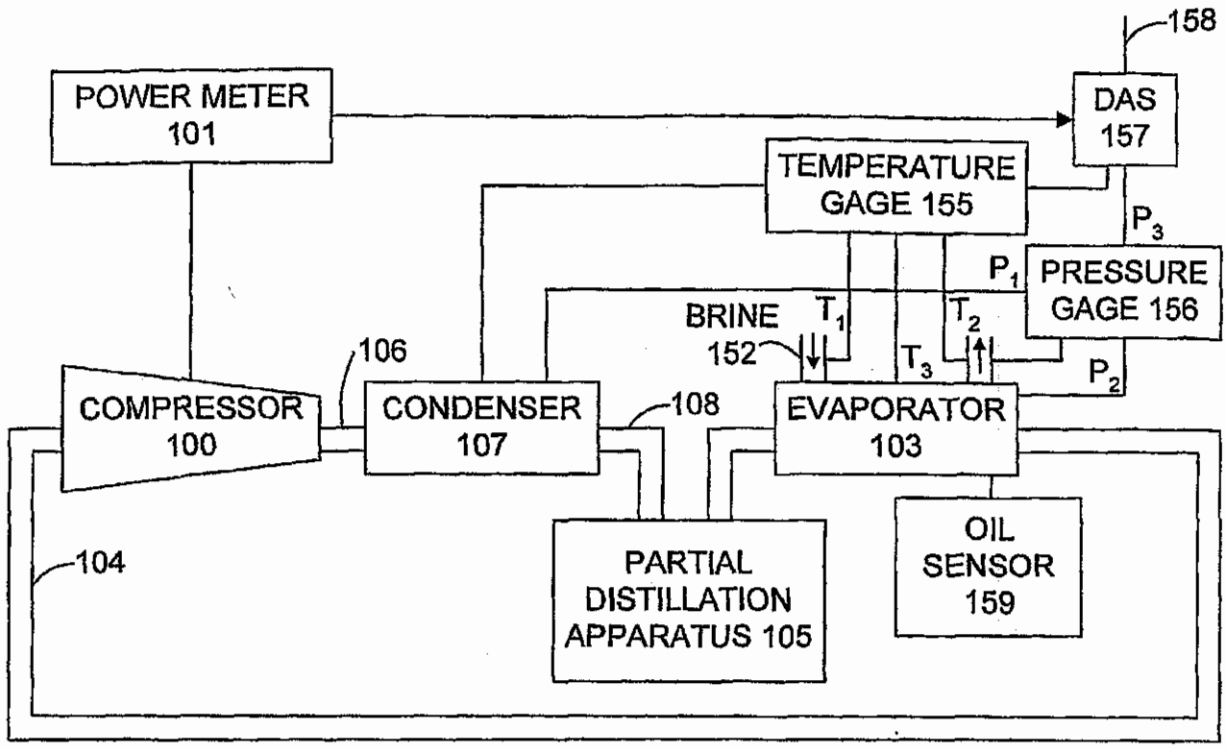

158
POWER METER
101
DAS
157
TEMPERATURE
GAGE 155
P3
P1
PRESSURE
GAGE 156
BRINE
152
T1
T2
T3
P2
106
COMPRESSOR
100
CONDENSER
107
108
EVAPORATOR
103
104
PARTIAL
DISTILLATION
APPARATUS 105
OIL
SENSOR
159

FIG. 4

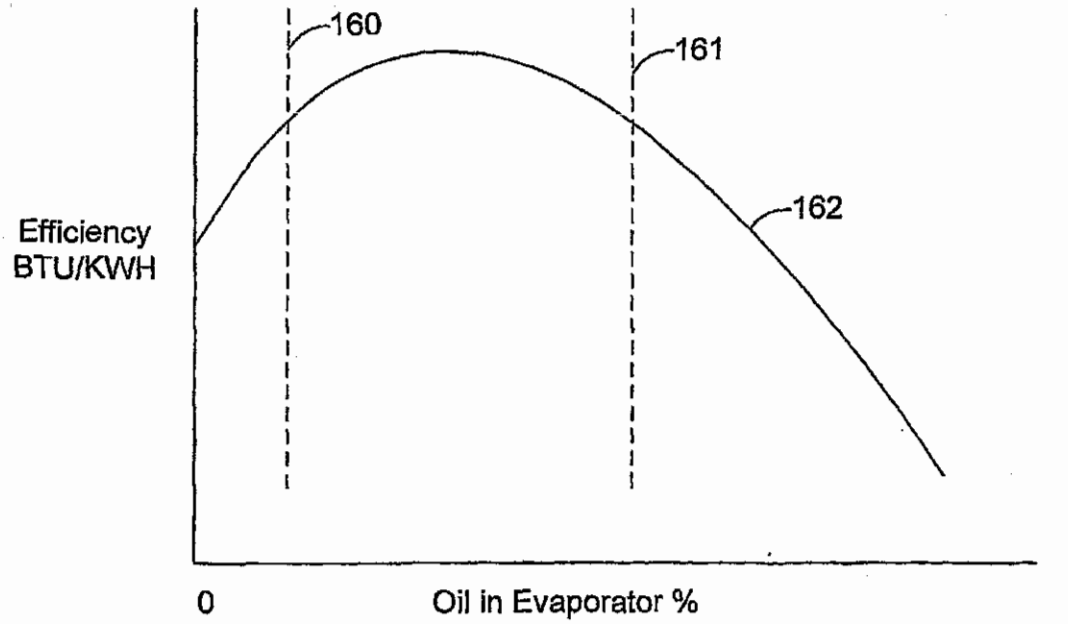

160
161
162
Efficiency
BTU/KWH
0
Oil in Evaporator %

FIG. 5

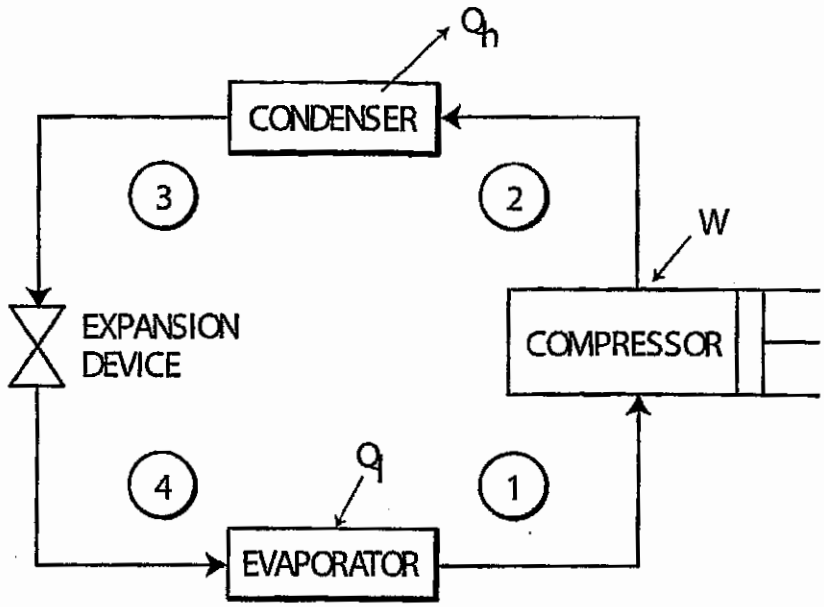

Q_h
CONDENSER
3
2
W
EXPANSION
DEVICE
COMPRESSOR
4
Q_l
1
EVAPORATOR

FIG. 6A

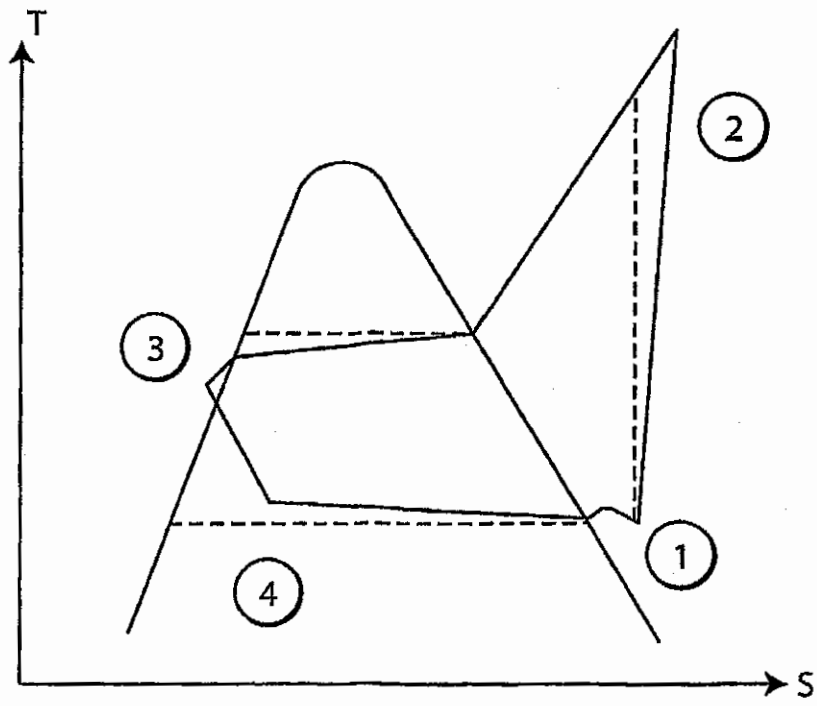

T
2
3
1
4
S

FIG. 6B

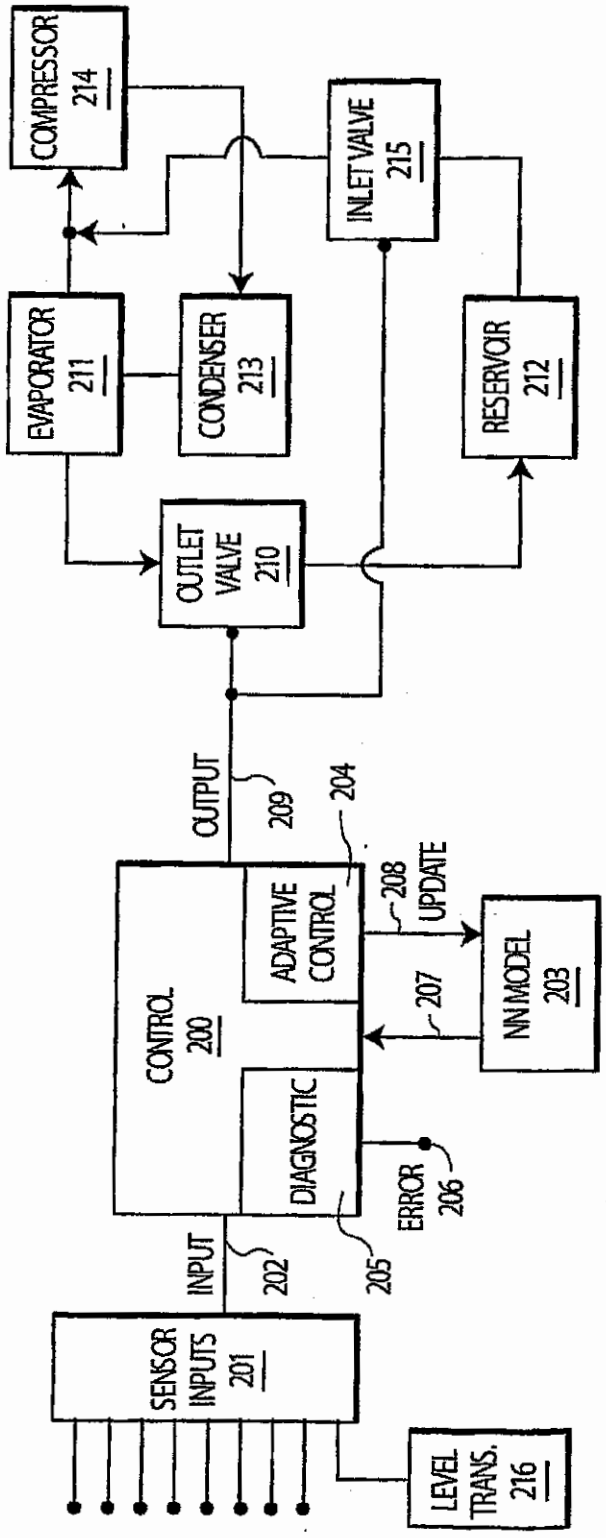

COMPRESSOR 214
INLET VALVE 215
EVAPORATOR 211
CONDENSER 213
RESERVOIR 212
OUTLET VALVE 210
OUTPUT 209
204
CONTROL 200
ADAPTIVE CONTROL
208 UPDATE
NN MODEL 203
207
DIAGNOSTIC
ERROR 206
205
INPUT 202
SENSOR INPUTS 201
LEVEL TRANS. 216

FIG. 7A

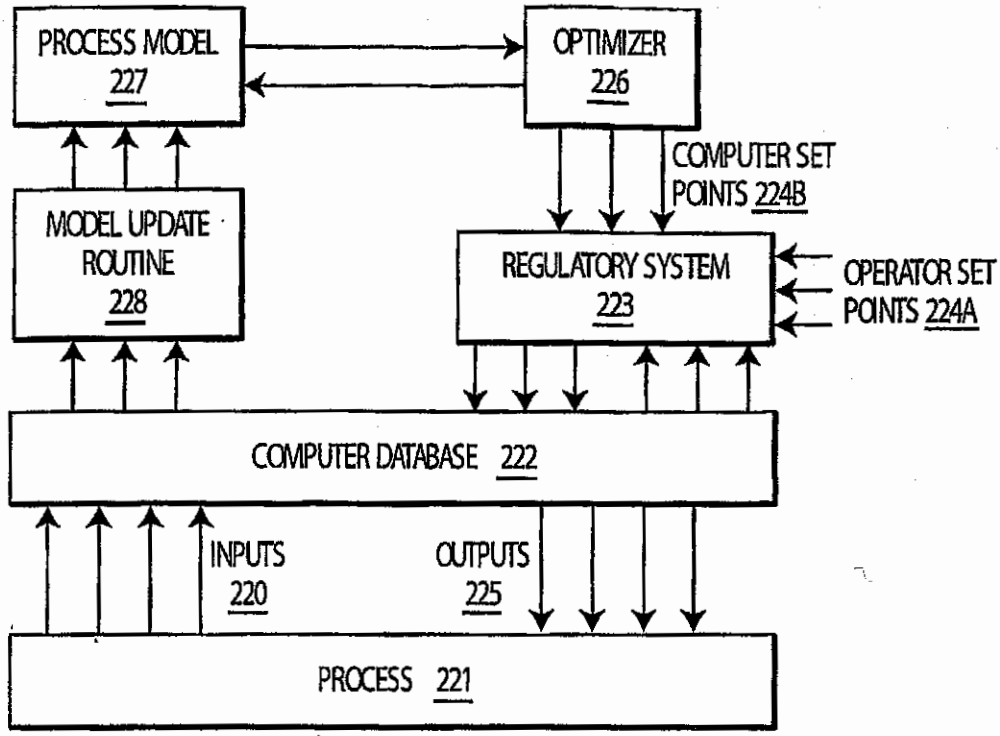

PROCESS MODEL
227
OPTIMIZER
226
COMPUTER SET
POINTS 224B
MODEL UPDATE
ROUTINE
228
REGULATORY SYSTEM
223
OPERATOR SET
POINTS 224A
COMPUTER DATABASE 222
INPUTS
220
OUTPUTS
225
PROCESS 221

FIG. 7B

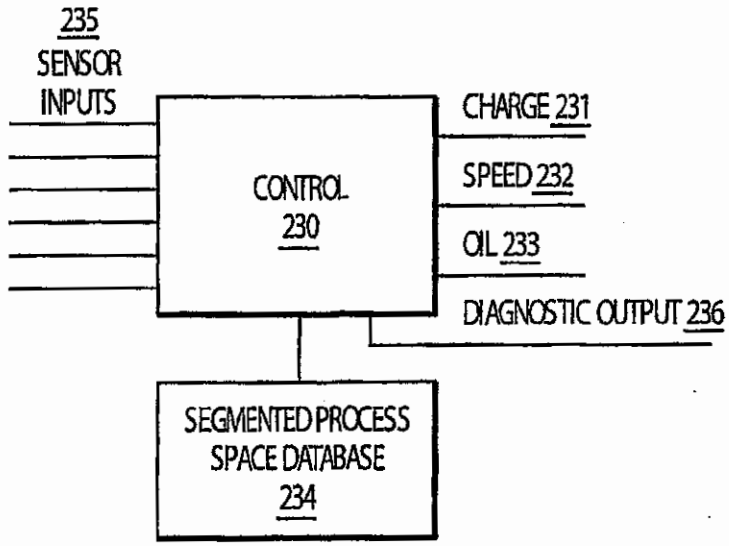

235
SENSOR
INPUTS
CONTROL
230
CHARGE 231
SPEED 232
OIL 233
DIAGNOSTIC OUTPUT 236
SEGMENTED PROCESS
SPACE DATABASE
234

FIG. 7C

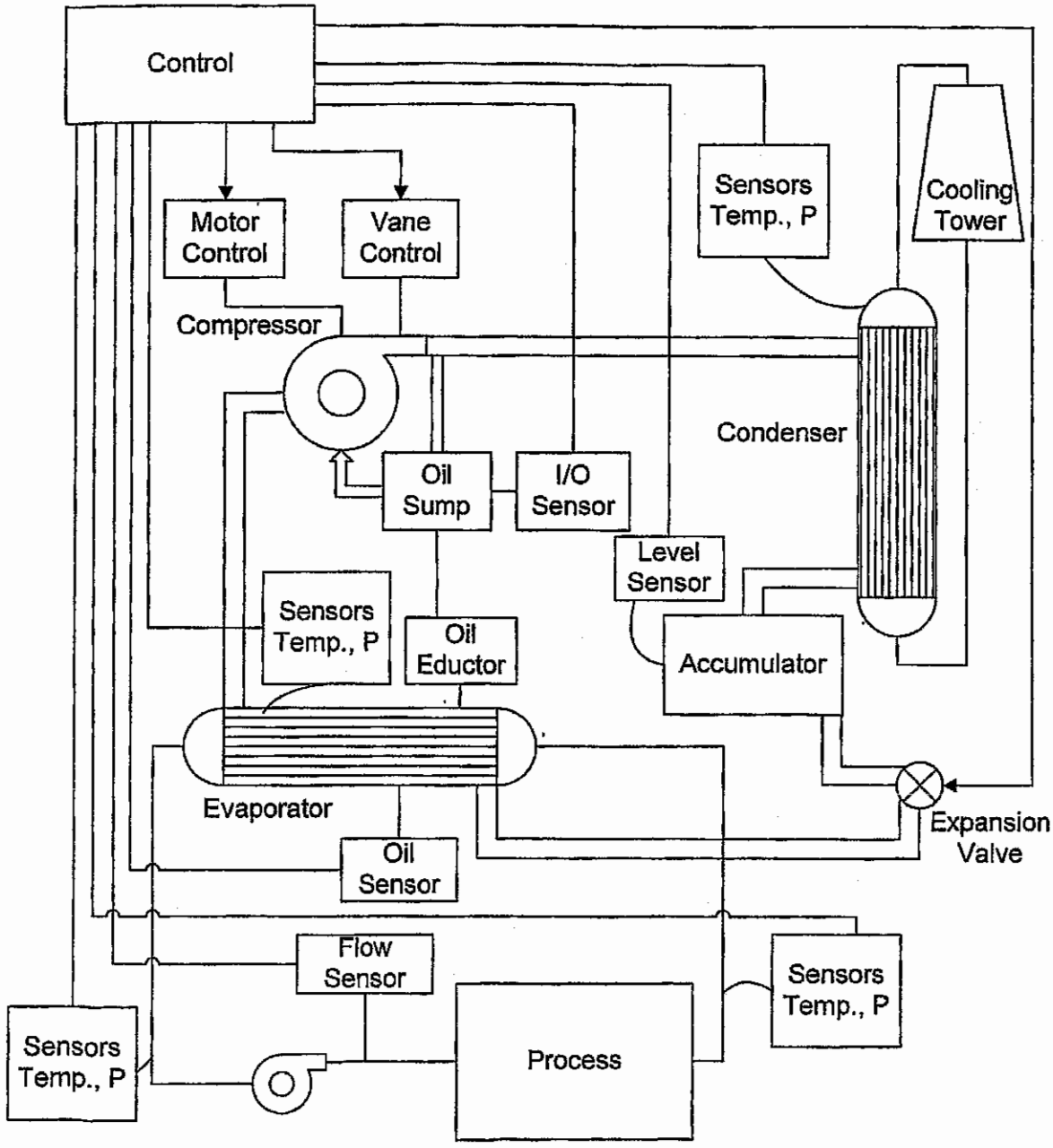

Control
Motor Control
Vane Control
Compressor
Sensors Temp., P
Cooling Tower
Condenser
Oil Sump
I/O Sensor
Level Sensor
Sensors Temp., P
Oil Eductor
Accumulator
Evaporator
Expansion Valve
Oil Sensor
Flow Sensor
Sensors Temp., P
Sensors Temp., P
Process

FIG. 8

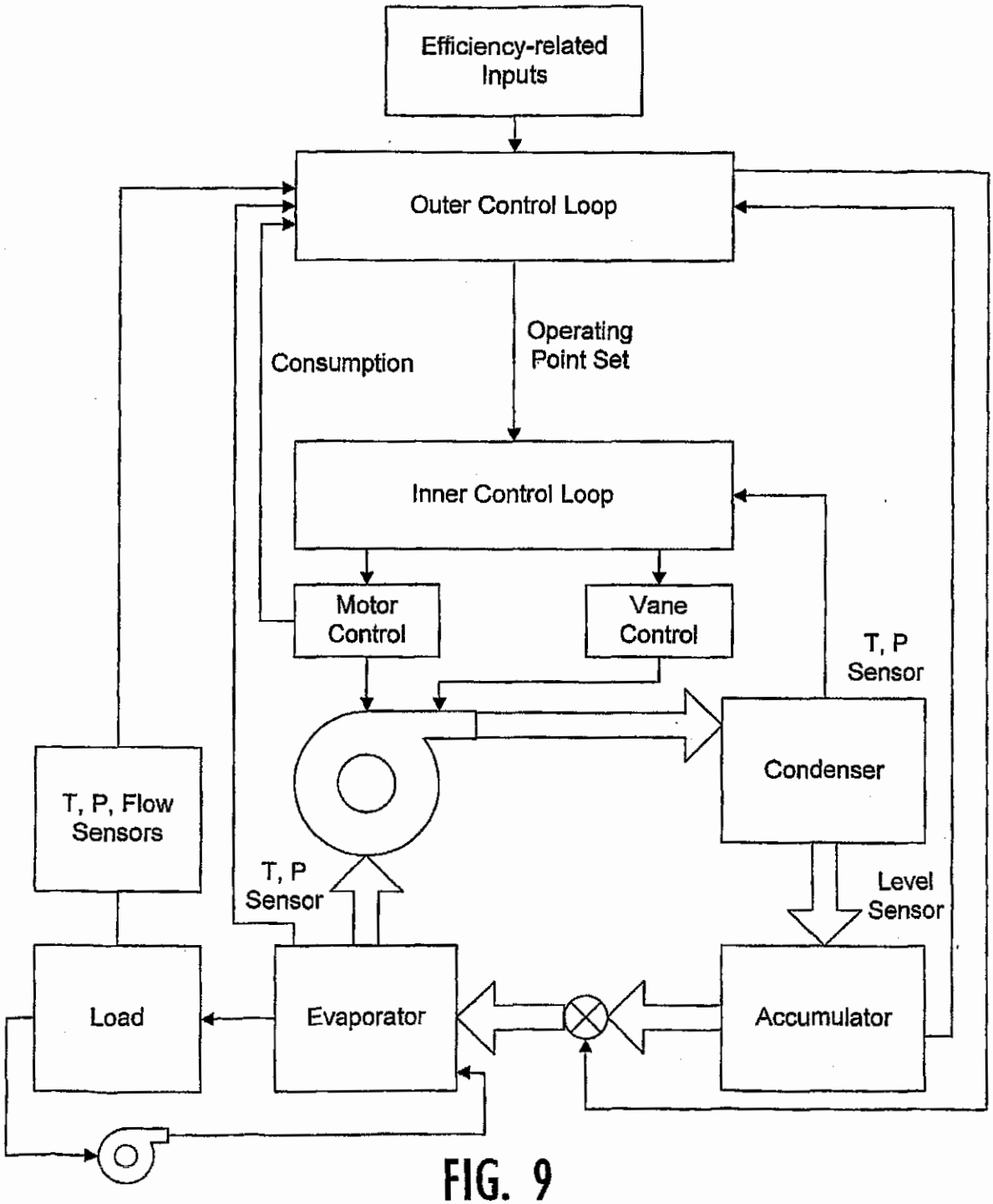

Efficiency-related Inputs
Outer Control Loop
Consumption
Operating Point Set
Inner Control Loop
Motor Control
Vane Control
T, P Sensor
Condenser
T, P, Flow Sensors
T, P Sensor
Level Sensor
Load
Evaporator
Accumulator

FIG. 9