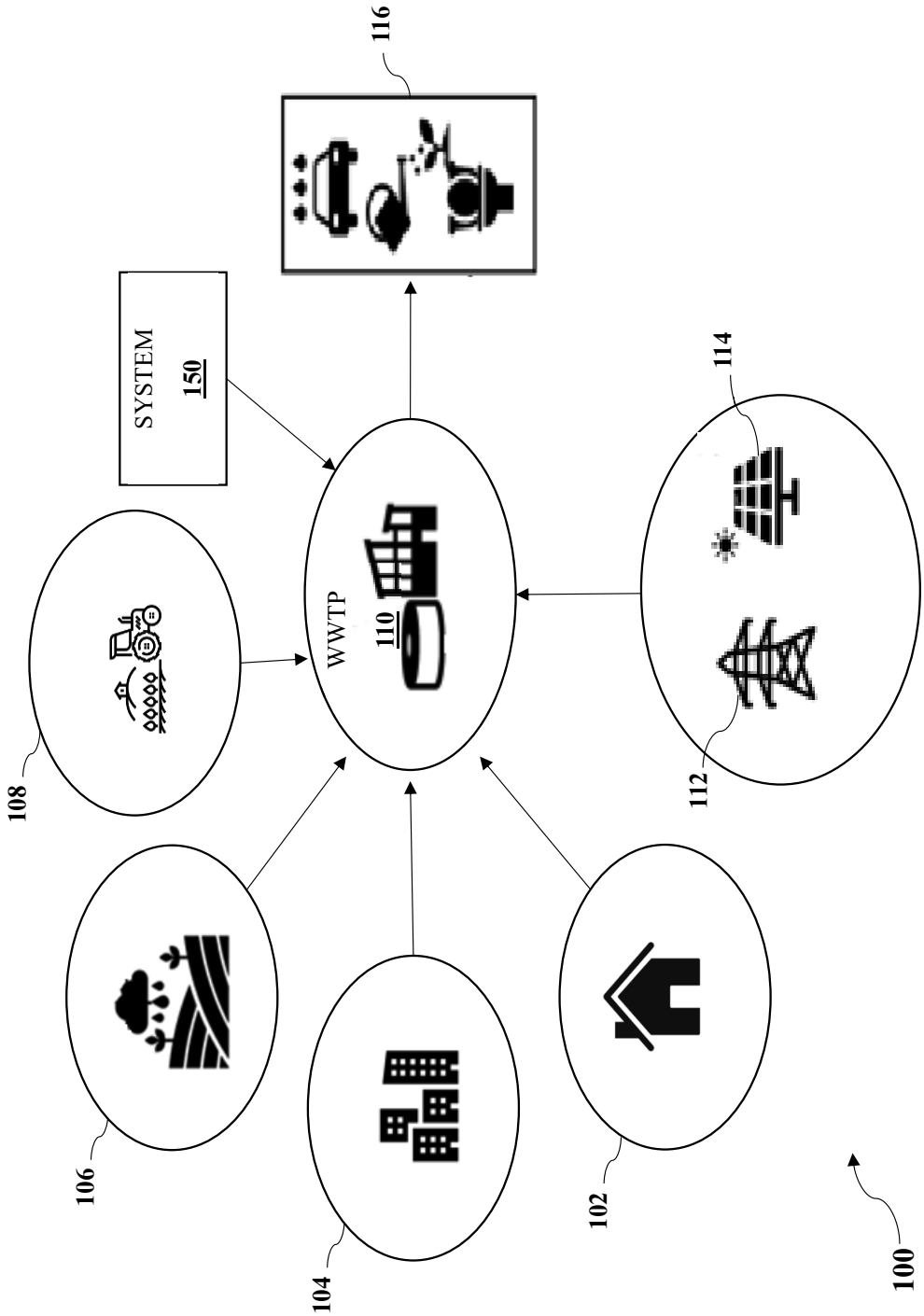


FIG. 1

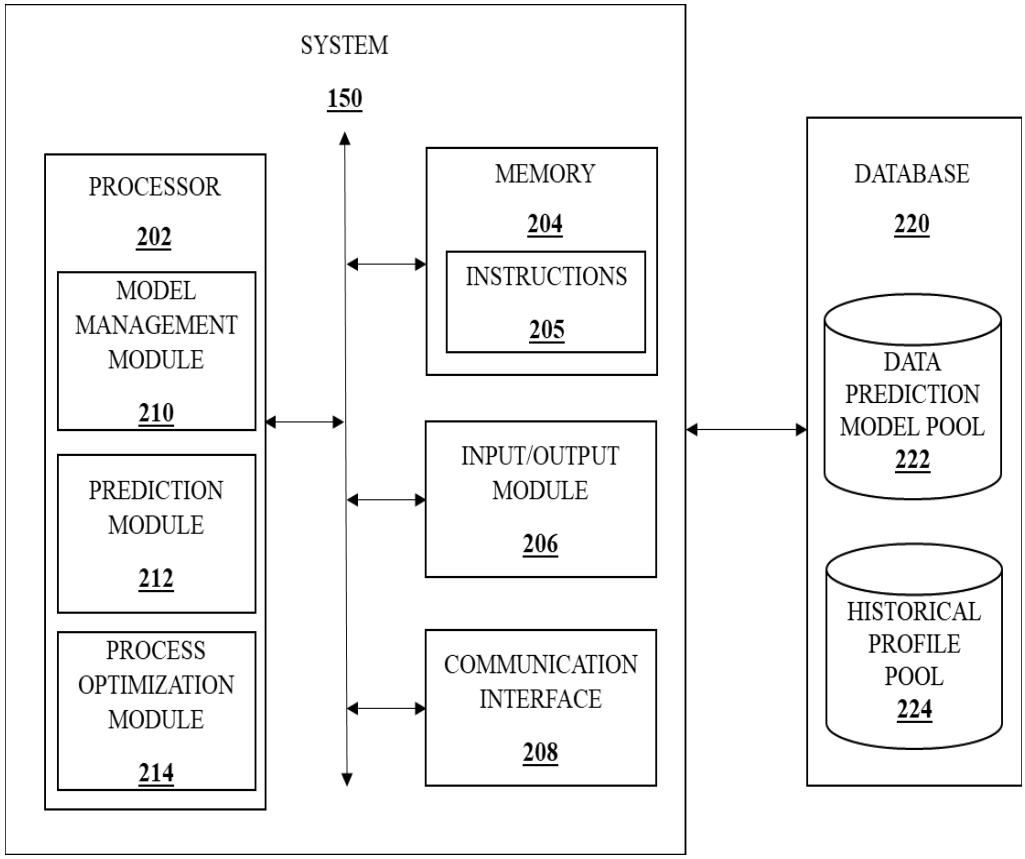

SYSTEM
150
PROCESSOR
202
MODEL MANAGEMENT MODULE
210
PREDICTION MODULE
212
PROCESS OPTIMIZATION MODULE
214
MEMORY
204
INSTRUCTIONS
205
INPUT/OUTPUT MODULE
206
COMMUNICATION INTERFACE
208
DATABASE
220
DATA PREDICTION MODEL POOL
222
HISTORICAL PROFILE POOL
224

FIG. 2

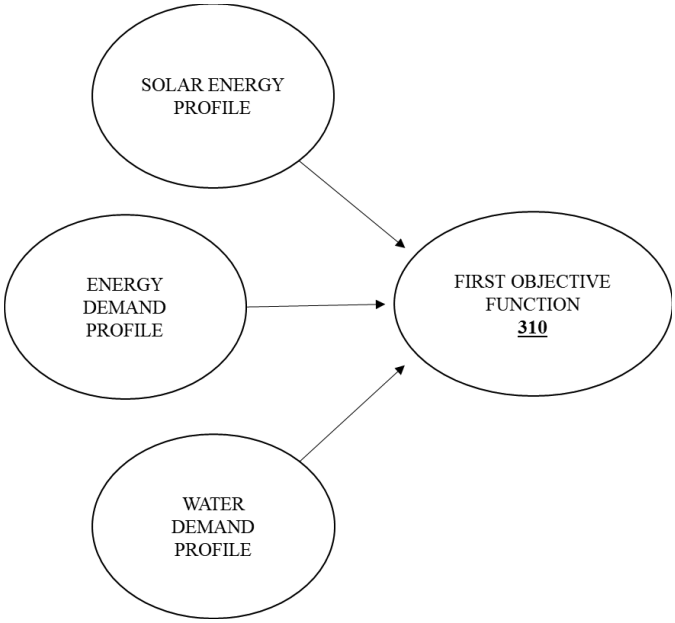

SOLAR ENERGY PROFILE
ENERGY DEMAND PROFILE
WATER DEMAND PROFILE
FIRST OBJECTIVE FUNCTION
310

FIG. 3A

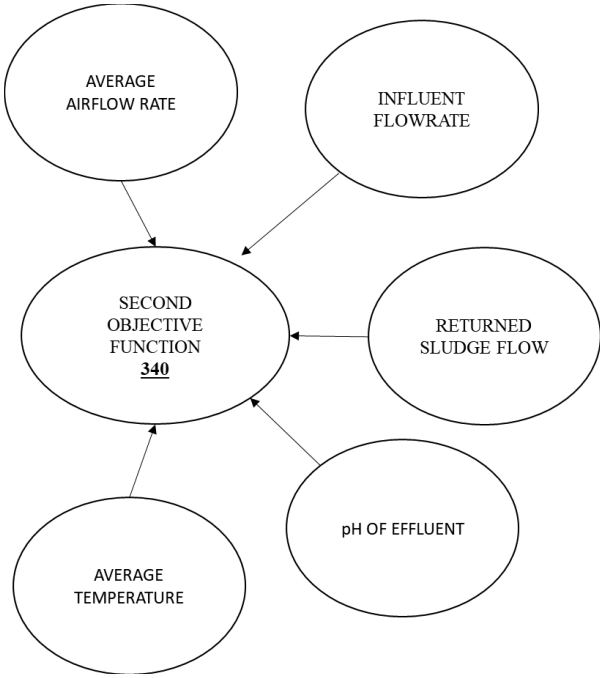

AVERAGE AIRFLOW RATE
INFLUENT FLOWRATE
SECOND OBJECTIVE FUNCTION
340
RETURNED SLUDGE FLOW
pH OF EFFLUENT
AVERAGE TEMPERATURE

FIG. 3B

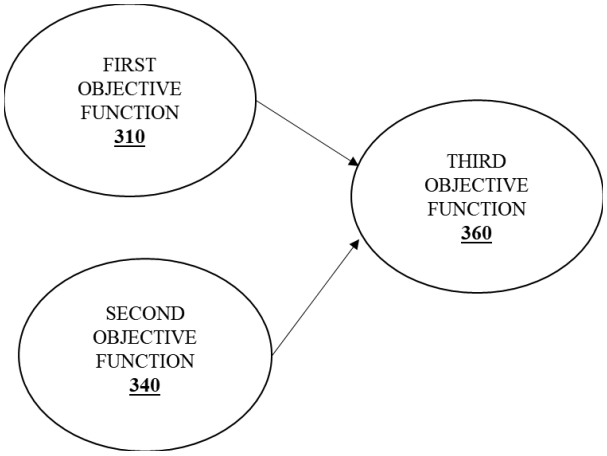

FIRST
OBJECTIVE
FUNCTION
310
SECOND
OBJECTIVE
FUNCTION
340
THIRD
OBJECTIVE
FUNCTION
360

FIG. 3C

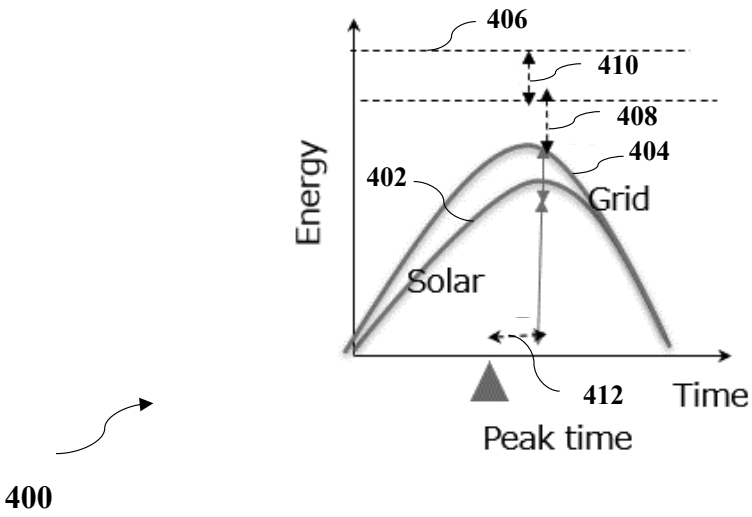

406
410
408
404
402
Grid
Solar
Energy
412
Time
Peak time
400

FIG. 4

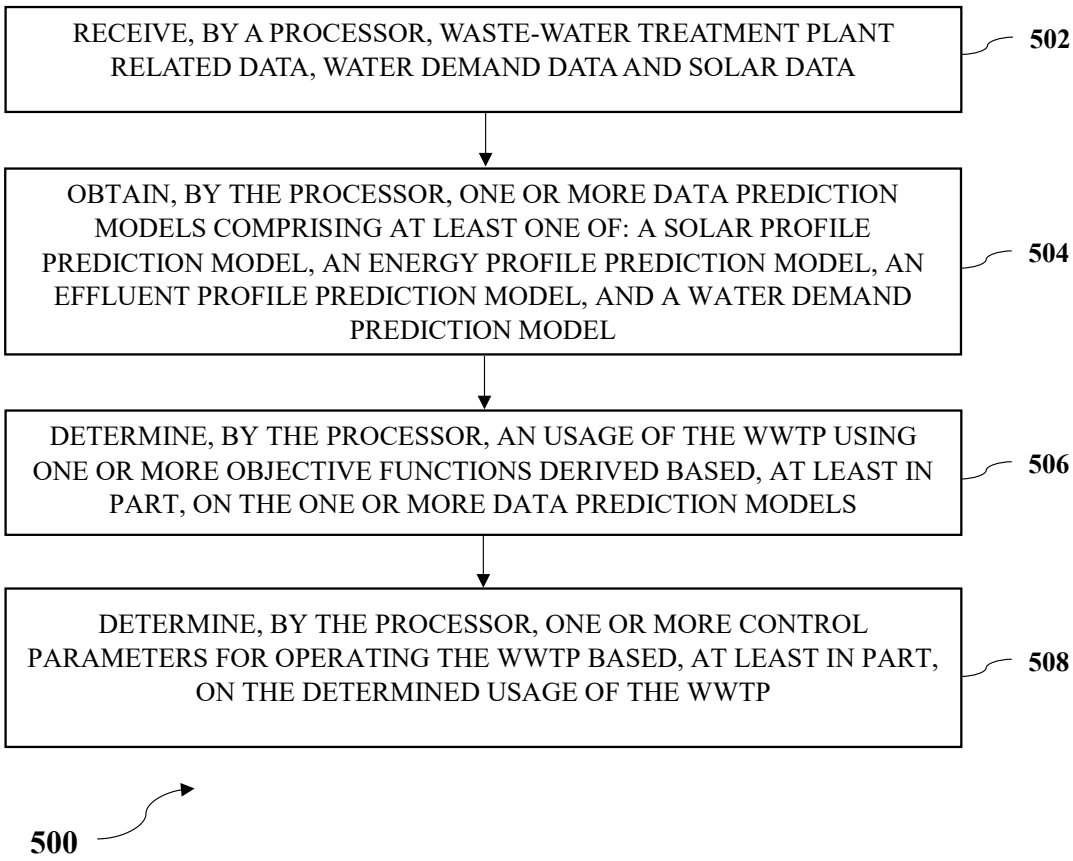

RECEIVE, BY A PROCESSOR, WASTE-WATER TREATMENT PLANT RELATED DATA, WATER DEMAND DATA AND SOLAR DATA
502
OBTAIN, BY THE PROCESSOR, ONE OR MORE DATA PREDICTION MODELS COMPRISING AT LEAST ONE OF: A SOLAR PROFILE PREDICTION MODEL, AN ENERGY PROFILE PREDICTION MODEL, AN EFFLUENT PROFILE PREDICTION MODEL, AND A WATER DEMAND PREDICTION MODEL
504
DETERMINE, BY THE PROCESSOR, AN USAGE OF THE WWTP USING ONE OR MORE OBJECTIVE FUNCTIONS DERIVED BASED, AT LEAST IN PART, ON THE ONE OR MORE DATA PREDICTION MODELS
506
DETERMINE, BY THE PROCESSOR, ONE OR MORE CONTROL PARAMETERS FOR OPERATING THE WWTP BASED, AT LEAST IN PART, ON THE DETERMINED USAGE OF THE WWTP
508
500

FIG. 5

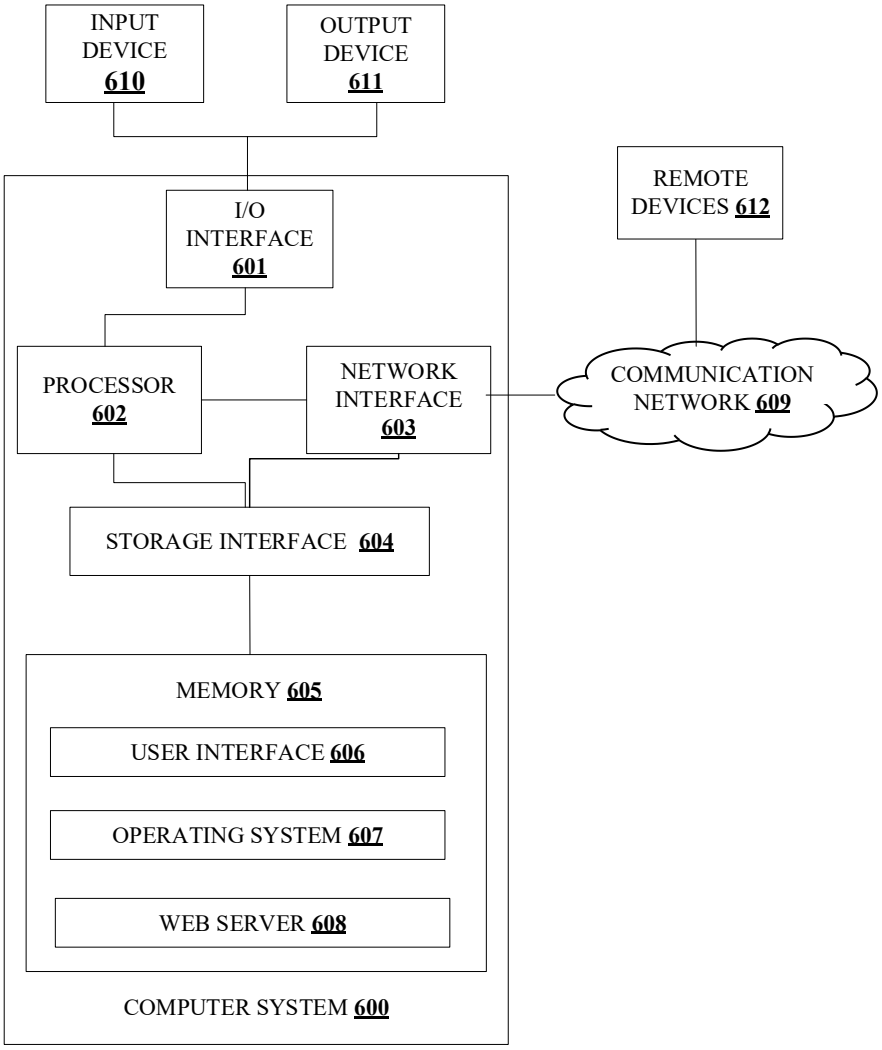

INPUT DEVICE 610
OUTPUT DEVICE 611
REMOTE DEVICES 612
I/O INTERFACE 601
PROCESSOR 602
NETWORK INTERFACE 603
COMMUNICATION NETWORK 609
STORAGE INTERFACE 604
MEMORY 605
USER INTERFACE 606
OPERATING SYSTEM 607
WEB SERVER 608
COMPUTER SYSTEM 600

FIG. 6