FIG. 1

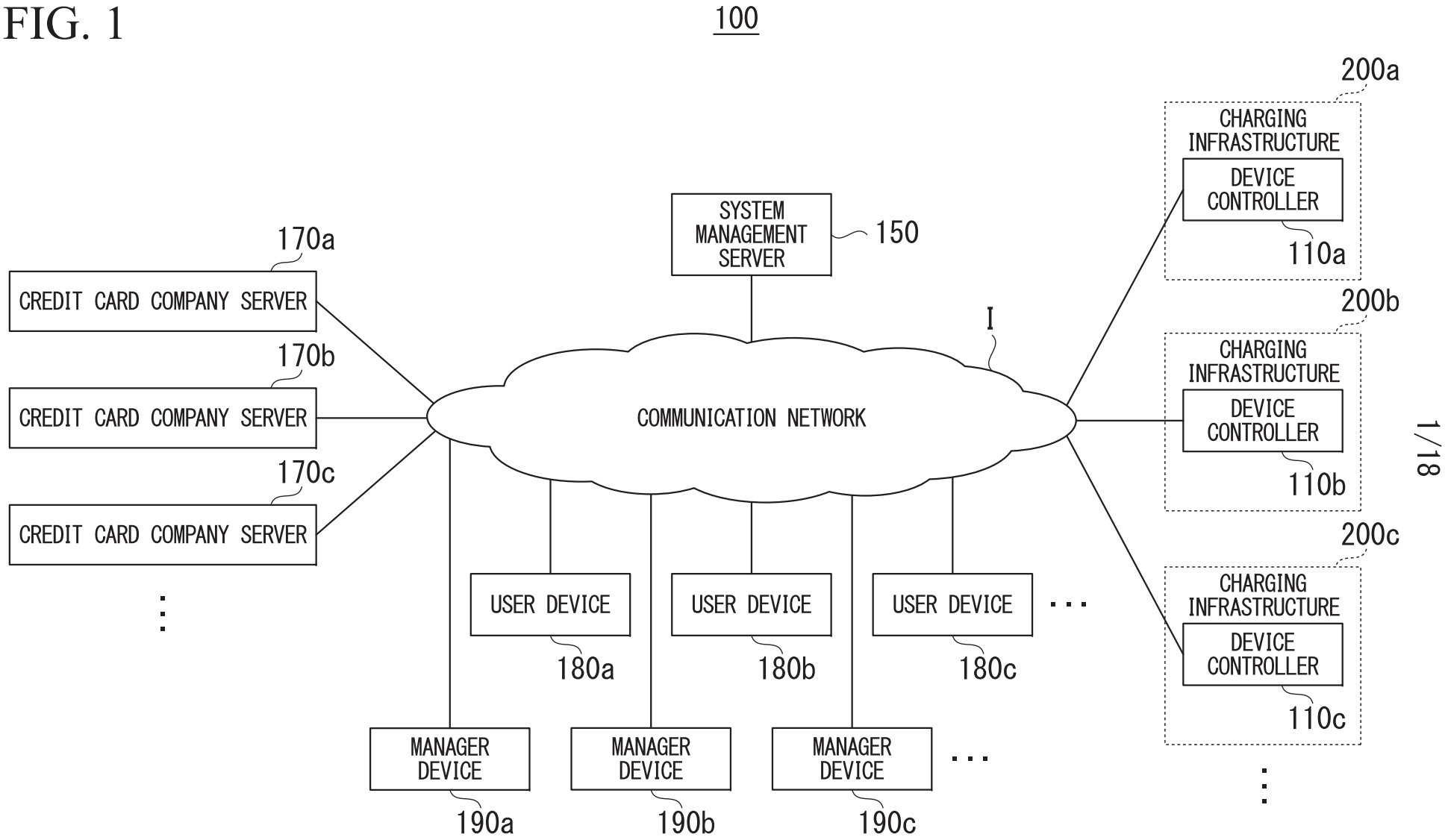

100
200a
CHARGING INFRASTRUCTURE
DEVICE CONTROLLER
110a
SYSTEM MANAGEMENT SERVER
150
170a
CREDIT CARD COMPANY SERVER
I
200b
CHARGING INFRASTRUCTURE
DEVICE CONTROLLER
110b
170b
CREDIT CARD COMPANY SERVER
COMMUNICATION NETWORK
170c
CREDIT CARD COMPANY SERVER
200c
CHARGING INFRASTRUCTURE
DEVICE CONTROLLER
110c
USER DEVICE
USER DEVICE
USER DEVICE
180a
180b
180c
MANAGER DEVICE
MANAGER DEVICE
MANAGER DEVICE
190a
190b
190c

FIG. 2

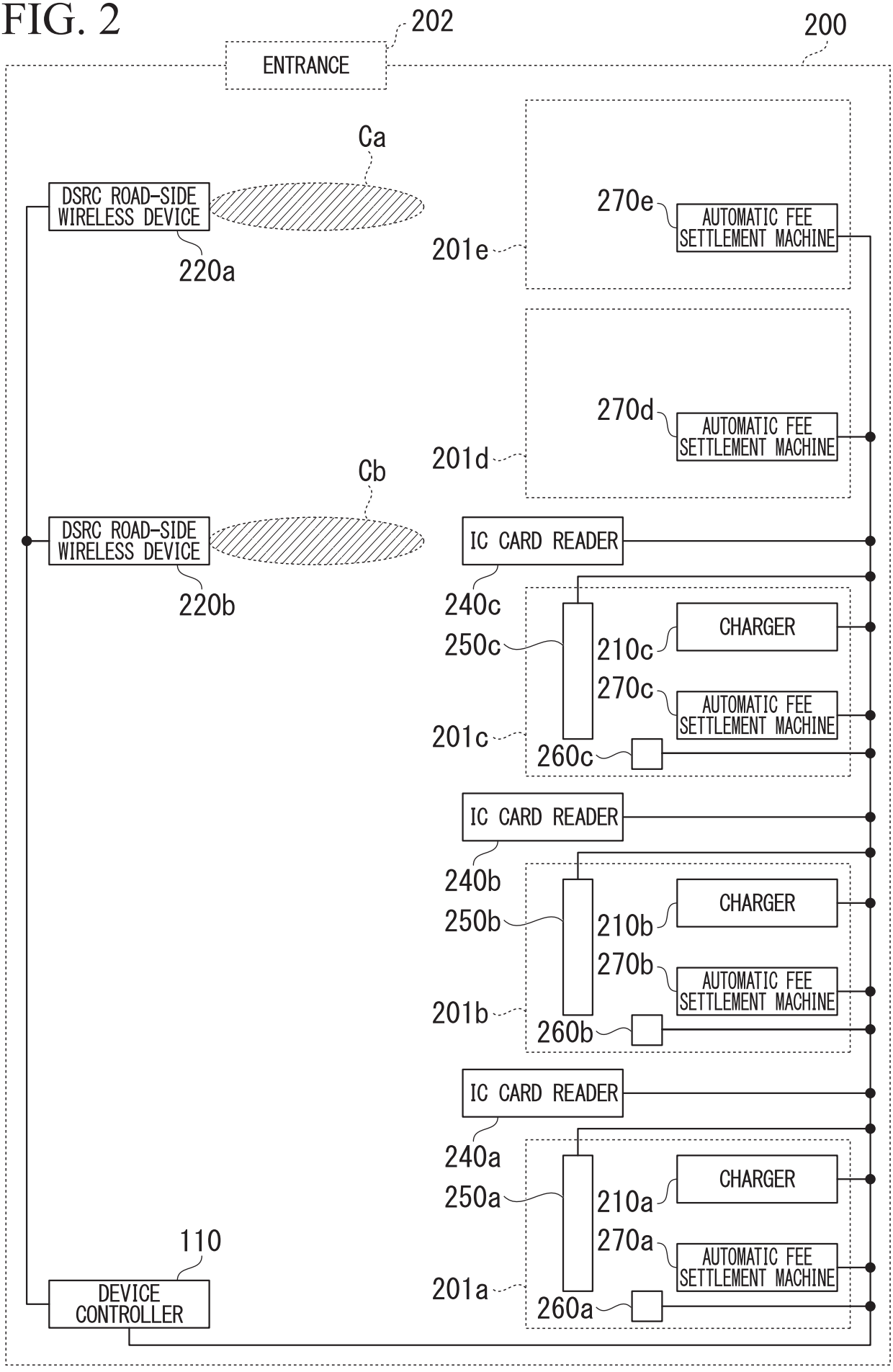

202
200
ENTRANCE
Ca
DSRC ROAD-SIDE WIRELESS DEVICE
220a
270e
AUTOMATIC FEE SETTLEMENT MACHINE
201e
270d
AUTOMATIC FEE SETTLEMENT MACHINE
201d
Cb
DSRC ROAD-SIDE WIRELESS DEVICE
220b
IC CARD READER
240c
250c
210c
CHARGER
270c
AUTOMATIC FEE SETTLEMENT MACHINE
201c
260c
IC CARD READER
240b
250b
210b
CHARGER
270b
AUTOMATIC FEE SETTLEMENT MACHINE
201b
260b
IC CARD READER
240a
250a
210a
CHARGER
270a
AUTOMATIC FEE SETTLEMENT MACHINE
201a
260a
110
DEVICE CONTROLLER

FIG. 3

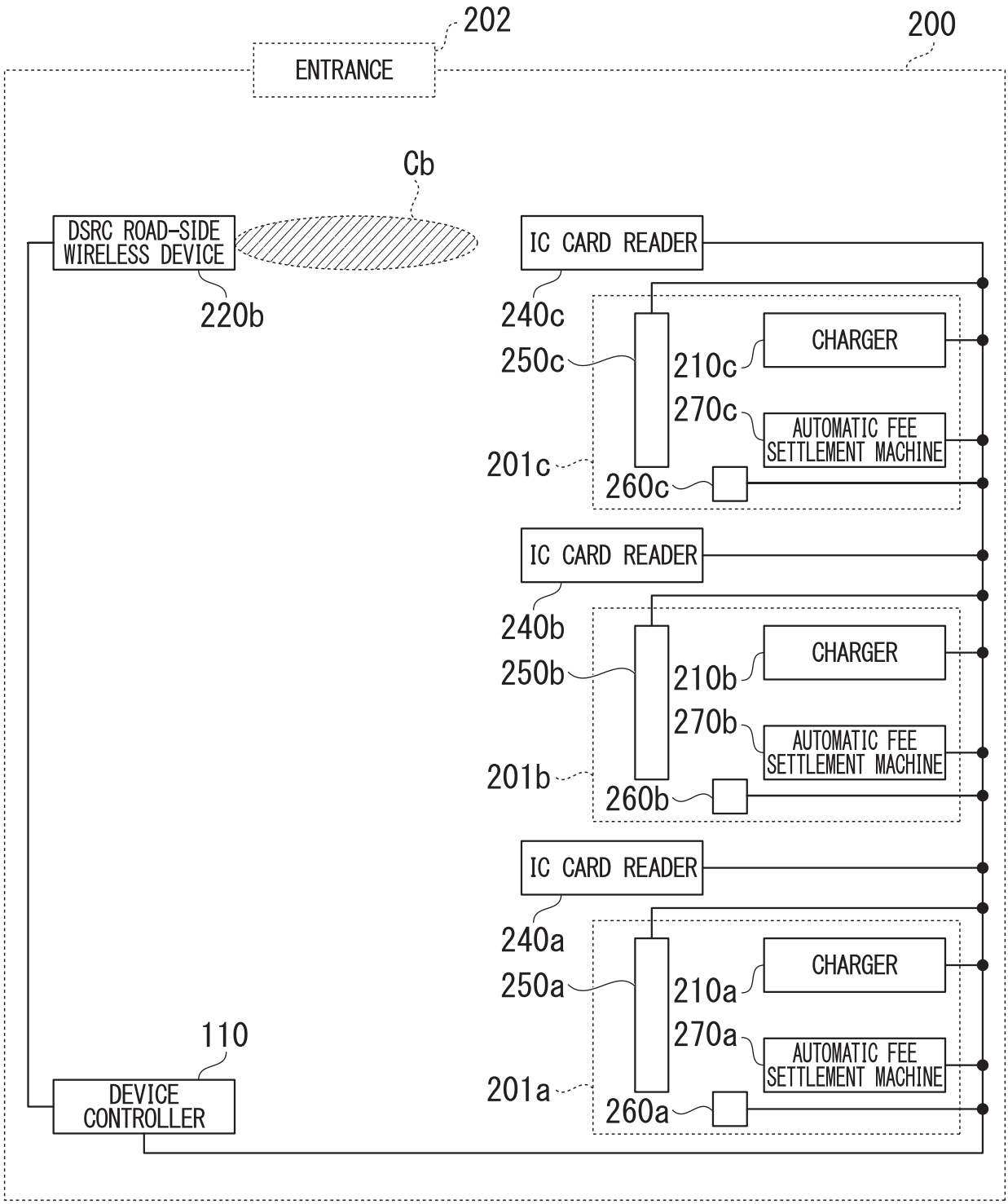

202
200
ENTRANCE
Cb
DSRC ROAD-SIDE WIRELESS DEVICE
220b
IC CARD READER
240c
250c
210c
CHARGER
270c
AUTOMATIC FEE SETTLEMENT MACHINE
201c
260c
IC CARD READER
240b
250b
210b
CHARGER
270b
AUTOMATIC FEE SETTLEMENT MACHINE
201b
260b
IC CARD READER
240a
250a
210a
CHARGER
270a
AUTOMATIC FEE SETTLEMENT MACHINE
201a
260a
110
DEVICE CONTROLLER

FIG. 4

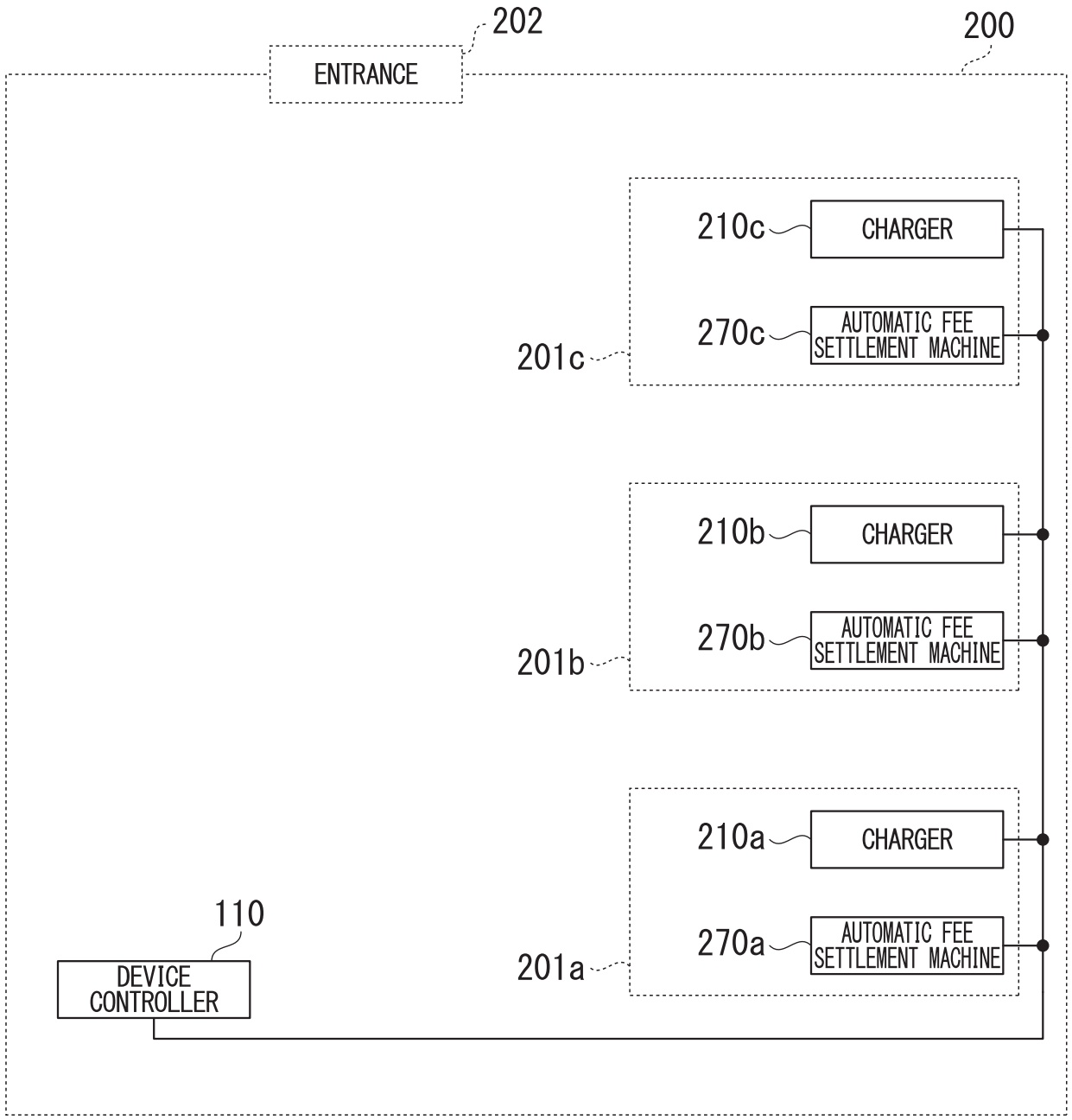

202
200
ENTRANCE
210c
CHARGER
270c
AUTOMATIC FEE SETTLEMENT MACHINE
201c
210b
CHARGER
270b
AUTOMATIC FEE SETTLEMENT MACHINE
201b
210a
CHARGER
270a
AUTOMATIC FEE SETTLEMENT MACHINE
201a
110
DEVICE CONTROLLER

FIG. 5

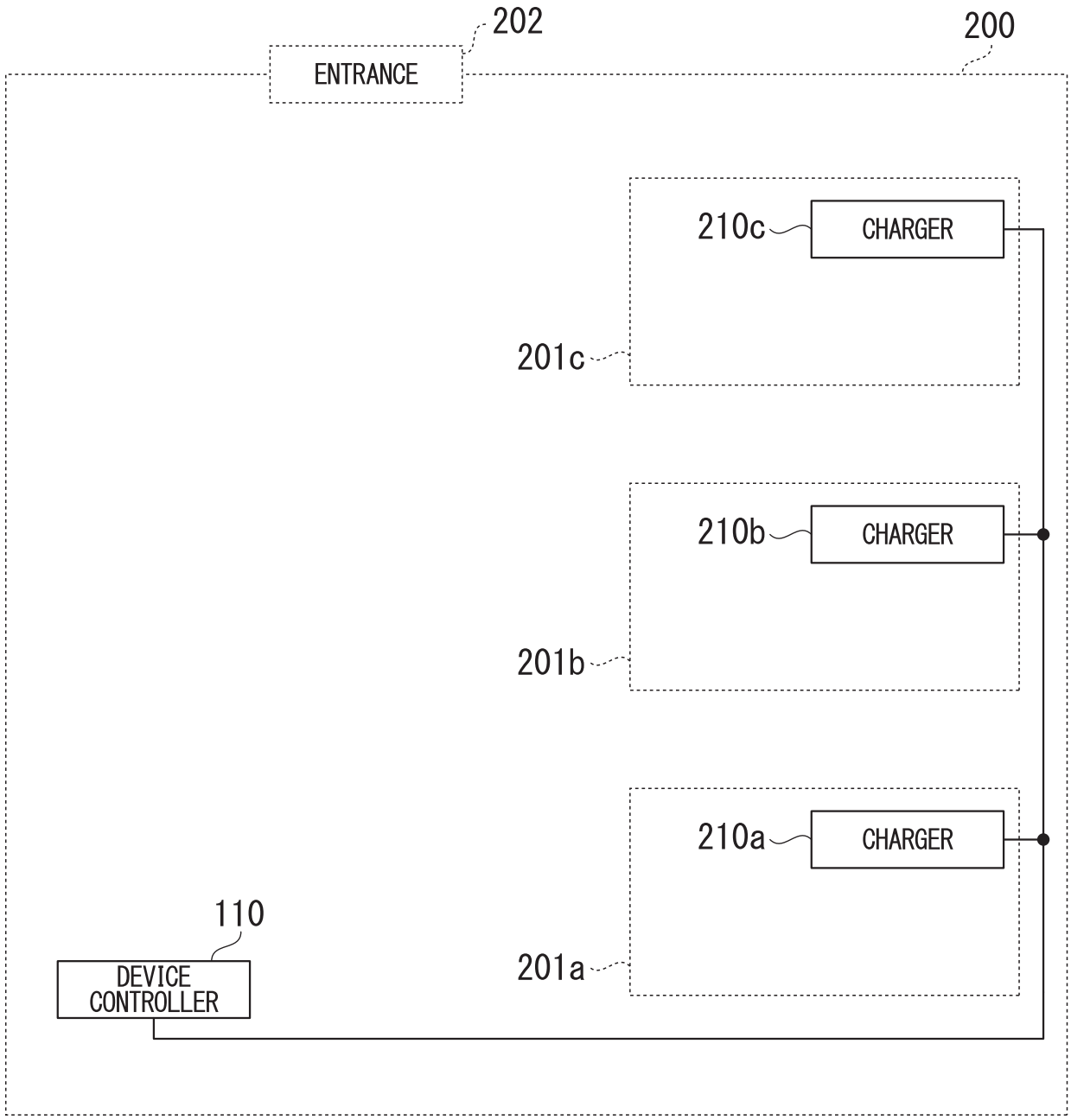

202
200
ENTRANCE
210c
CHARGER
201c
210b
CHARGER
201b
210a
CHARGER
110
DEVICE CONTROLLER
201a

FIG. 6

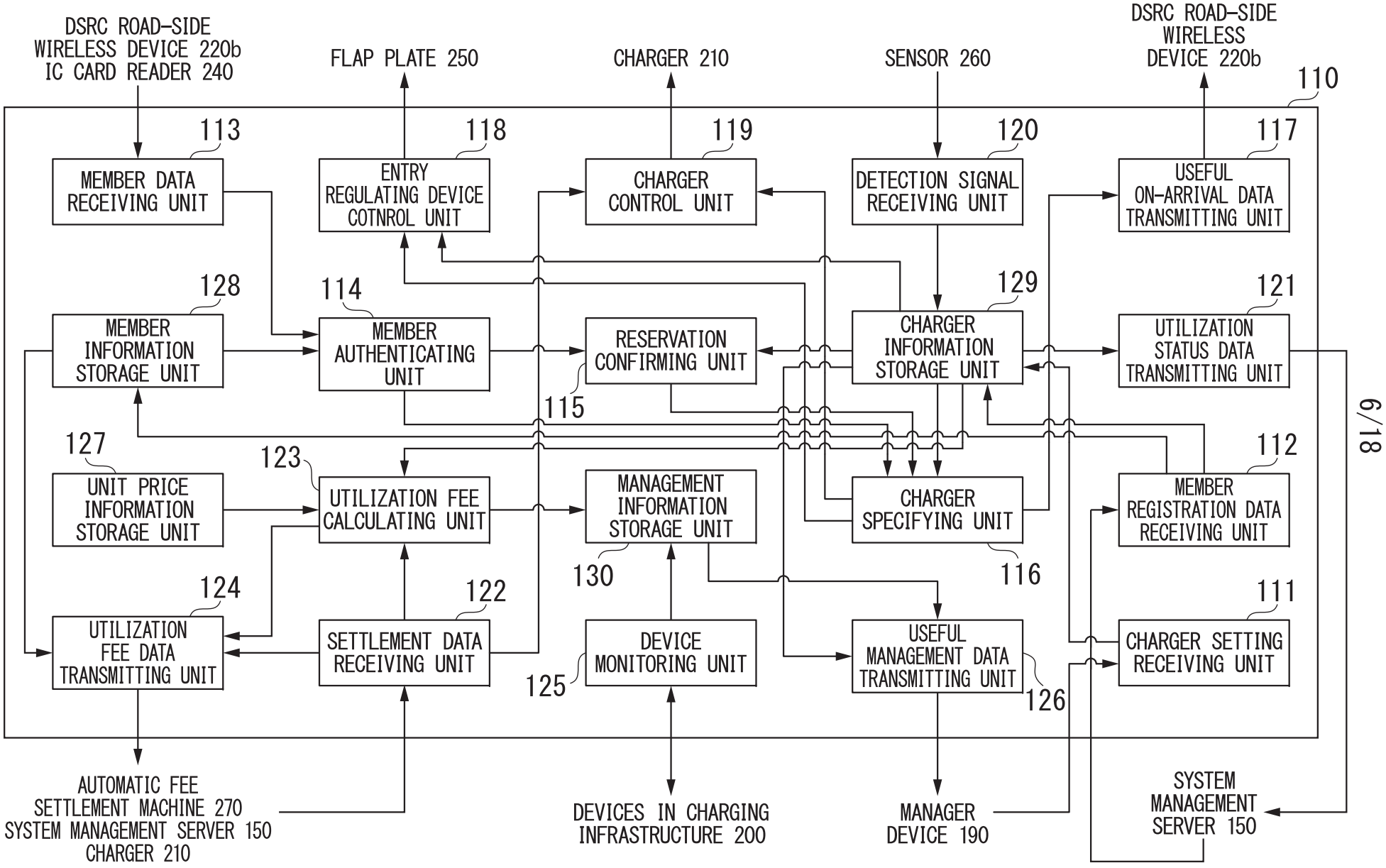

DSRC ROAD-SIDE WIRELESS DEVICE 220b IC CARD READER 240
FLAP PLATE 250
CHARGER 210
SENSOR 260
DSRC ROAD-SIDE WIRELESS DEVICE 220b
110
113
MEMBER DATA RECEIVING UNIT
118
ENTRY REGULATING DEVICE COTNROL UNIT
119
CHARGER CONTROL UNIT
120
DETECTION SIGNAL RECEIVING UNIT
117
USEFUL ON-ARRIVAL DATA TRANSMITTING UNIT
128
MEMBER INFORMATION STORAGE UNIT
114
MEMBER AUTHENTICATING UNIT
RESERVATION CONFIRMING UNIT
115
129
CHARGER INFORMATION STORAGE UNIT
121
UTILIZATION STATUS DATA TRANSMITTING UNIT
127
UNIT PRICE INFORMATION STORAGE UNIT
123
UTILIZATION FEE CALCULATING UNIT
MANAGEMENT INFORMATION STORAGE UNIT
130
CHARGER SPECIFYING UNIT
116
112
MEMBER REGISTRATION DATA RECEIVING UNIT
124
UTILIZATION FEE DATA TRANSMITTING UNIT
122
SETTLEMENT DATA RECEIVING UNIT
DEVICE MONITORING UNIT
125
USEFUL MANAGEMENT DATA TRANSMITTING UNIT
126
111
CHARGER SETTING RECEIVING UNIT
AUTOMATIC FEE SETTLEMENT MACHINE 270
SYSTEM MANAGEMENT SERVER 150
CHARGER 210
DEVICES IN CHARGING INFRASTRUCTURE 200
MANAGER DEVICE 190
SYSTEM MANAGEMENT SERVER 150
6/18

FIG. 7

127

	SUNDAY		MONDAY		TUESDAY		・・・	
	CHARGING UNIT PRICE (YEN/kWh)	TIME UNIT PRICE (YEN/h)	CHARGING UNIT PRICE (YEN/kWh)	TIME UNIT PRICE (YEN/h)	CHARGING UNIT PRICE (YEN/kWh)	TIME UNIT PRICE (YEN/h)	・・・	・・・
22:00 ～23:00	24	330	25	300	25	300	・・・	・・・
23:00 ～0:00	24	330	25	300	25	300	・・・	・・・
0:00 ～1:00	10	110	11	100	11	100	・・・	・・・
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

FIG. 8

128

MEMBER ID	PASSWORD	ELECTRONIC PAYMENT
M0001	7x%AKEQMnmpT	IMPOSSIBLE
M0002	Gh@qYfFPea+0	POSSIBLE
M0003	V2X$u=CdyaYs	IMPOSSIBLE
⋮	⋮	⋮

FIG. 9

129

CHARGER ID	PATTERN OF OPERATION	UTILIZATION STATUS	UTILIZATION START TIME	MEMBERS WHO HAVE RESERVED THE CHARGER	RESERVED TIME ZONE
210a	FOR EXCLUSIVE USE OF MEMBERS WHO HAVE RESERVED THE CHARGER	UNDER UTILIZATION	16:07	M0415	17:00～18:00
210b	FOR EXCLUSIVE USE OF MEMBERS	-	-	-	-
210c	UNSPECIFIED	UNDER UTILIZATION	15:04	-	-

FIG. 10

130

UTILIZATION STATUS (NUMBER OF VEHICLESOCCUPIED /NUMBER OF PARKING SPACES)	OPERATION STATUS	SALES (YEN)	POWER CONSUMPTION (kWh)
34/47	NORMAL	957000	175

FIG. 11

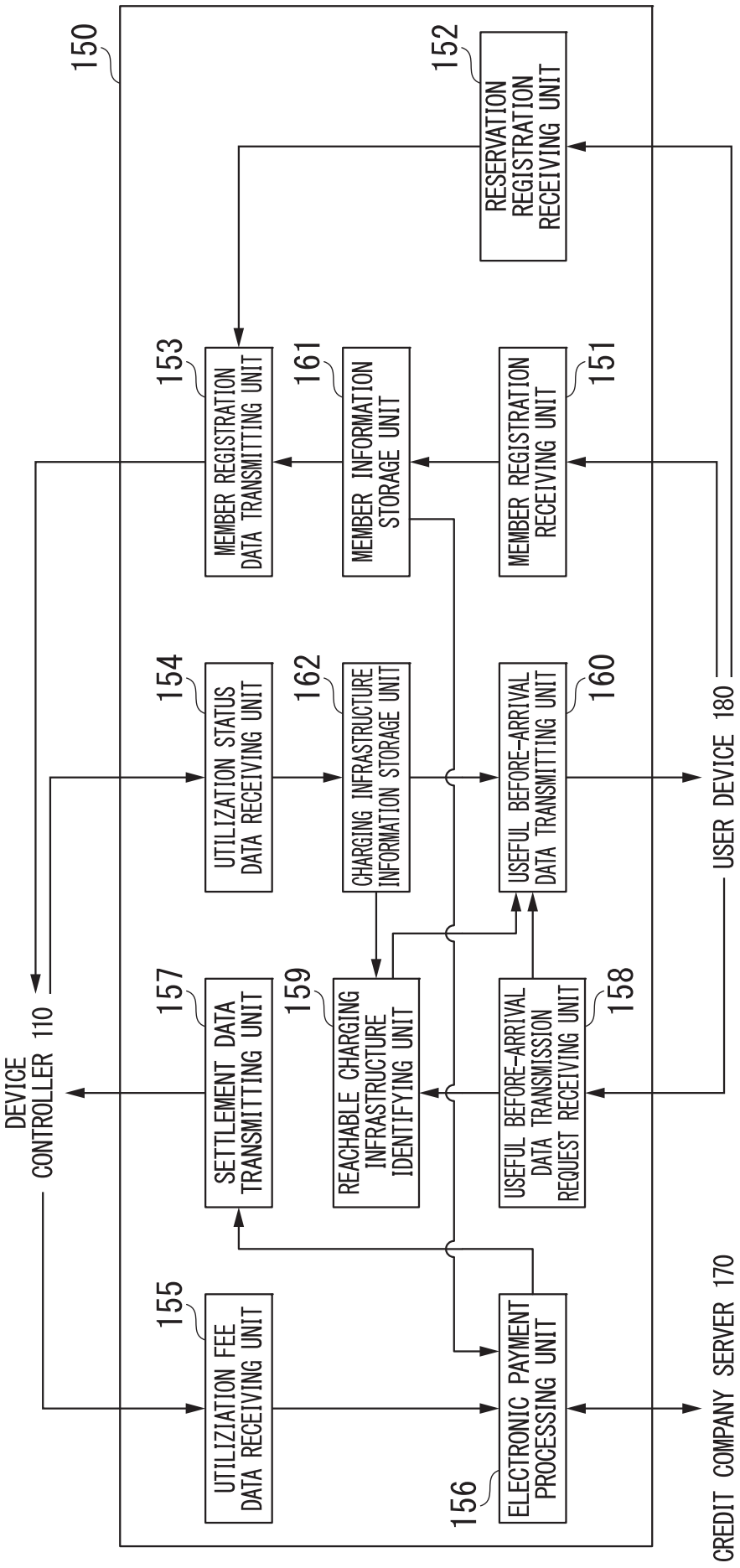

150
152
RESERVATION REGISTRATION RECEIVING UNIT
153
MEMBER REGISTRATION DATA TRANSMITTING UNIT
161
MEMBER INFORMATION STORAGE UNIT
151
MEMBER REGISTRATION RECEIVING UNIT
154
UTILIZATION STATUS DATA RECEIVING UNIT
162
CHARGING INFRASTRUCTURE INFORMATION STORAGE UNIT
160
USEFUL BEFORE-ARRIVAL DATA TRANSMITTING UNIT
DEVICE CONTROLLER 110
157
SETTLEMENT DATA TRANSMITTING UNIT
159
REACHABLE CHARGING INFRASTRUCTURE IDENTIFYING UNIT
158
USEFUL BEFORE-ARRIVAL DATA TRANSMISSION REQUEST RECEIVING UNIT
USER DEVICE 180
155
UTILIZATION FEE DATA RECEIVING UNIT
156
ELECTRONIC PAYMENT PROCESSING UNIT
CREDIT COMPANY SERVER 170

FIG. 12

161

MEMBER ID	PASSWORD	NAME	ADDRESS	CREDIT CARD COMPANY	CREDIT CARD NUMBER
M0001	7x%AKEQMnmpT	JUNPEI TAKAKURA	···, MINATO-KU, TOKYO	···	···
M0002	Gh@qYfFPea+0	HARUNA YANAGISAWA	···, MINATO-KU, TOKYO	···	···
M0003	V2X$u=CdyaYs	HIDEHIKO YASHIRO	···, CHUO-KU, TOKYO	···	···
⋮	⋮	⋮	⋮	⋮	⋮

FIG. 13

162

CHARGING INFRASTRUCTURE ID	ADDRESS	AVAILABILITY STATUS	RESERVATION STATUS
200a	···, AKASAKA, MINATO-KU, TOKYO	OCCUPIED	17:00～18:00・・・NG 18:00～19:00・・・OK 19:00～20:00・・・NG ⋮
200b	···, SHIBAURA, MINATO-KU, TOKYO	EMPTY	17:00～18:00・・・NG 18:00～19:00・・・NG 19:00～20:00・・・NG ⋮
200c	···, KYOBASHI, CHUO-KU, TOKYO	OCCUPIED	17:00～18:00・・・NG 18:00～19:00・・・NG 19:00～20:00・・・OK ⋮
⋮	⋮	⋮	⋮

FIG. 14

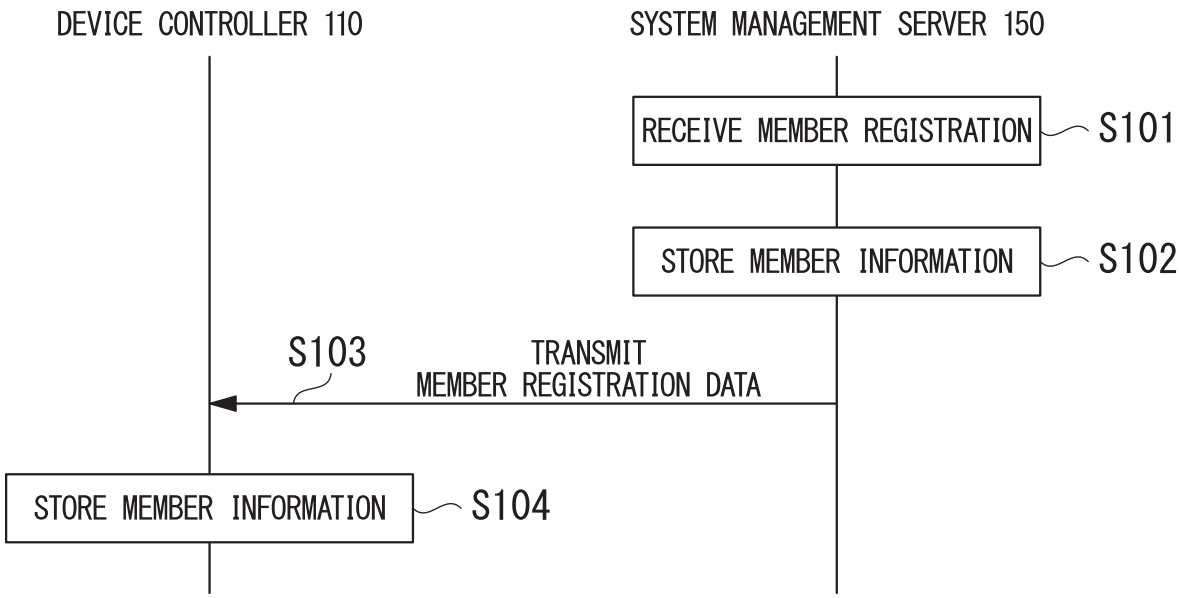

DEVICE CONTROLLER 110
SYSTEM MANAGEMENT SERVER 150
RECEIVE MEMBER REGISTRATION
S101
STORE MEMBER INFORMATION
S102
S103
TRANSMIT
MEMBER REGISTRATION DATA
STORE MEMBER INFORMATION
S104

FIG. 15

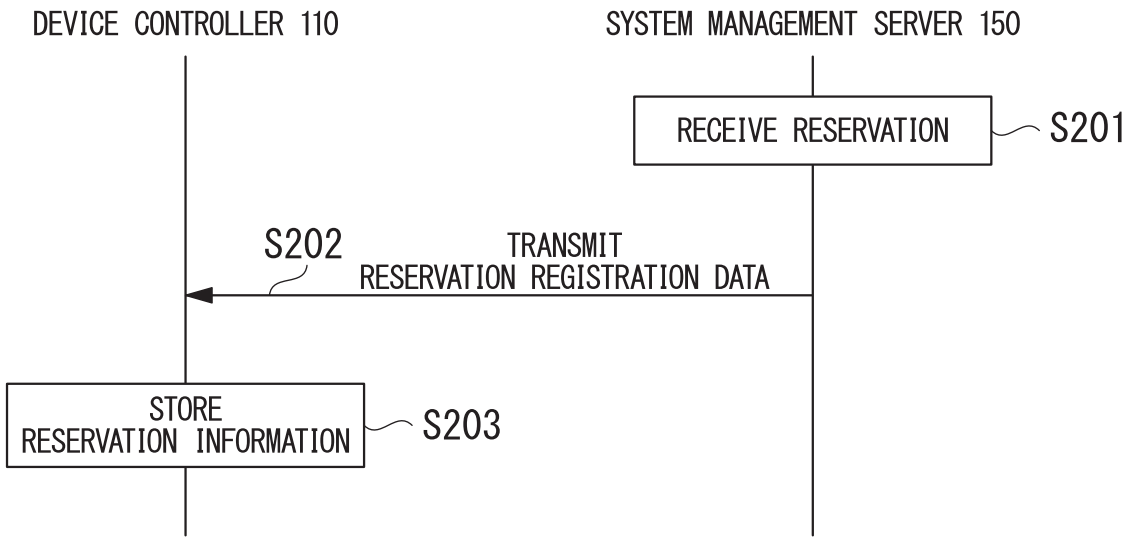

DEVICE CONTROLLER 110
SYSTEM MANAGEMENT SERVER 150
RECEIVE RESERVATION
S201
S202
TRANSMIT
RESERVATION REGISTRATION DATA
STORE
RESERVATION INFORMATION
S203

FIG. 16

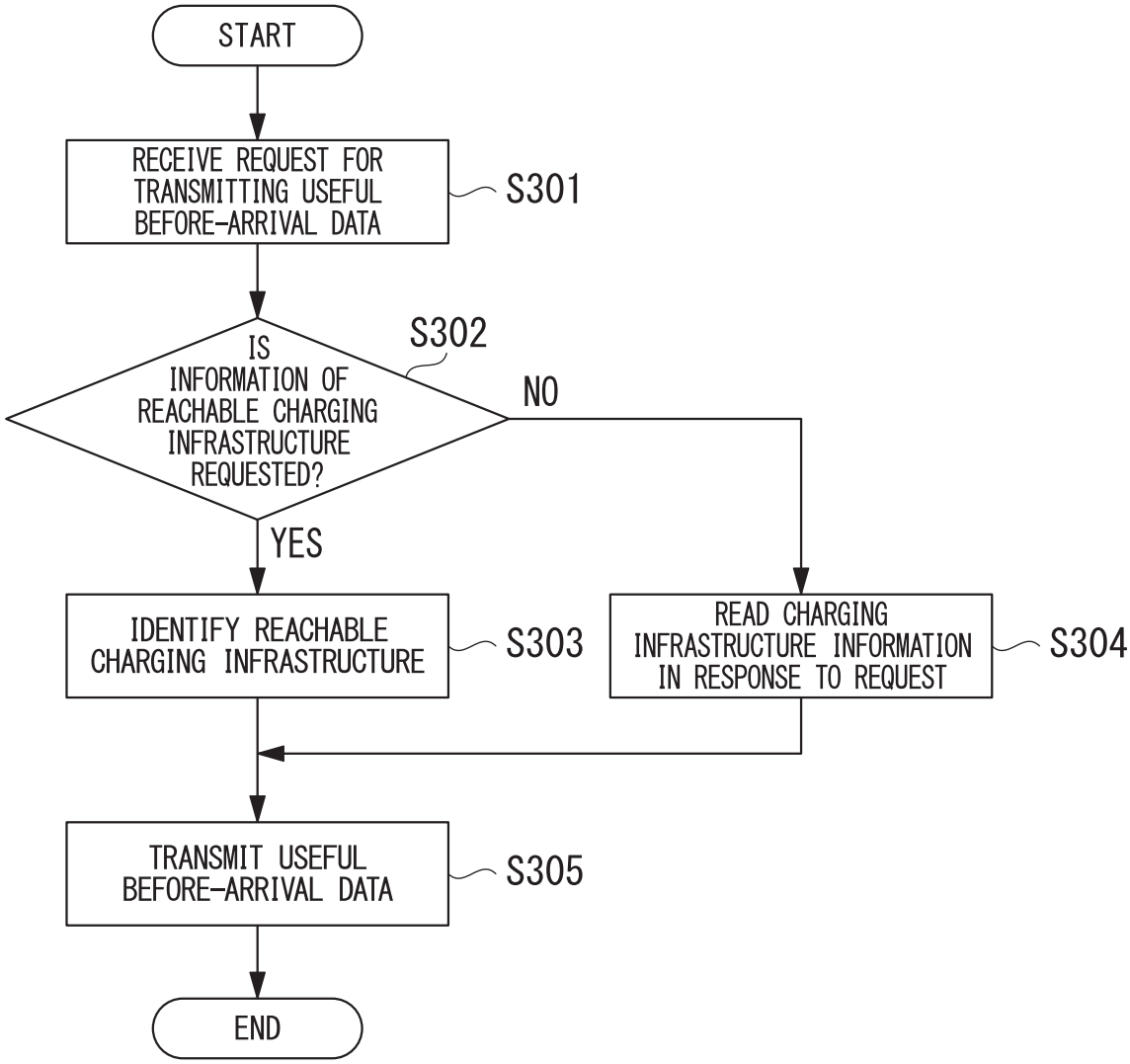

START
RECEIVE REQUEST FOR TRANSMITTING USEFUL BEFORE-ARRIVAL DATA
S301
IS INFORMATION OF REACHABLE CHARGING INFRASTRUCTURE REQUESTED?
S302
NO
YES
IDENTIFY REACHABLE CHARGING INFRASTRUCTURE
S303
READ CHARGING INFRASTRUCTURE INFORMATION IN RESPONSE TO REQUEST
S304
TRANSMIT USEFUL BEFORE-ARRIVAL DATA
S305
END

FIG. 17

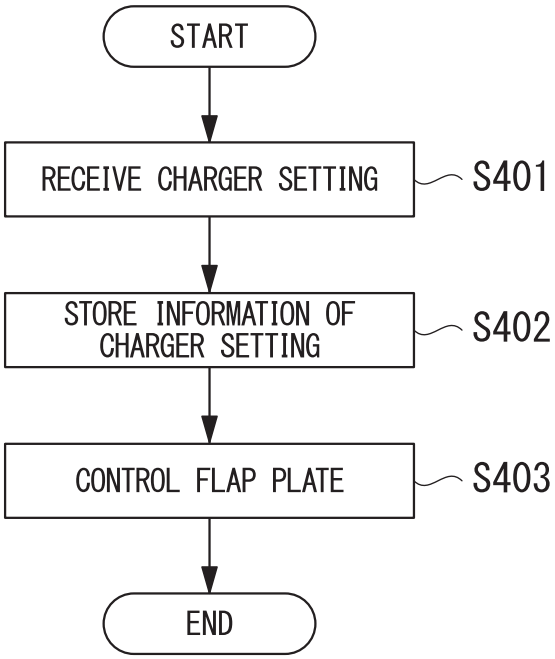

START
RECEIVE CHARGER SETTING
S401
STORE INFORMATION OF CHARGER SETTING
S402
CONTROL FLAP PLATE
S403
END

FIG. 18

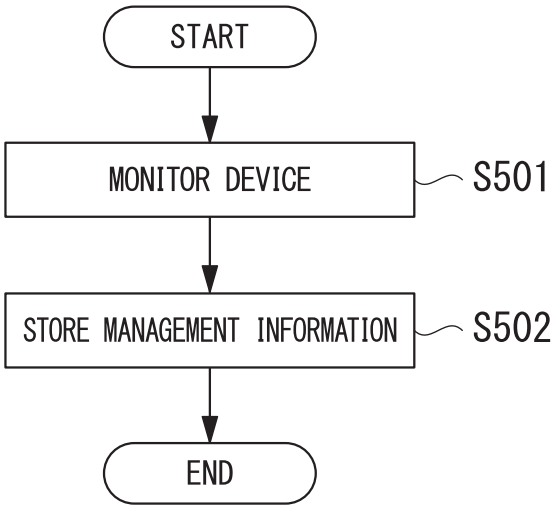

START
MONITOR DEVICE
S501
STORE MANAGEMENT INFORMATION
S502
END

FIG. 19

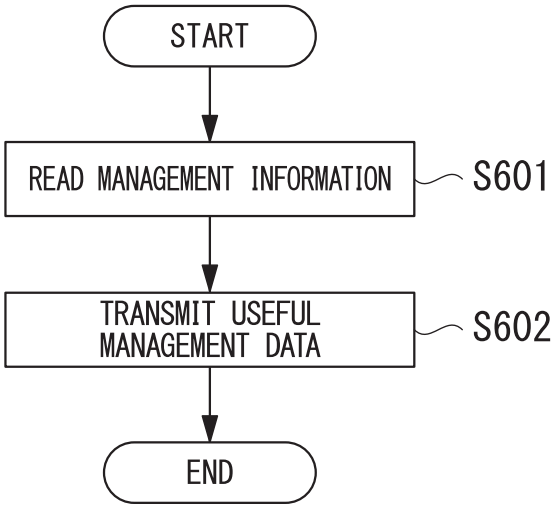

START
READ MANAGEMENT INFORMATION
S601
TRANSMIT USEFUL MANAGEMENT DATA
S602
END

FIG. 20

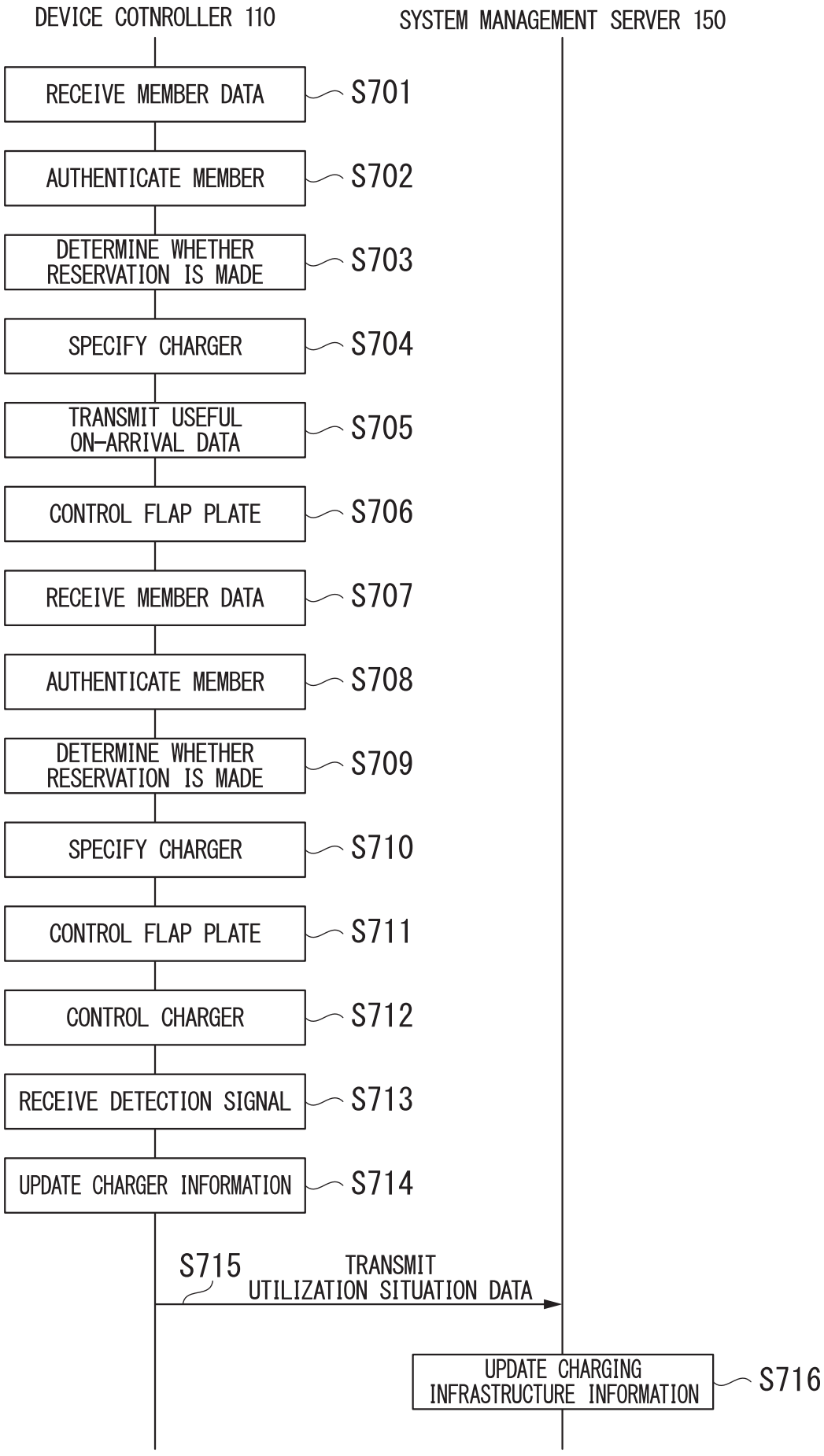

DEVICE COTNROLLER 110
SYSTEM MANAGEMENT SERVER 150
RECEIVE MEMBER DATA
S701
AUTHENTICATE MEMBER
S702
DETERMINE WHETHER RESERVATION IS MADE
S703
SPECIFY CHARGER
S704
TRANSMIT USEFUL ON-ARRIVAL DATA
S705
CONTROL FLAP PLATE
S706
RECEIVE MEMBER DATA
S707
AUTHENTICATE MEMBER
S708
DETERMINE WHETHER RESERVATION IS MADE
S709
SPECIFY CHARGER
S710
CONTROL FLAP PLATE
S711
CONTROL CHARGER
S712
RECEIVE DETECTION SIGNAL
S713
UPDATE CHARGER INFORMATION
S714
S715
TRANSMIT UTILIZATION SITUATION DATA
UPDATE CHARGING INFRASTRUCTURE INFORMATION
S716

FIG. 21

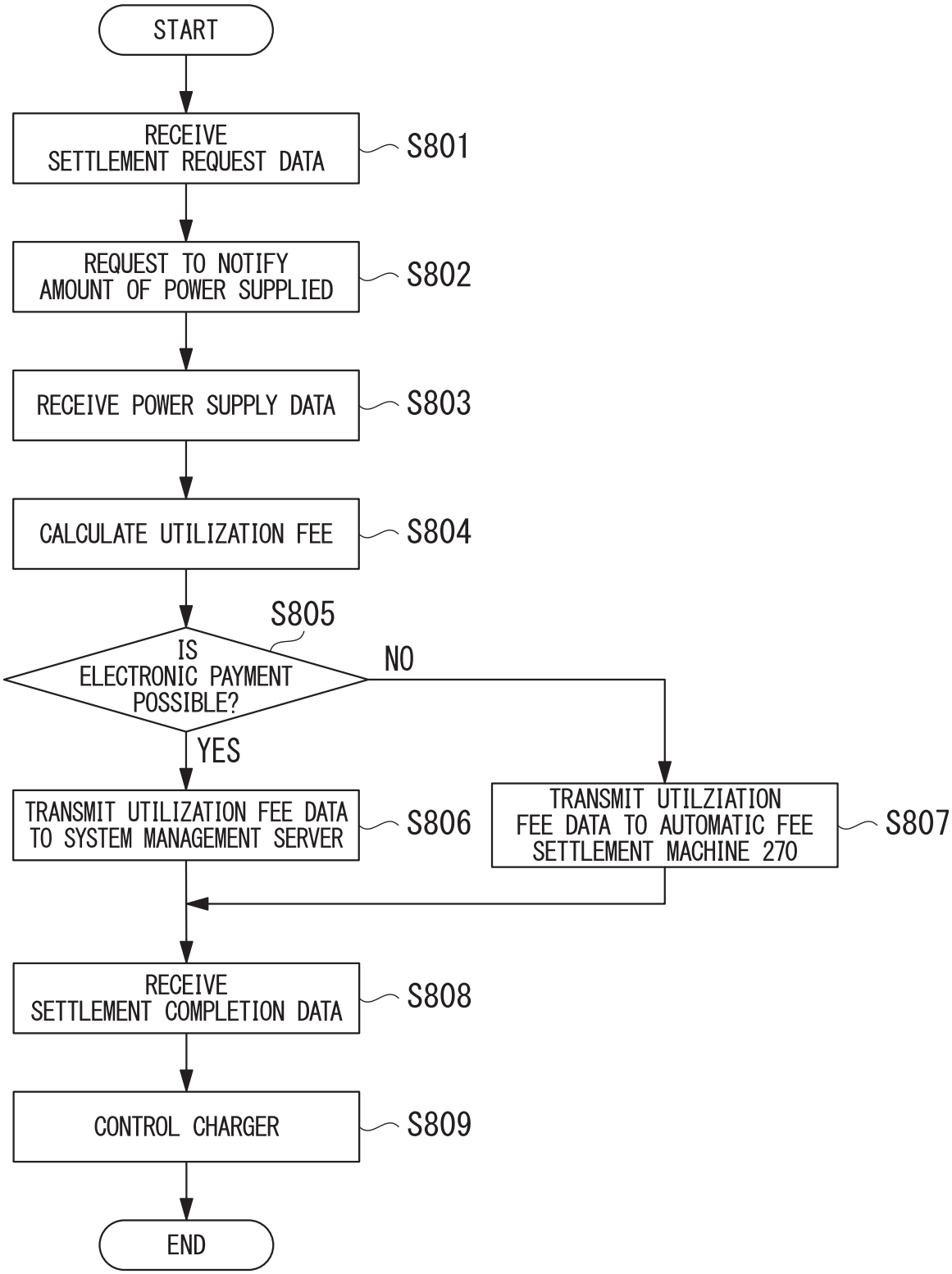
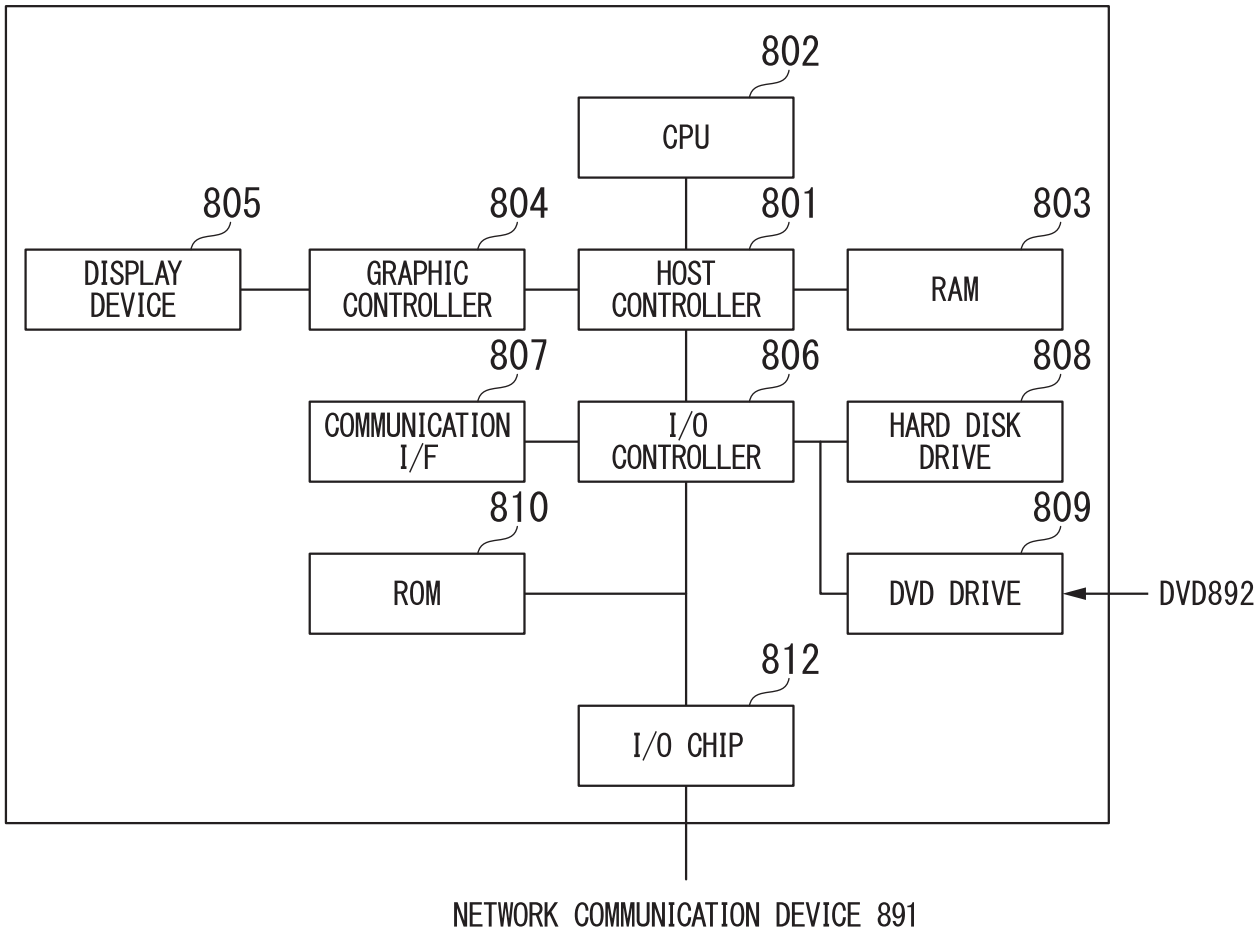

START
RECEIVE SETTLEMENT REQUEST DATA
S801
REQUEST TO NOTIFY AMOUNT OF POWER SUPPLIED
S802
RECEIVE POWER SUPPLY DATA
S803
CALCULATE UTILIZATION FEE
S804
S805
IS ELECTRONIC PAYMENT POSSIBLE?
NO
YES
TRANSMIT UTILIZATION FEE DATA TO SYSTEM MANAGEMENT SERVER
S806
TRANSMIT UTILZIATION FEE DATA TO AUTOMATIC FEE SETTLEMENT MACHINE 270
S807
RECEIVE SETTLEMENT COMPLETION DATA
S808
CONTROL CHARGER
S809
END

FIG. 22


802
CPU
805
804
801
803
DISPLAY DEVICE
GRAPHIC CONTROLLER
HOST CONTROLLER
RAM
807
806
808
COMMUNICATION I/F
I/O CONTROLLER
HARD DISK DRIVE
810
809
ROM
DVD DRIVE
DVD892
812
I/O CHIP
NETWORK COMMUNICATION DEVICE 891