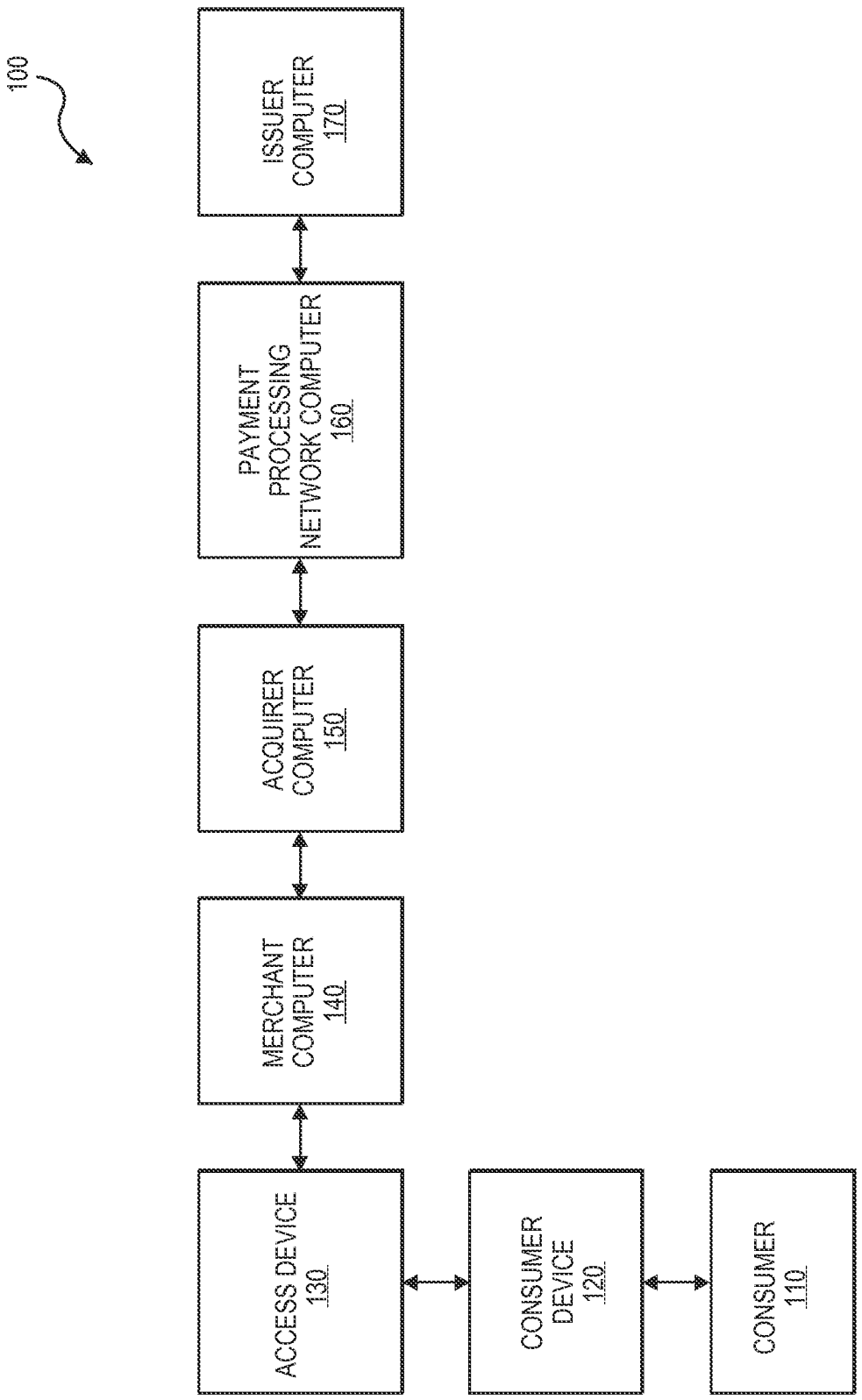

100
ISSUER COMPUTER 170
PAYMENT PROCESSING NETWORK COMPUTER 160
ACQUIRER COMPUTER 150
MERCHANT COMPUTER 140
ACCESS DEVICE 130
CONSUMER DEVICE 120
CONSUMER 110

FIG. 1

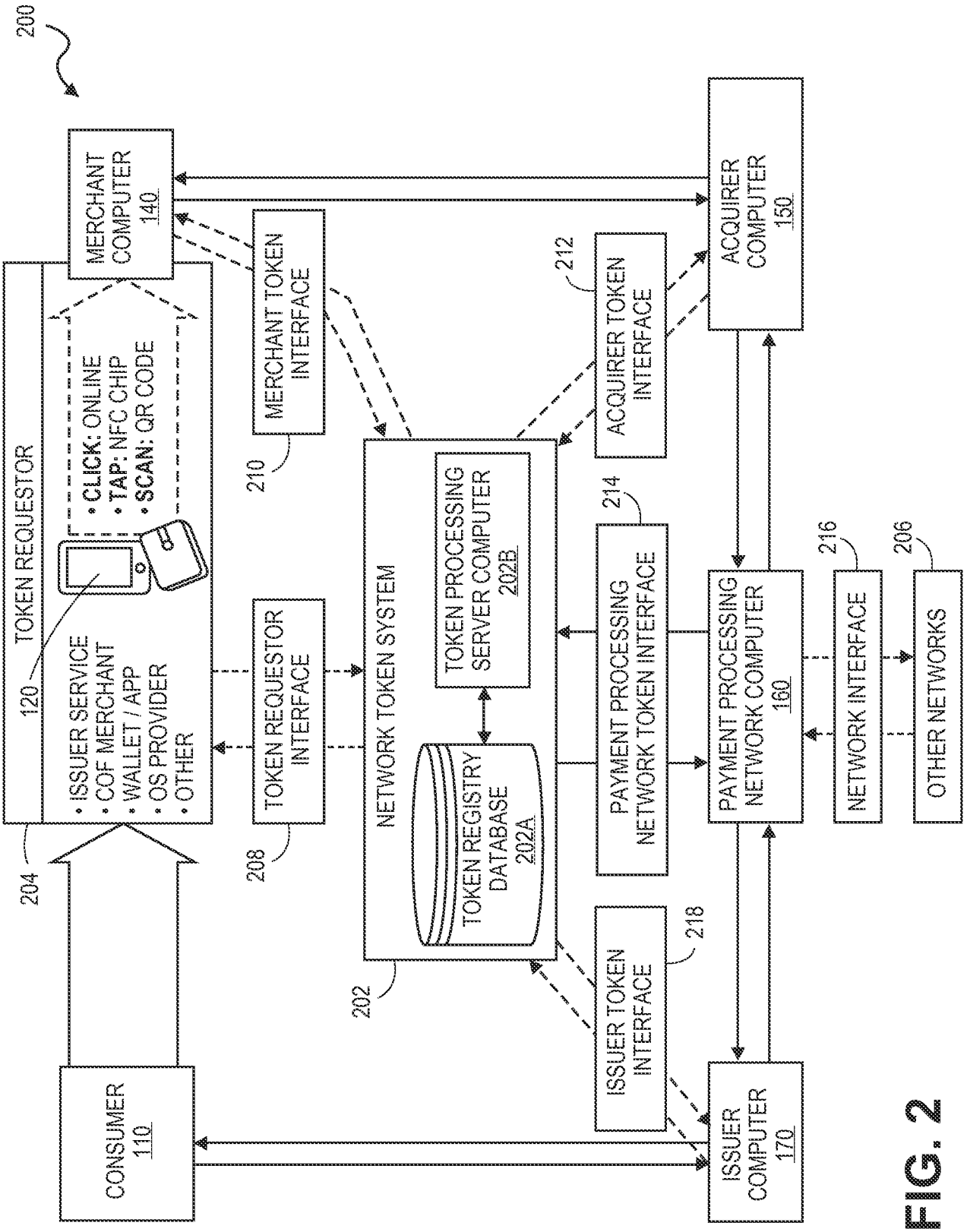

200
TOKEN REQUESTOR
120
• ISSUER SERVICE
• COF MERCHANT
• WALLET / APP
• OS PROVIDER
• OTHER
• CLICK: ONLINE
• TAP: NFC CHIP
• SCAN: QR CODE
204
CONSUMER 110
MERCHANT COMPUTER 140
MERCHANT TOKEN INTERFACE
210
ACQUIRER COMPUTER 150
212
ACQUIRER TOKEN INTERFACE
TOKEN REQUESTOR INTERFACE
208
NETWORK TOKEN SYSTEM
202
TOKEN PROCESSING SERVER COMPUTER 202B
TOKEN REGISTRY DATABASE 202A
214
PAYMENT PROCESSING NETWORK TOKEN INTERFACE
PAYMENT PROCESSING NETWORK COMPUTER 160
216
NETWORK INTERFACE
206
OTHER NETWORKS
ISSUER TOKEN INTERFACE
218
ISSUER COMPUTER 170

FIG. 2

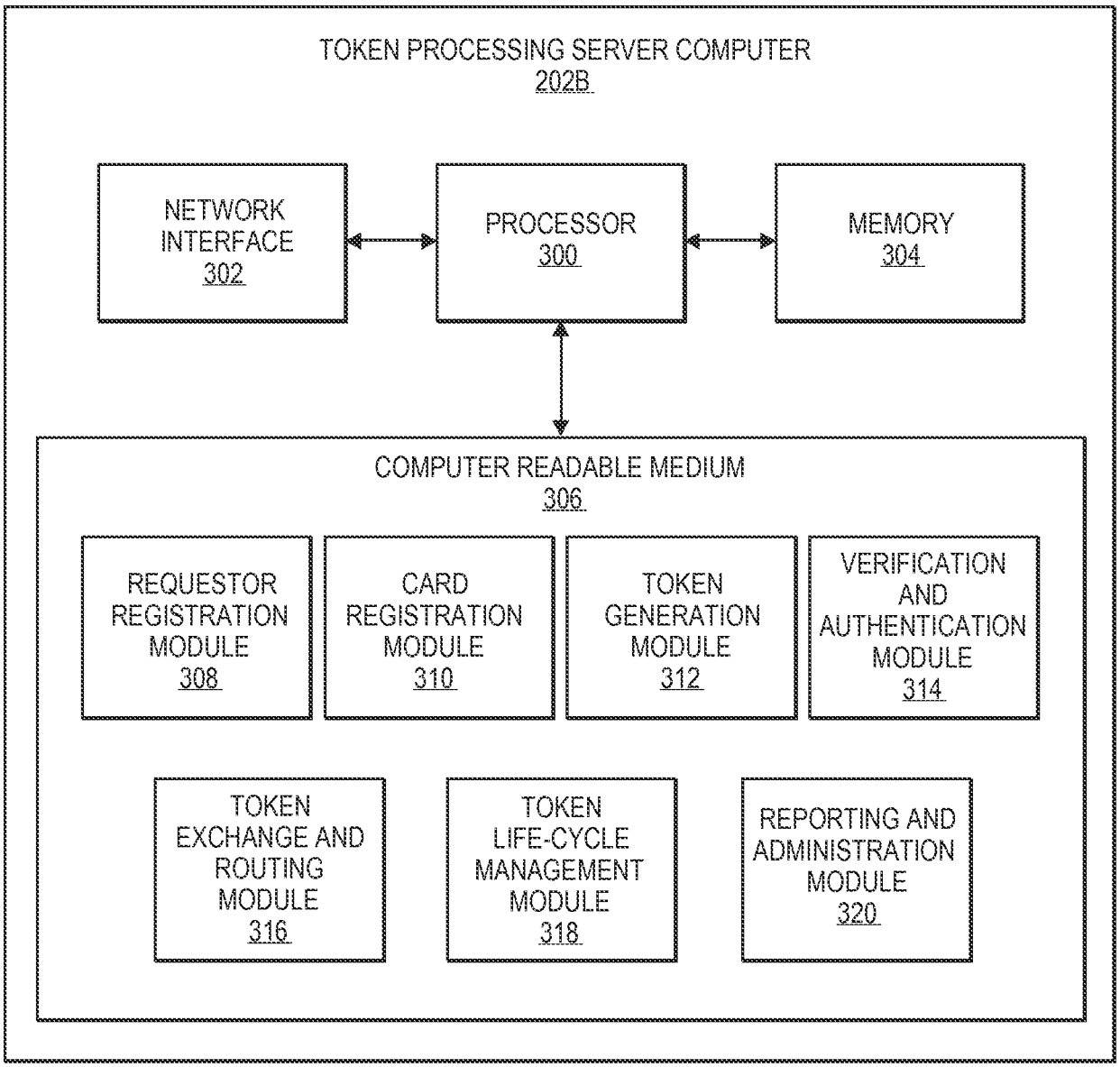

TOKEN PROCESSING SERVER COMPUTER
202B
NETWORK INTERFACE
302
PROCESSOR
300
MEMORY
304
COMPUTER READABLE MEDIUM
306
REQUESTOR REGISTRATION MODULE
308
CARD REGISTRATION MODULE
310
TOKEN GENERATION MODULE
312
VERIFICATION AND AUTHENTICATION MODULE
314
TOKEN EXCHANGE AND ROUTING MODULE
316
TOKEN LIFE-CYCLE MANAGEMENT MODULE
318
REPORTING AND ADMINISTRATION MODULE
320

FIG. 3

400

Token Registry Database Token Record

402	Token	4900 0000 0000 0001
404	Primary Account Number	4147 0900 0000 1234
406	Token Requestor Identifier	11 2345 6789
408	Token Presentment Mode	QR code
410	Token Type	Dynamic
412	Token Expiration Date	7/16/2014, 14:35:00
414	Merchant Restrictions	Merchant Category Code: 5111
416	Token Assurance Level	Issuer Authenticated
418	Token Timestamp	7/15/2014, 14:35:00
420	Token Status	Active
422	Consumer Account Details	Jane Doe, 123 Street, A city - 99998

FIG. 4

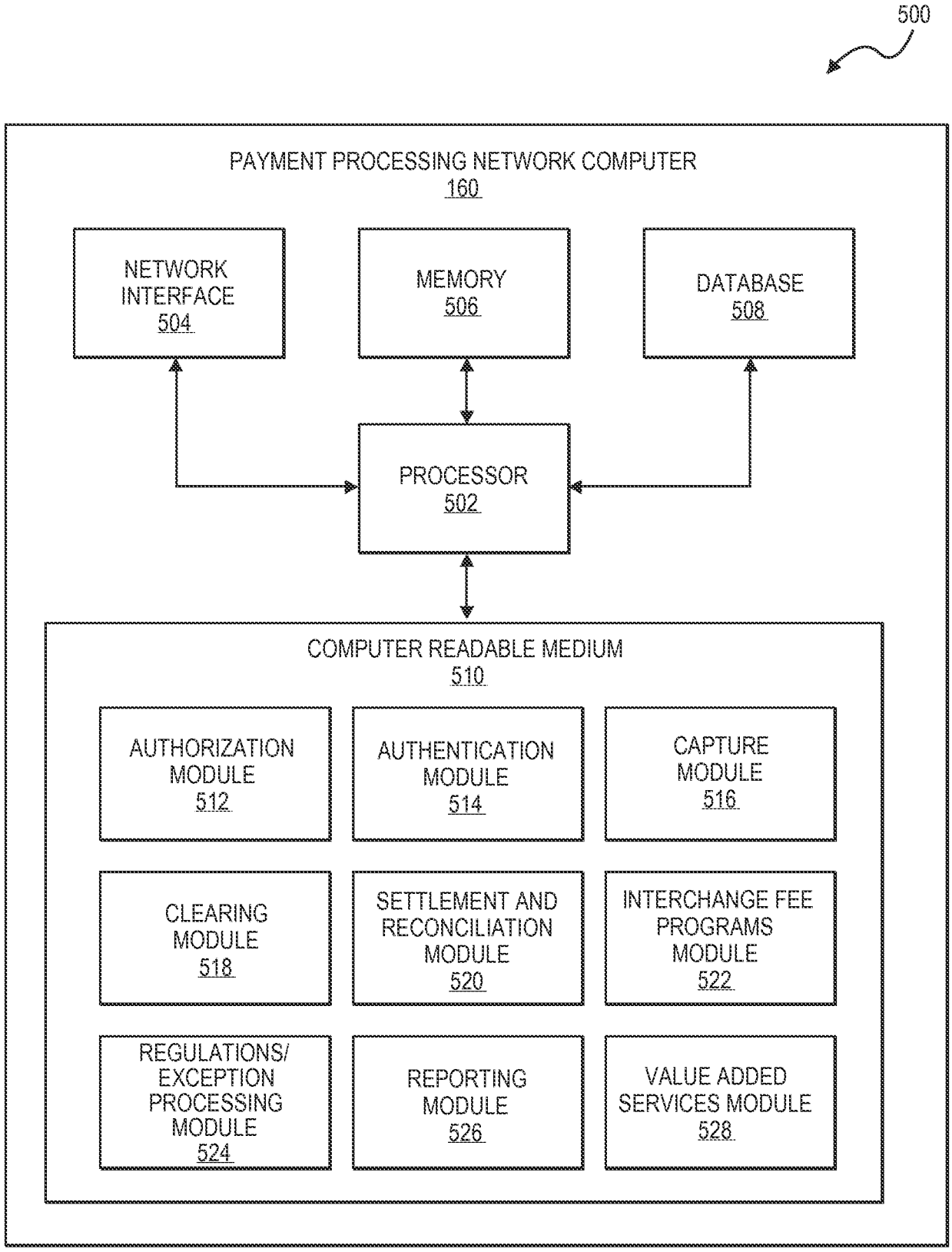
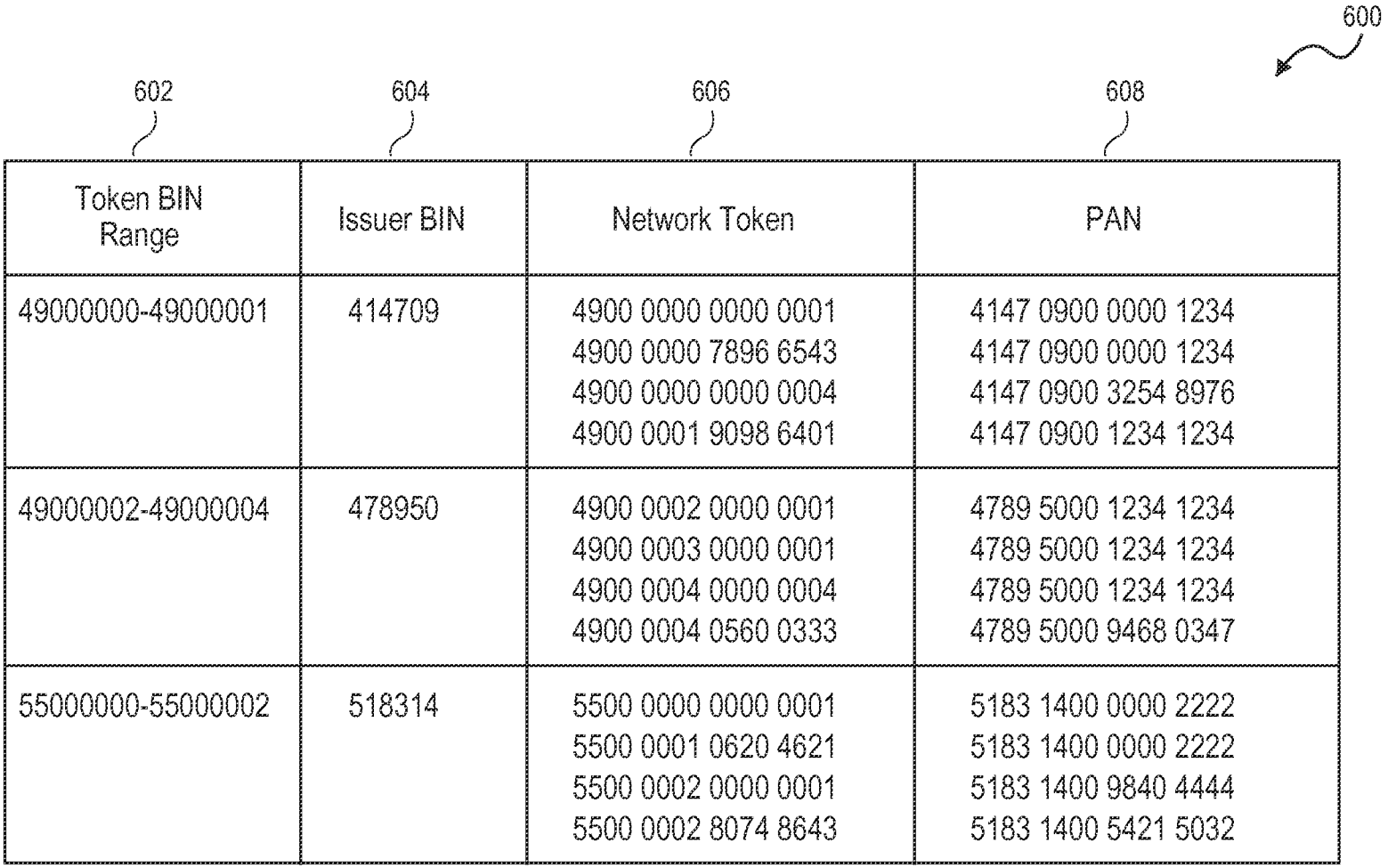

500
PAYMENT PROCESSING NETWORK COMPUTER
160
NETWORK INTERFACE
504
MEMORY
506
DATABASE
508
PROCESSOR
502
COMPUTER READABLE MEDIUM
510
AUTHORIZATION MODULE
512
AUTHENTICATION MODULE
514
CAPTURE MODULE
516
CLEARING MODULE
518
SETTLEMENT AND RECONCILIATION MODULE
520
INTERCHANGE FEE PROGRAMS MODULE
522
REGULATIONS/ EXCEPTION PROCESSING MODULE
524
REPORTING MODULE
526
VALUE ADDED SERVICES MODULE
528

FIG. 5



Token BIN Range	Issuer BIN	Network Token	PAN
49000000-49000001	414709	4900 0000 0000 0001 4900 0000 7896 6543 4900 0000 0000 0004 4900 0001 9098 6401	4147 0900 0000 1234 4147 0900 0000 1234 4147 0900 3254 8976 4147 0900 1234 1234
49000002-49000004	478950	4900 0002 0000 0001 4900 0003 0000 0001 4900 0004 0000 0004 4900 0004 0560 0333	4789 5000 1234 1234 4789 5000 1234 1234 4789 5000 1234 1234 4789 5000 9468 0347
55000000-55000002	518314	5500 0000 0000 0001 5500 0001 0620 4621 5500 0002 0000 0001 5500 0002 8074 8643	5183 1400 0000 2222 5183 1400 0000 2222 5183 1400 9840 4444 5183 1400 5421 5032

FIG. 6

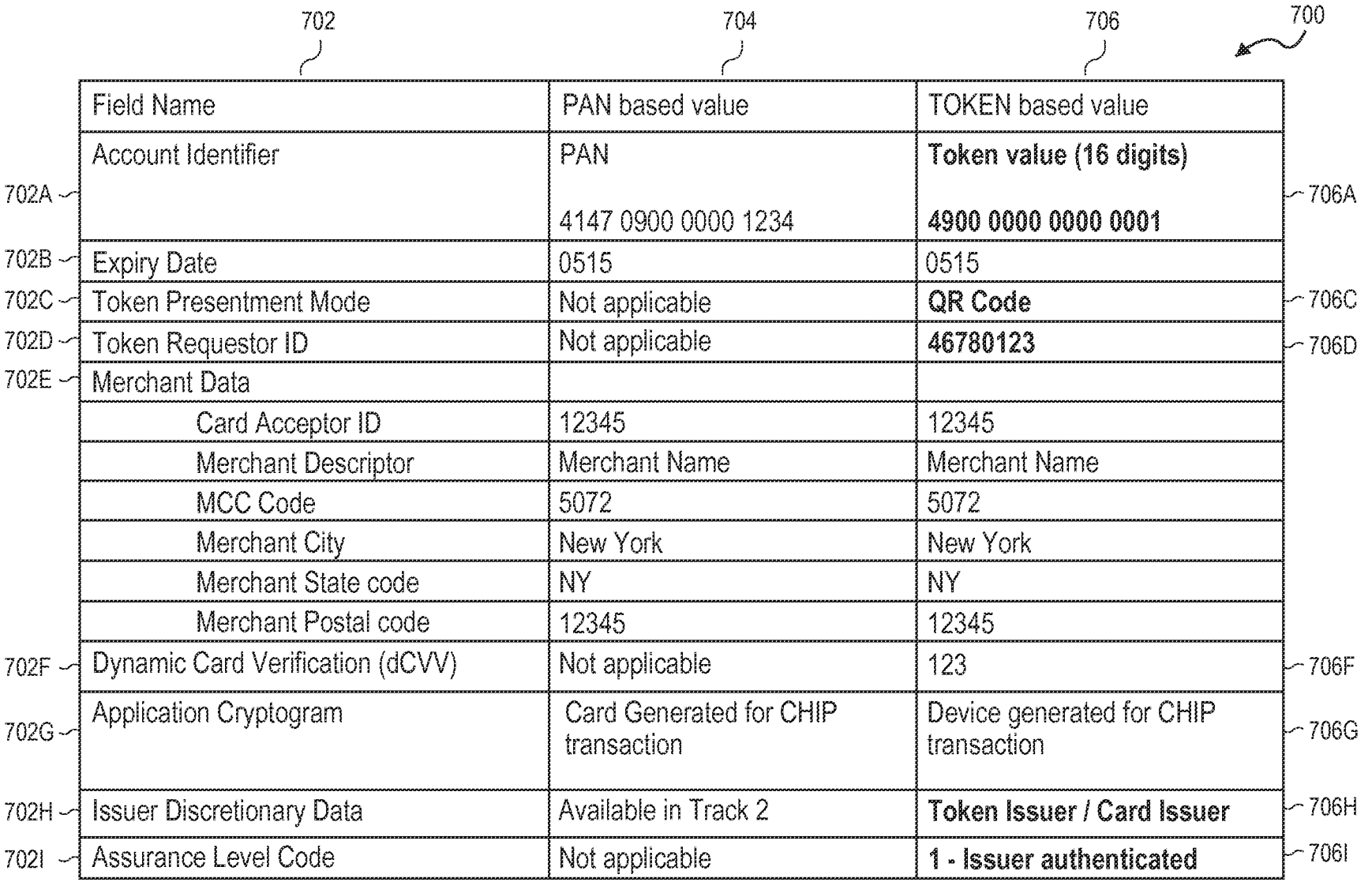

702
704
706
700
Field Name
PAN based value
TOKEN based value
Account Identifier
PAN
4147 0900 0000 1234
Token value (16 digits)
4900 0000 0000 0001
Expiry Date
0515
0515
Token Presentment Mode
Not applicable
QR Code
Token Requestor ID
Not applicable
46780123
Merchant Data
Card Acceptor ID
12345
12345
Merchant Descriptor
Merchant Name
Merchant Name
MCC Code
5072
5072
Merchant City
New York
New York
Merchant State code
NY
NY
Merchant Postal code
12345
12345
Dynamic Card Verification (dCVV)
Not applicable
123
Application Cryptogram
Card Generated for CHIP transaction
Device generated for CHIP transaction
Issuer Discretionary Data
Available in Track 2
Token Issuer / Card Issuer
Assurance Level Code
Not applicable
1 - Issuer authenticated
702A
702B
702C
702D
702E
702F
702G
702H
702I
706A
706C
706D
706F
706G
706H
706I

FIG. 7

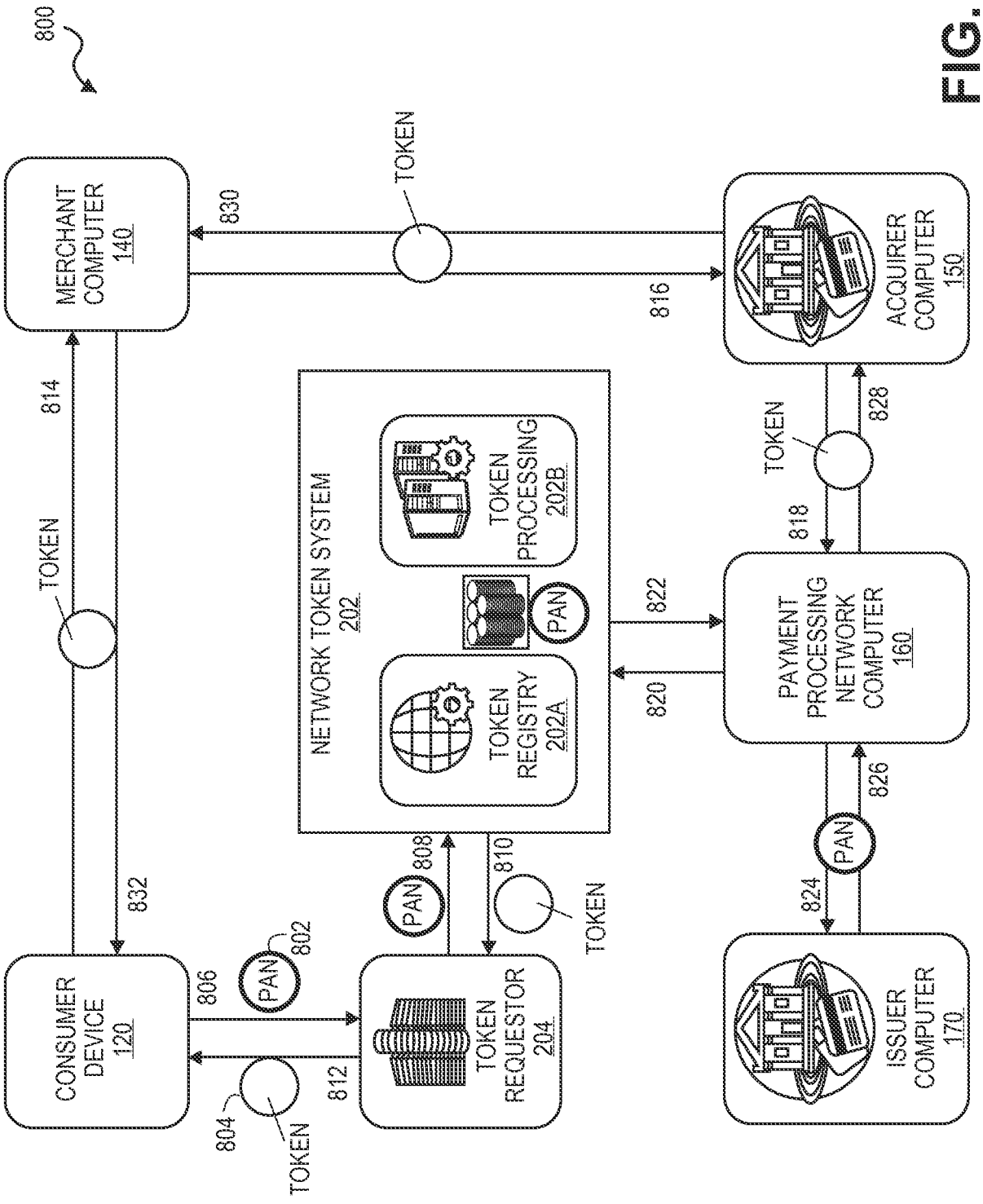
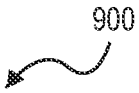

800
MERCHANT COMPUTER 140
CONSUMER DEVICE 120
TOKEN REQUESTOR 204
NETWORK TOKEN SYSTEM 202
TOKEN REGISTRY 202A
TOKEN PROCESSING 202B
PAYMENT PROCESSING NETWORK COMPUTER 160
ACQUIRER COMPUTER 150
ISSUER COMPUTER 170
TOKEN
PAN
802
804
806
808
810
812
814
816
818
820
822
824
826
828
830
832

FIG. 8


900

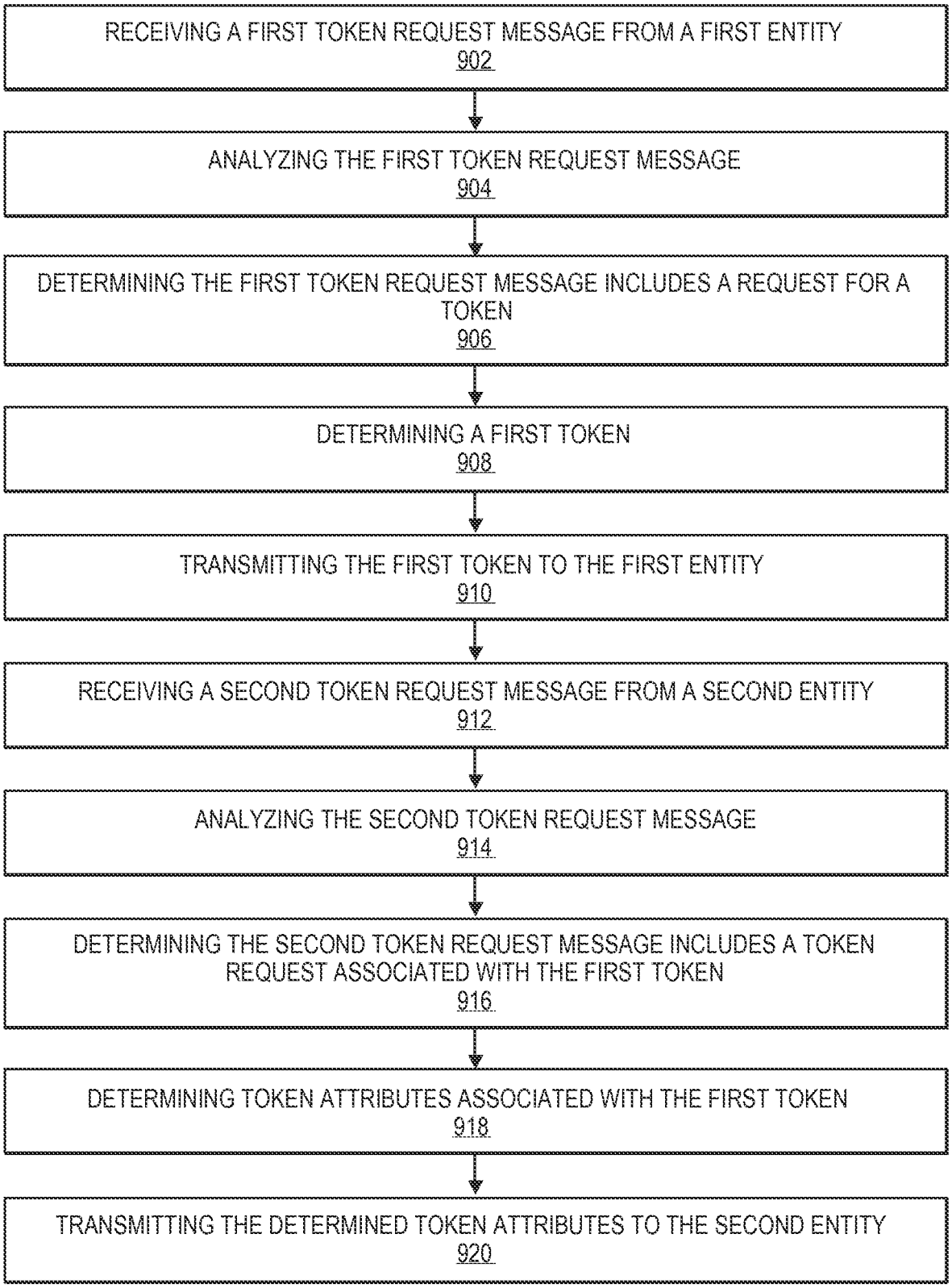

RECEIVING A FIRST TOKEN REQUEST MESSAGE FROM A FIRST ENTITY
902
ANALYZING THE FIRST TOKEN REQUEST MESSAGE
904
DETERMINING THE FIRST TOKEN REQUEST MESSAGE INCLUDES A REQUEST FOR A TOKEN
906
DETERMINING A FIRST TOKEN
908
TRANSMITTING THE FIRST TOKEN TO THE FIRST ENTITY
910
RECEIVING A SECOND TOKEN REQUEST MESSAGE FROM A SECOND ENTITY
912
ANALYZING THE SECOND TOKEN REQUEST MESSAGE
914
DETERMINING THE SECOND TOKEN REQUEST MESSAGE INCLUDES A TOKEN REQUEST ASSOCIATED WITH THE FIRST TOKEN
916
DETERMINING TOKEN ATTRIBUTES ASSOCIATED WITH THE FIRST TOKEN
918
TRANSMITTING THE DETERMINED TOKEN ATTRIBUTES TO THE SECOND ENTITY
920

FIG. 9

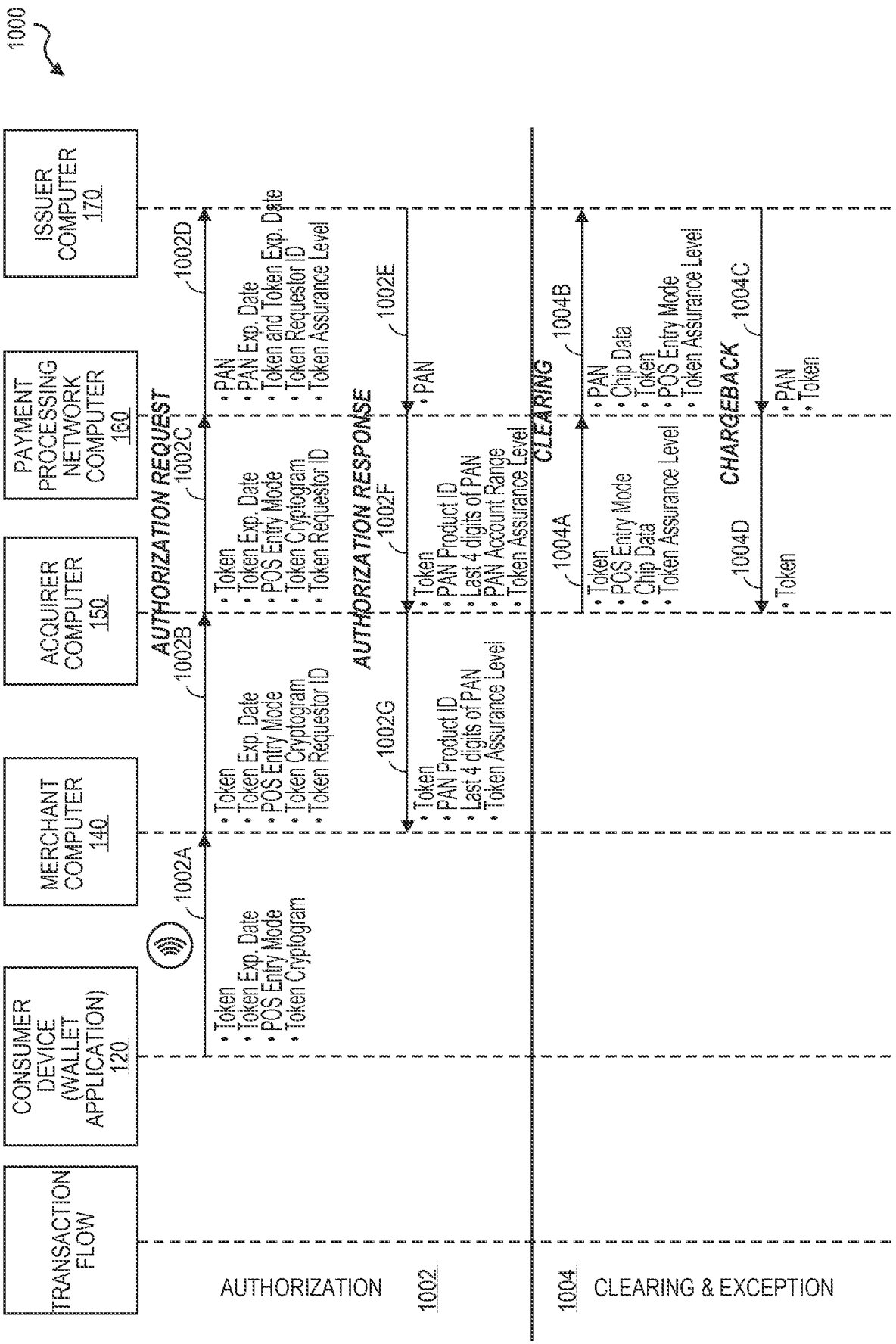

1000
TRANSACTION FLOW
CONSUMER DEVICE (WALLET APPLICATION) 120
MERCHANT COMPUTER 140
ACQUIRER COMPUTER 150
PAYMENT PROCESSING NETWORK COMPUTER 160
ISSUER COMPUTER 170
1002 AUTHORIZATION
1004 CLEARING & EXCEPTION
1002A
AUTHORIZATION REQUEST
1002B
1002C
1002D
• Token
• Token Exp. Date
• POS Entry Mode
• Token Cryptogram
• Token Requestor ID
• PAN
• PAN Exp. Date
• Token and Token Exp. Date
• Token Requestor ID
• Token Assurance Level
AUTHORIZATION RESPONSE
1002G
1002F
1002E
• Token
• PAN Product ID
• Last 4 digits of PAN
• PAN Account Range
• Token Assurance Level
• PAN
CLEARING
1004A
1004B
• Token
• POS Entry Mode
• Chip Data
• Token Assurance Level
• PAN
• Chip Data
• Token
• POS Entry Mode
• Token Assurance Level
CHARGEBACK
1004D
1004C
• Token
• PAN
• Token
NFC POINT-OF-SALE TRANSACTION

FIG. 10

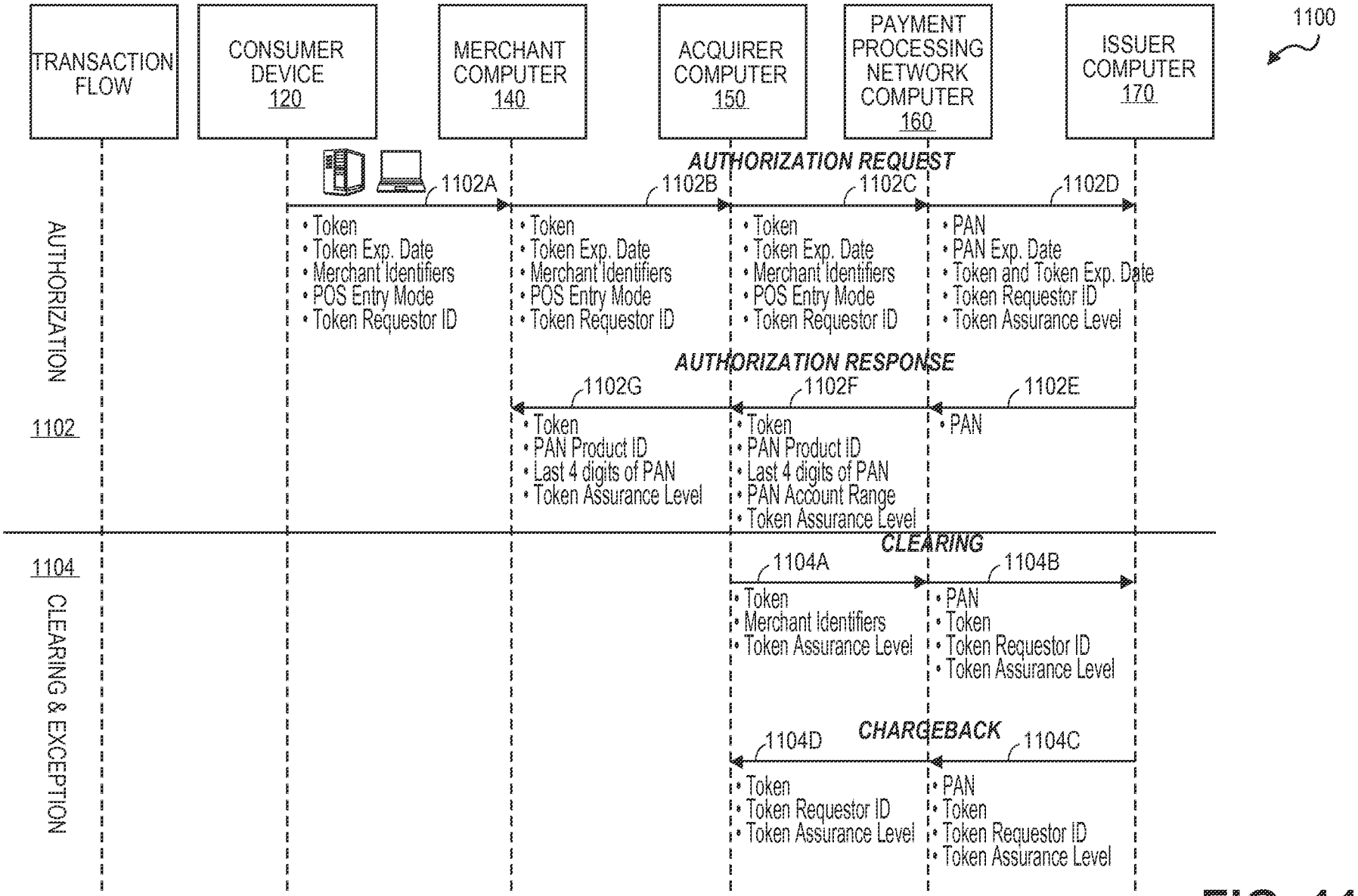

TRANSACTION FLOW
CONSUMER DEVICE 120
MERCHANT COMPUTER 140
ACQUIRER COMPUTER 150
PAYMENT PROCESSING NETWORK COMPUTER 160
ISSUER COMPUTER 170
1100
AUTHORIZATION 1102
CLEARING & EXCEPTION 1104
AUTHORIZATION REQUEST
1102A
1102B
1102C
1102D
• Token
• Token Exp. Date
• Merchant Identifiers
• POS Entry Mode
• Token Requestor ID
• PAN
• PAN Exp. Date
• Token and Token Exp. Date
• Token Assurance Level
AUTHORIZATION RESPONSE
1102G
1102F
1102E
• PAN Product ID
• Last 4 digits of PAN
• PAN Account Range
CLEARING
1104A
1104B
1104D
1104C
CHARGEBACK
CARD-ON-FILE/eCOMMERCE TRANSACTION

FIG. 11

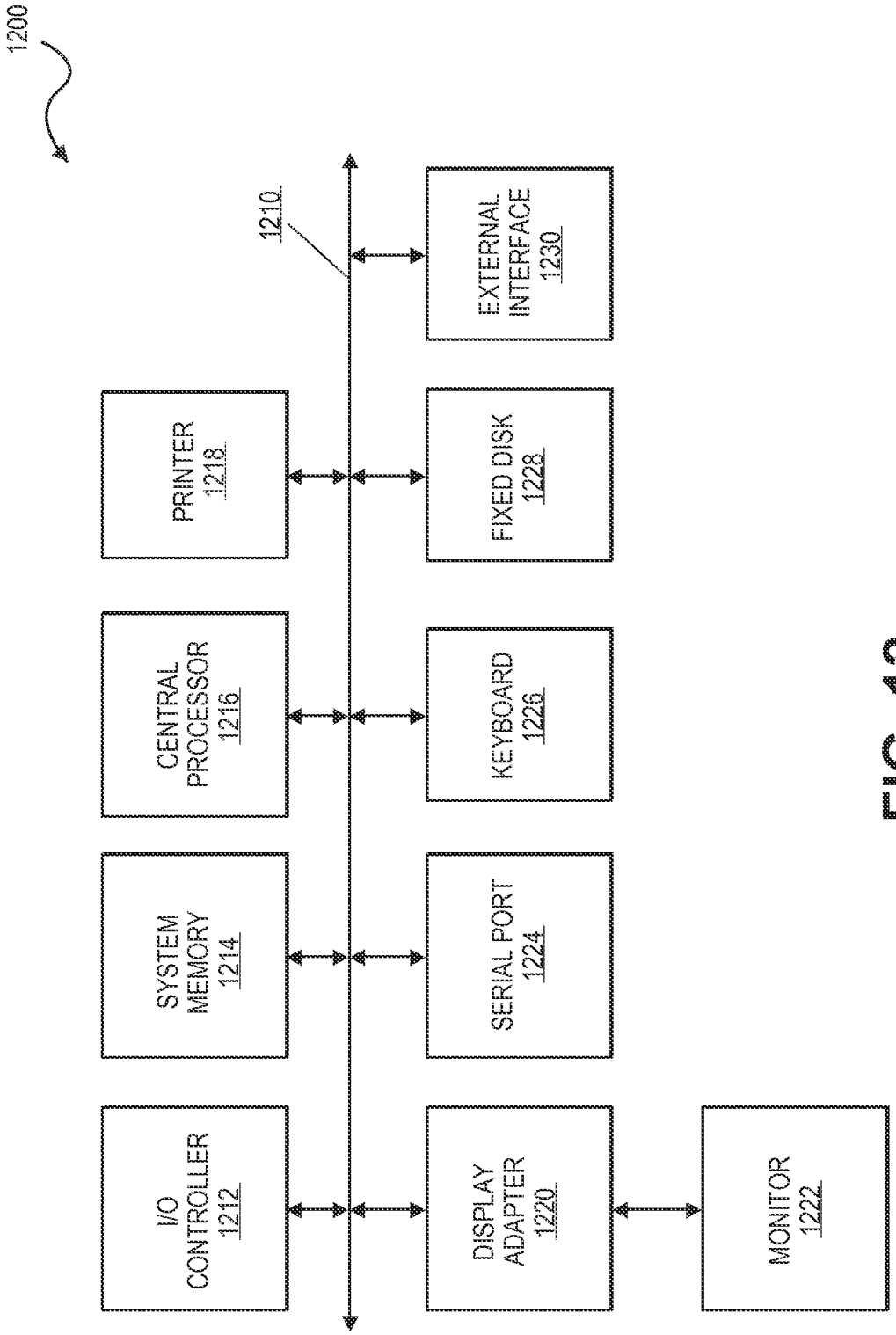

1200
1210
I/O CONTROLLER 1212
SYSTEM MEMORY 1214
CENTRAL PROCESSOR 1216
PRINTER 1218
DISPLAY ADAPTER 1220
MONITOR 1222
SERIAL PORT 1224
KEYBOARD 1226
FIXED DISK 1228
EXTERNAL INTERFACE 1230

FIG. 12