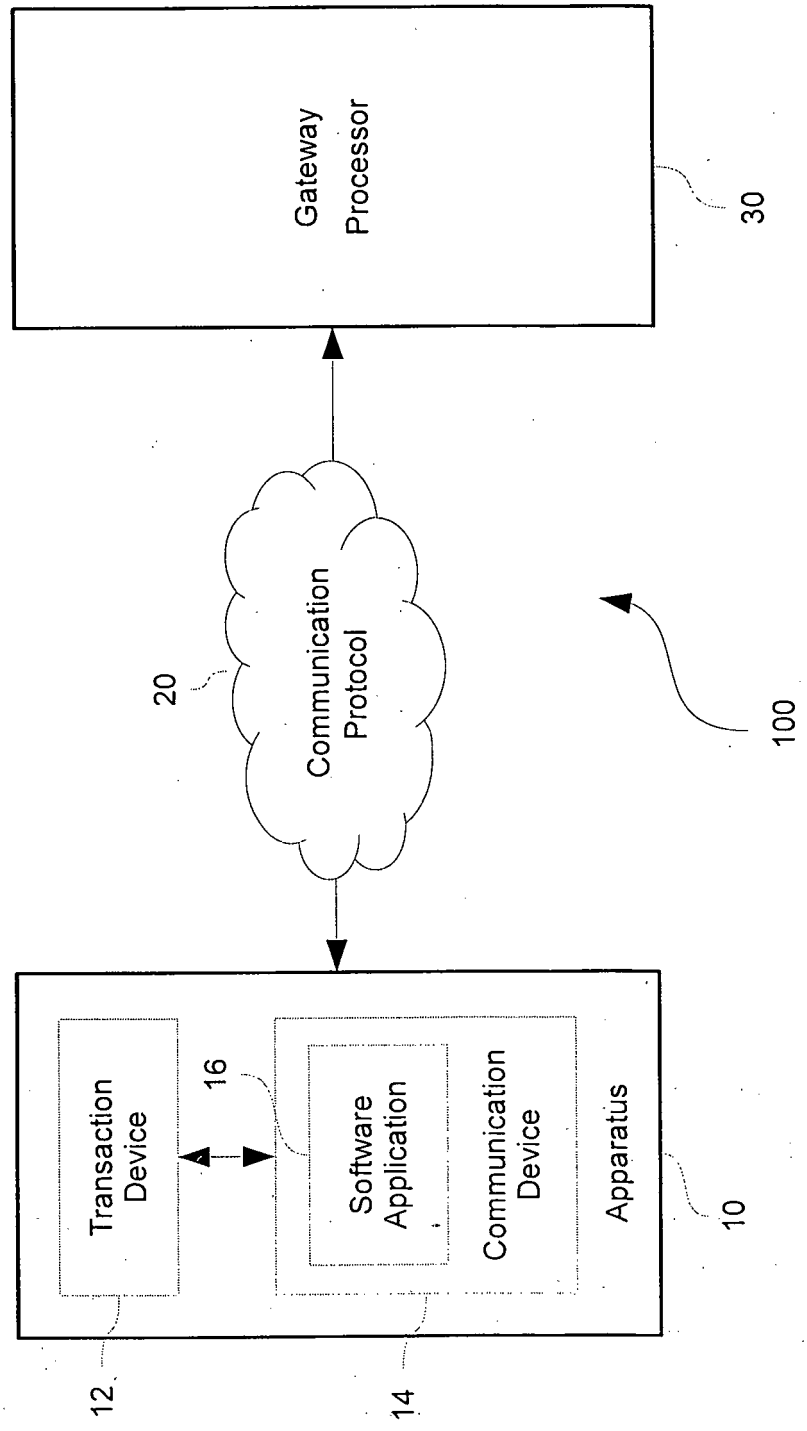

Gateway Processor
30
Communication Protocol
20
100
Transaction Device
16
Software Application
Communication Device
Apparatus
10
12
14

FIG. 1

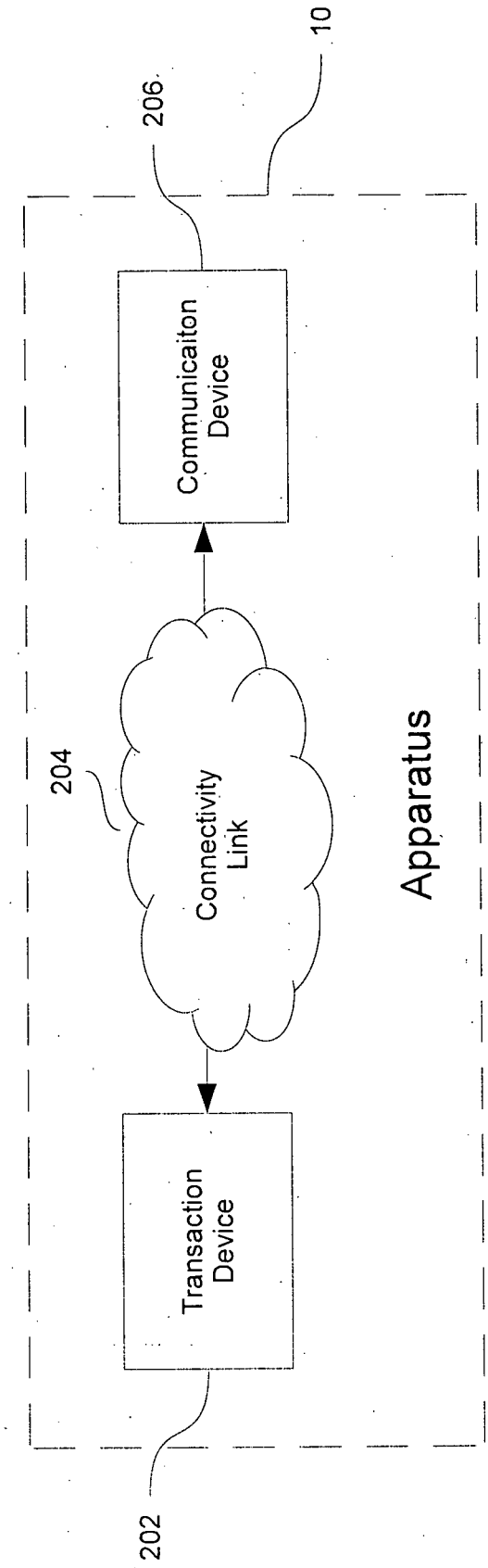

10
206
Communicaiton Device
204
Connectivity Link
Apparatus
Transaction Device
202
200

FIG. 2

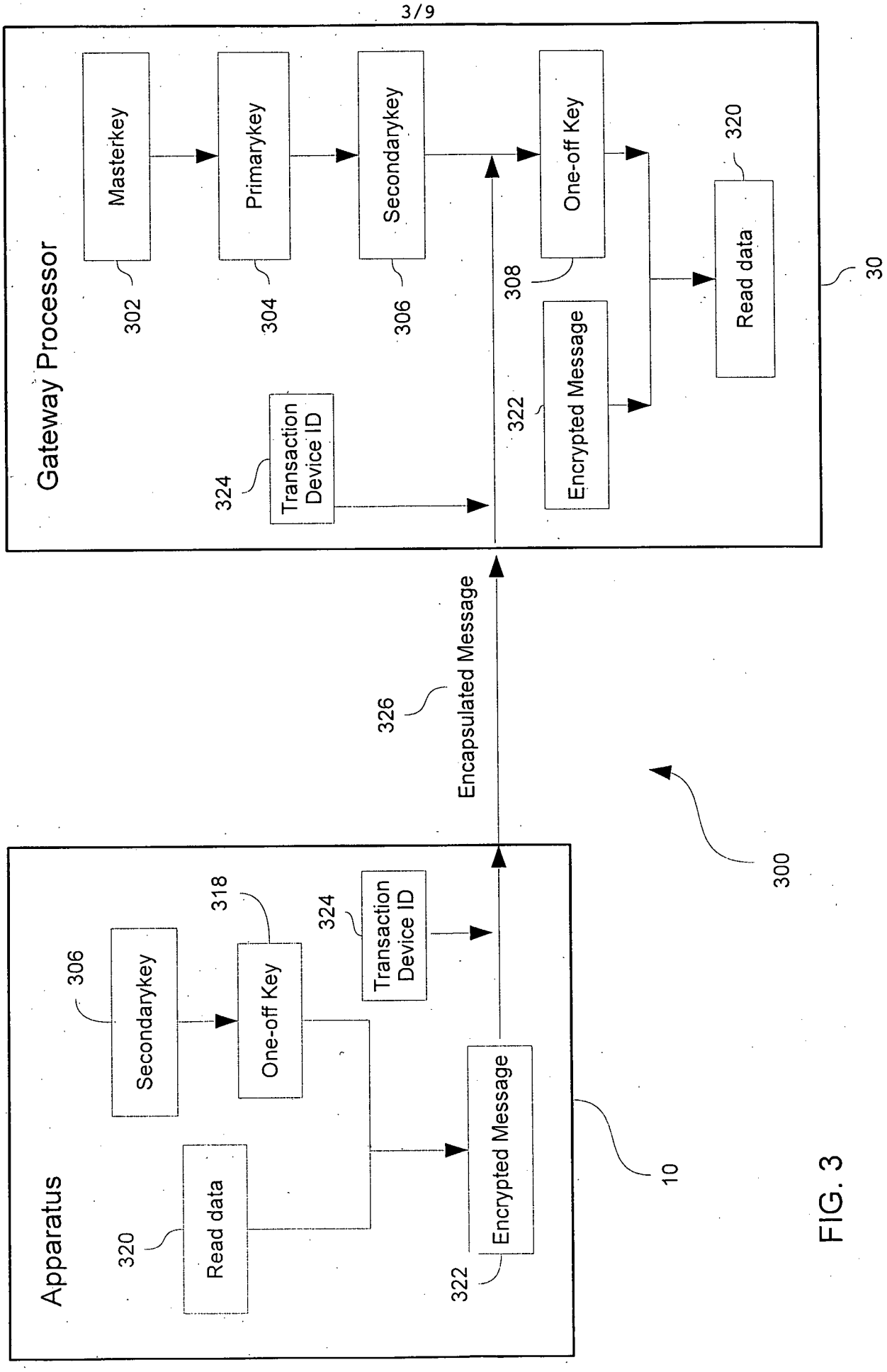

Gateway Processor
Masterkey
Primarykey
Secondarykey
One-off Key
Read data
Encrypted Message
Transaction Device ID
302
304
306
308
320
322
324
30
Encapsulated Message
326
300
Apparatus
Secondarykey
One-off Key
Transaction Device ID
Read data
Encrypted Message
306
318
324
320
322
10

FIG. 3

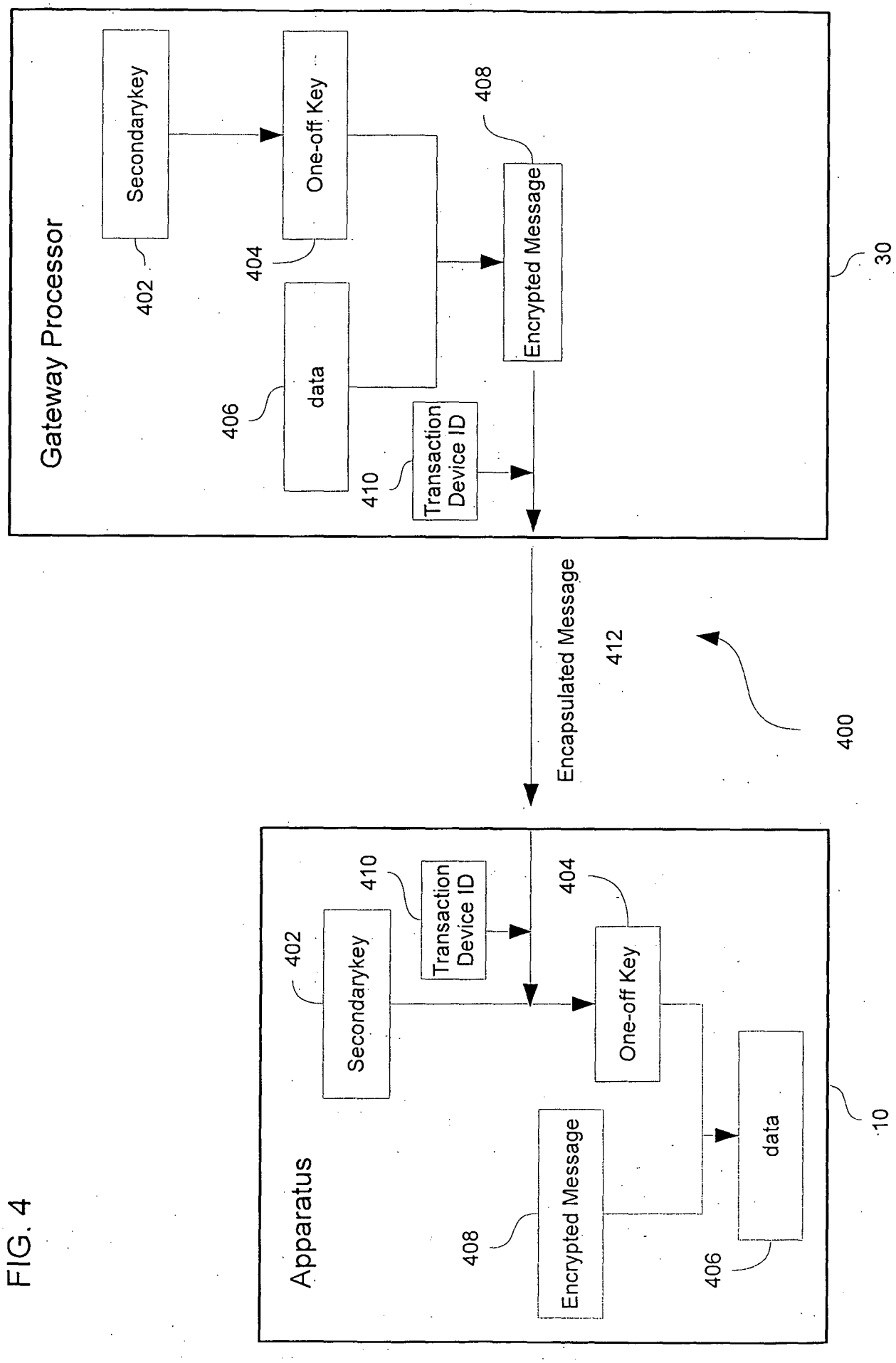

Gateway Processor
Secondarykey
402
One-off Key
404
data
406
Transaction Device ID
410
Encrypted Message
408
30
Encapsulated Message
412
400
Apparatus
Secondarykey
402
Transaction Device ID
410
One-off Key
404
Encrypted Message
408
data
406
10

FIG. 4

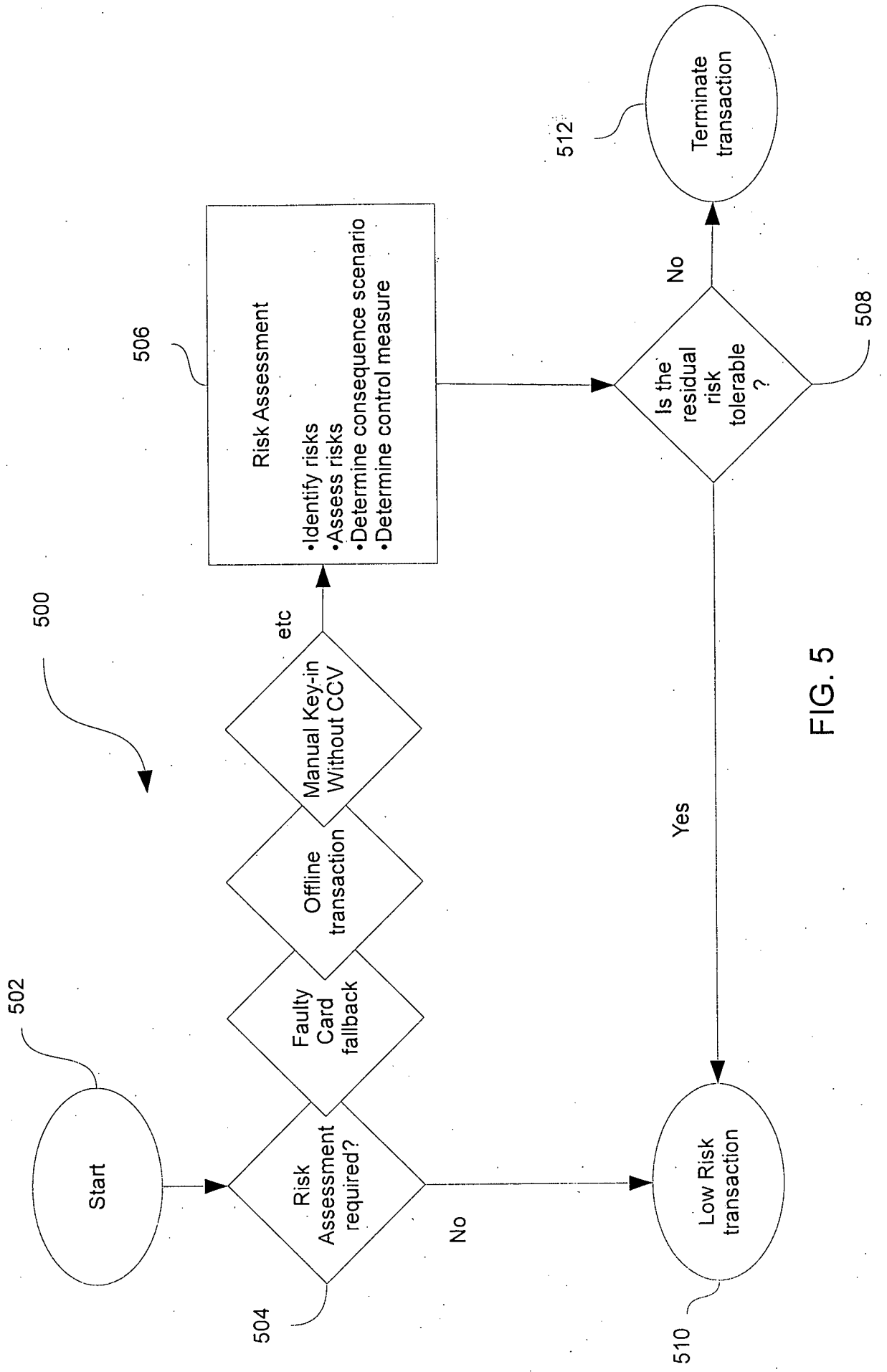

500
502
Start
504
Risk Assessment required?
No
Faulty Card fallback
Offline transaction
Manual Key-in Without CCV
etc
506
Risk Assessment
•Identify risks
•Assess risks
•Determine consequence scenario
•Determine control measure
508
Is the residual risk tolerable ?
No
512
Terminate transaction
Yes
510
Low Risk transaction

FIG. 5

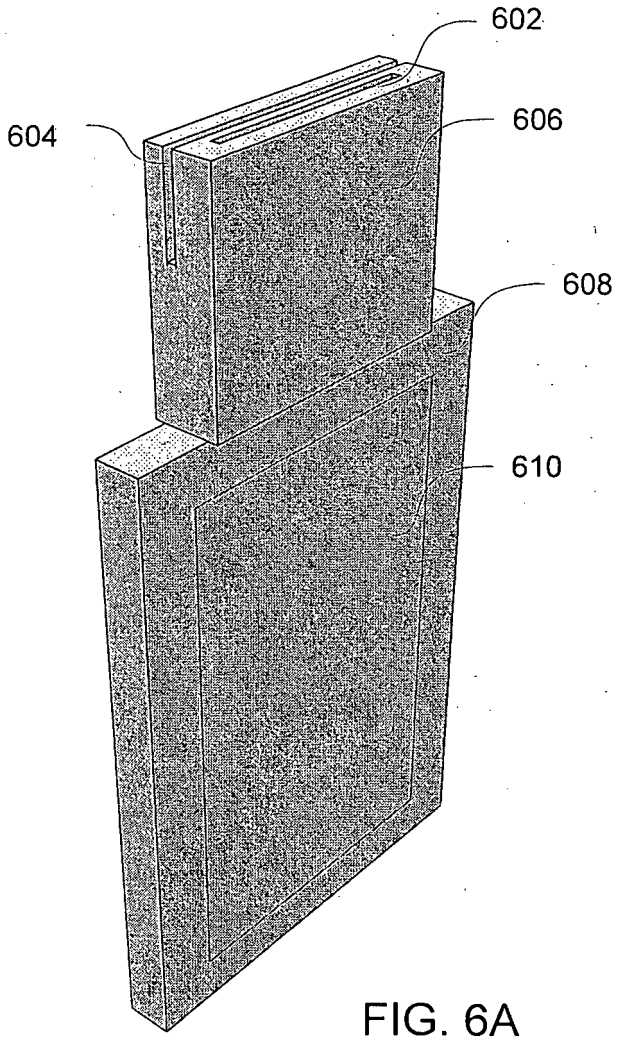


FIG. 6A

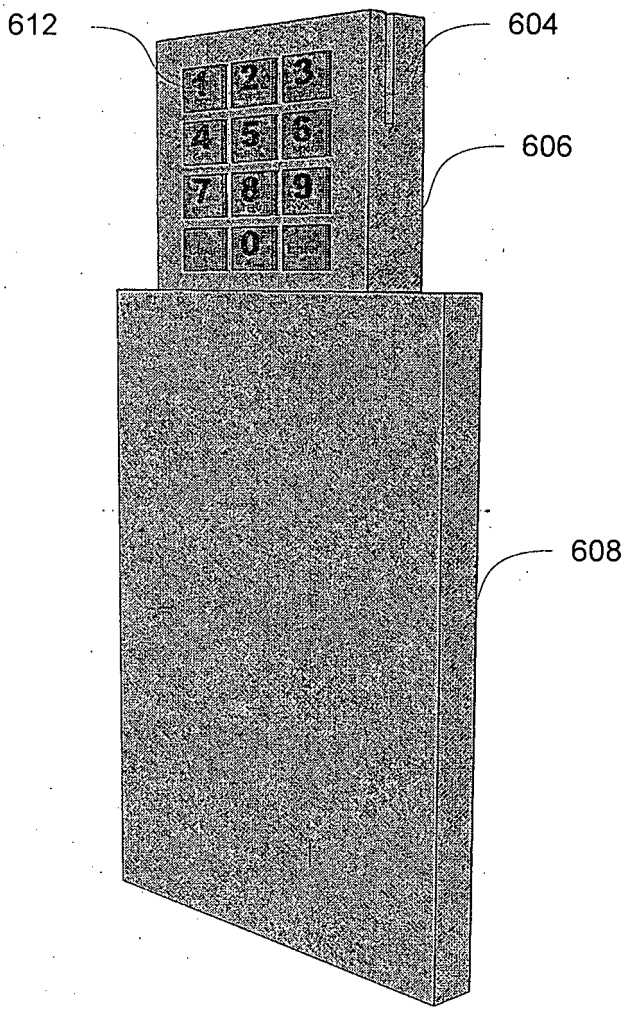


FIG. 6B

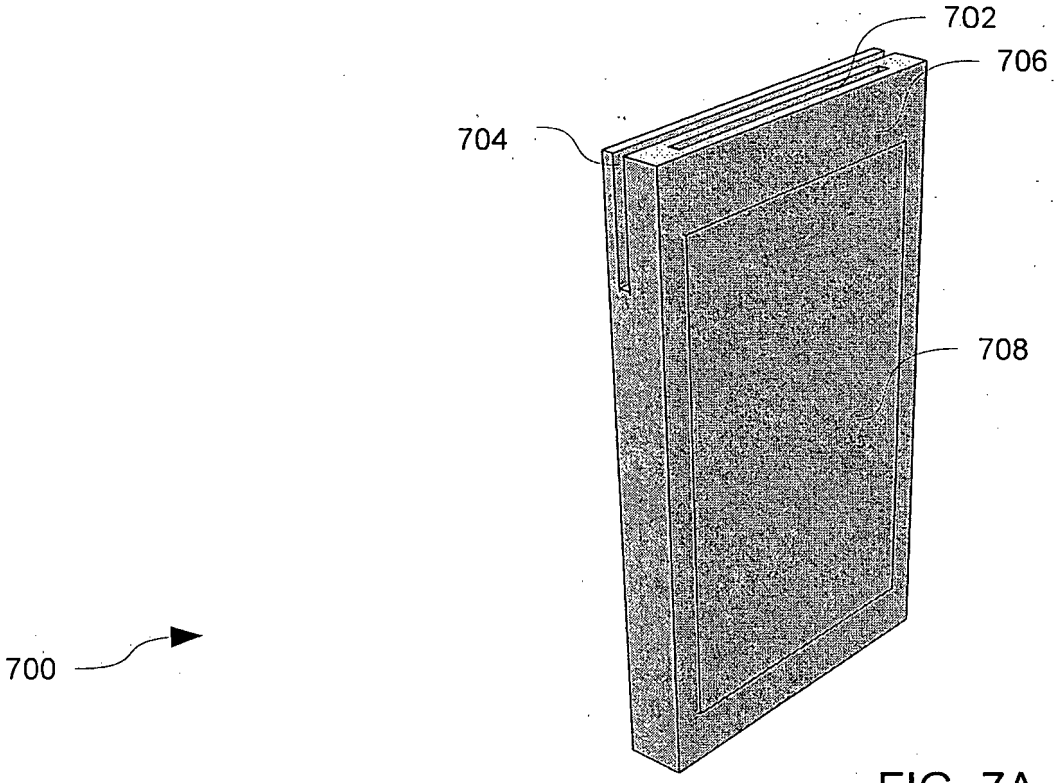


FIG. 7A

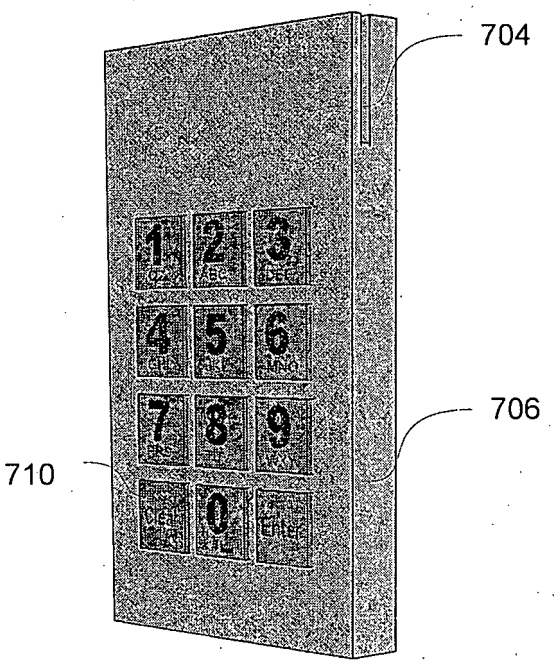


FIG. 7B

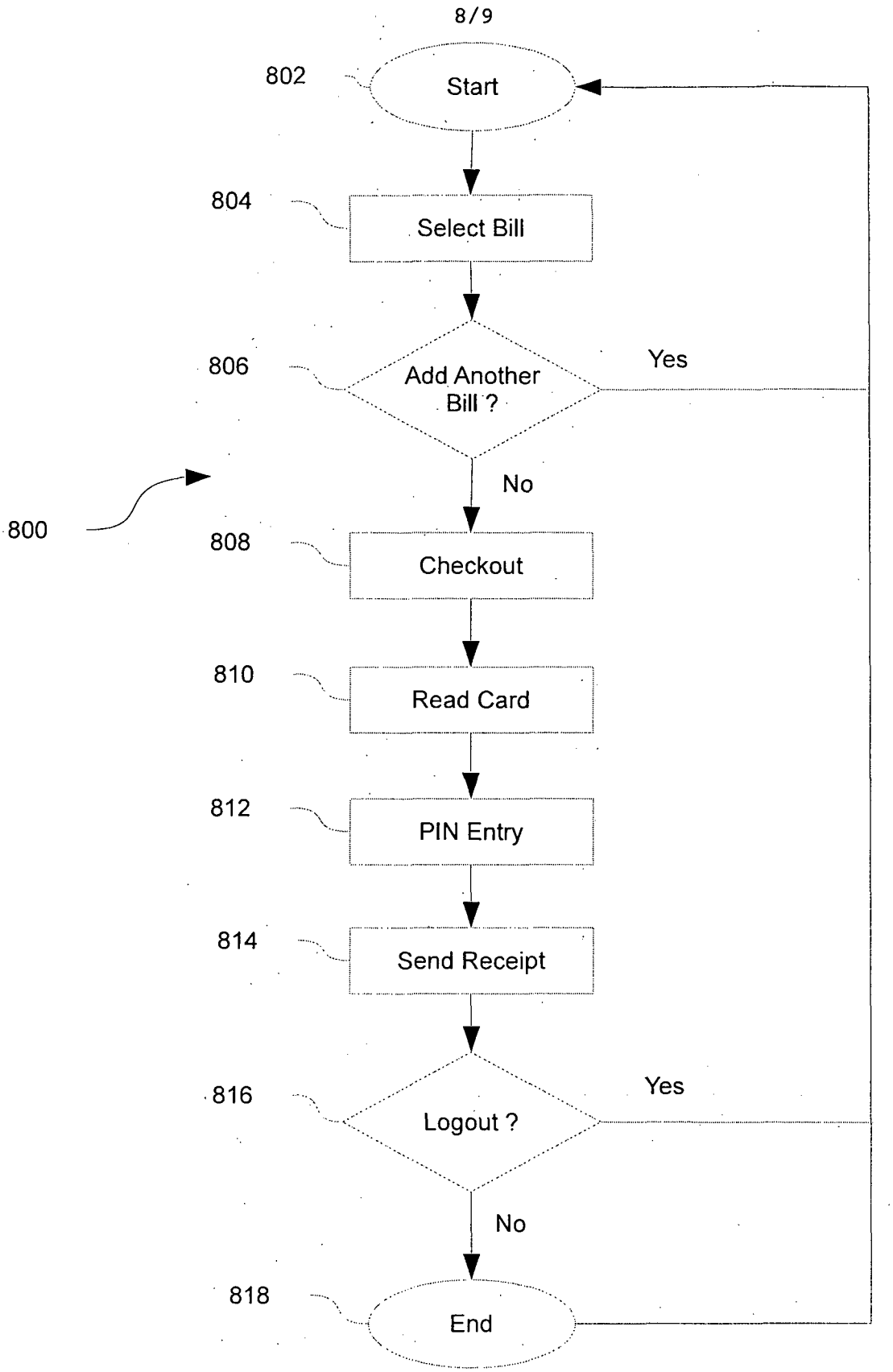
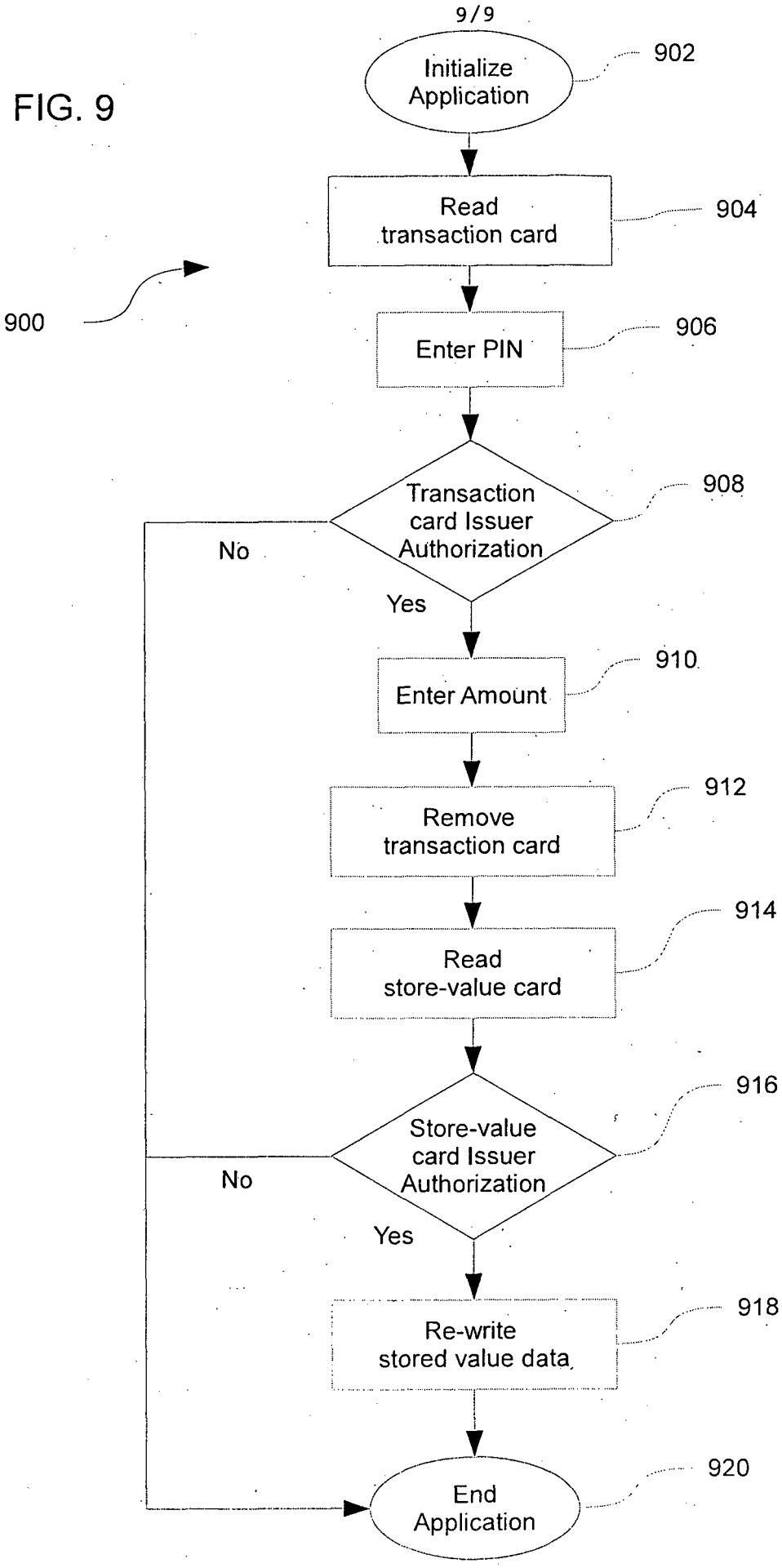

800
802
Start
804
Select Bill
806
Add Another Bill ?
Yes
No
808
Checkout
810
Read Card
812
PIN Entry
814
Send Receipt
816
Logout ?
Yes
No
818
End

FIG. 8

FIG. 9


900
Initialize Application
902
Read transaction card
904
Enter PIN
906
Transaction card Issuer Authorization
908
No
Yes
Enter Amount
910
Remove transaction card
912
Read store-value card
914
Store-value card Issuer Authorization
916
No
Yes
Re-write stored value data
918
End Application
920