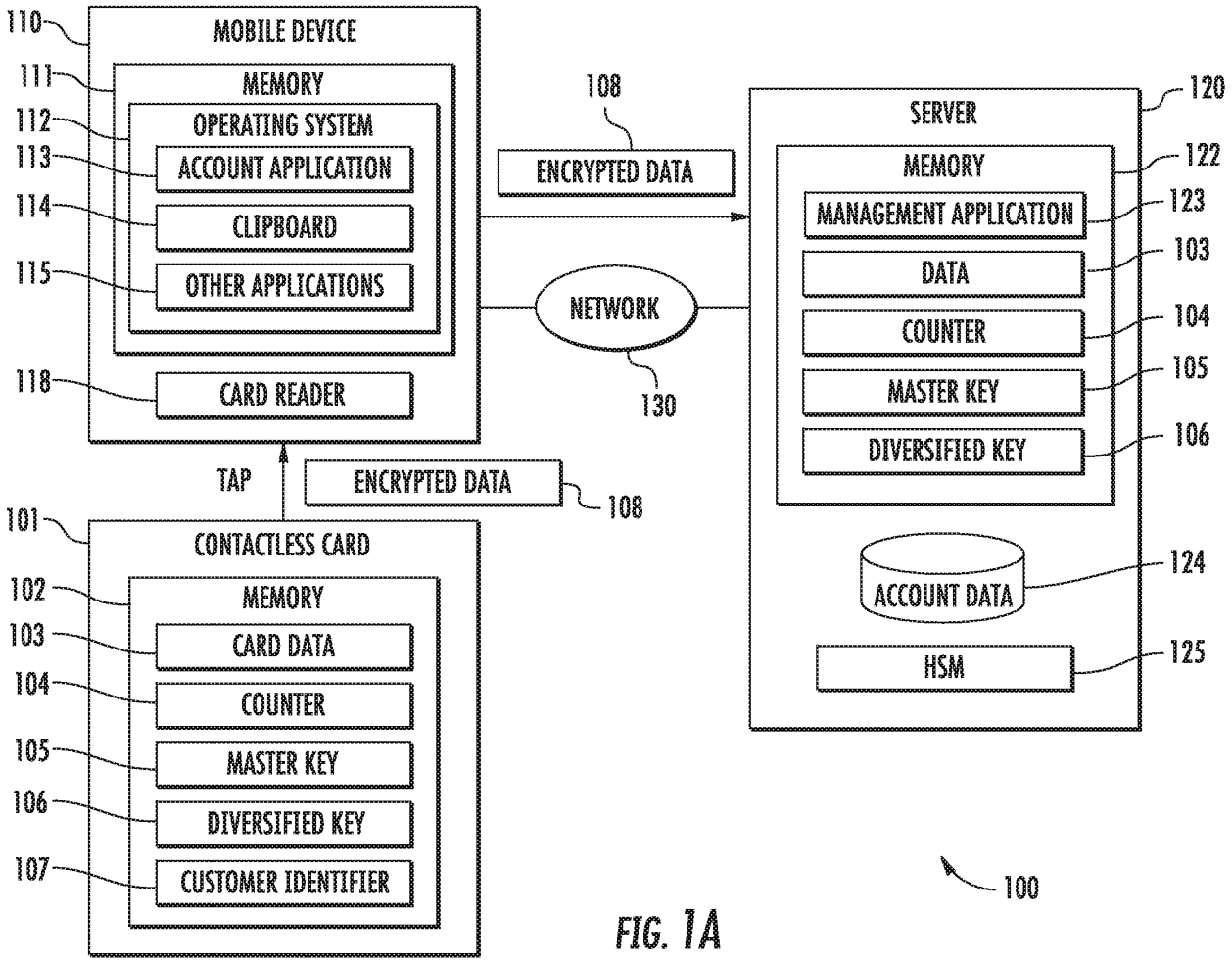

110
MOBILE DEVICE
111
MEMORY
112
OPERATING SYSTEM
113
ACCOUNT APPLICATION
114
CLIPBOARD
115
OTHER APPLICATIONS
118
CARD READER
108
ENCRYPTED DATA
NETWORK
130
120
SERVER
122
MEMORY
123
MANAGEMENT APPLICATION
103
DATA
104
COUNTER
105
MASTER KEY
106
DIVERSIFIED KEY
124
ACCOUNT DATA
125
HSM
TAP
ENCRYPTED DATA
108
101
CONTACTLESS CARD
102
MEMORY
103
CARD DATA
104
COUNTER
105
MASTER KEY
106
DIVERSIFIED KEY
107
CUSTOMER IDENTIFIER
100

FIG. 1A

1/11

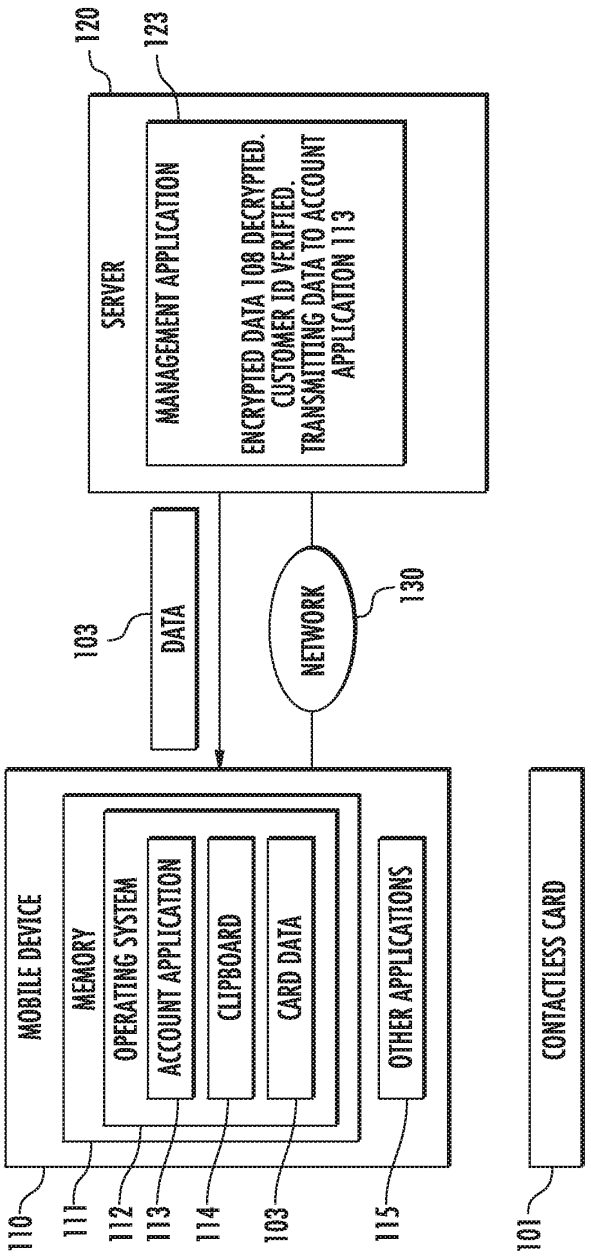

120
123
SERVER
MANAGEMENT APPLICATION
ENCRYPTED DATA 108 DECRYPTED.
CUSTOMER ID VERIFIED.
TRANSMITTING DATA TO ACCOUNT
APPLICATION 113
100
103
DATA
NETWORK
130
MOBILE DEVICE
MEMORY
OPERATING SYSTEM
ACCOUNT APPLICATION
CLIPBOARD
CARD DATA
OTHER APPLICATIONS
CONTACTLESS CARD
110
111
112
113
114
103
115
101

FIG. 1B

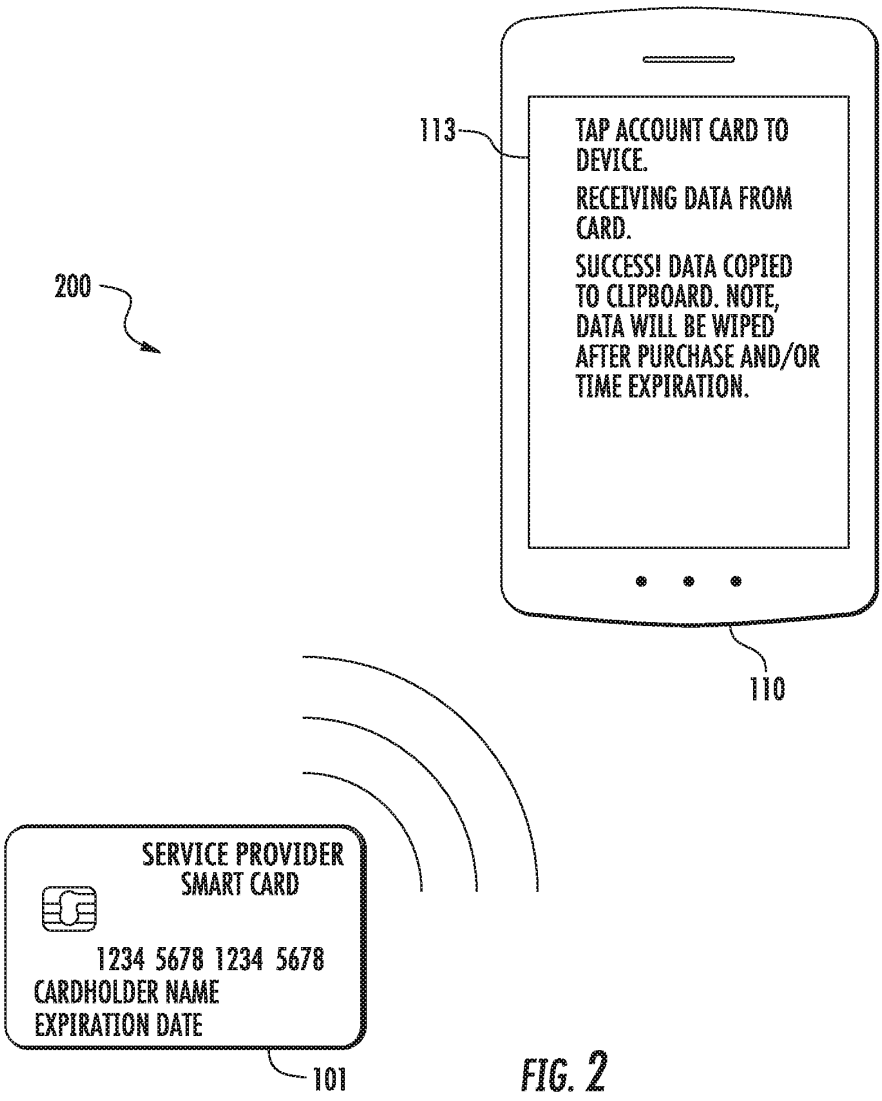

113
TAP ACCOUNT CARD TO DEVICE.
RECEIVING DATA FROM CARD.
SUCCESS! DATA COPIED TO CLIPBOARD. NOTE, DATA WILL BE WIPED AFTER PURCHASE AND/OR TIME EXPIRATION.
200
110
SERVICE PROVIDER
SMART CARD
1234 5678 1234 5678
CARDHOLDER NAME
EXPIRATION DATE
101

FIG. 2

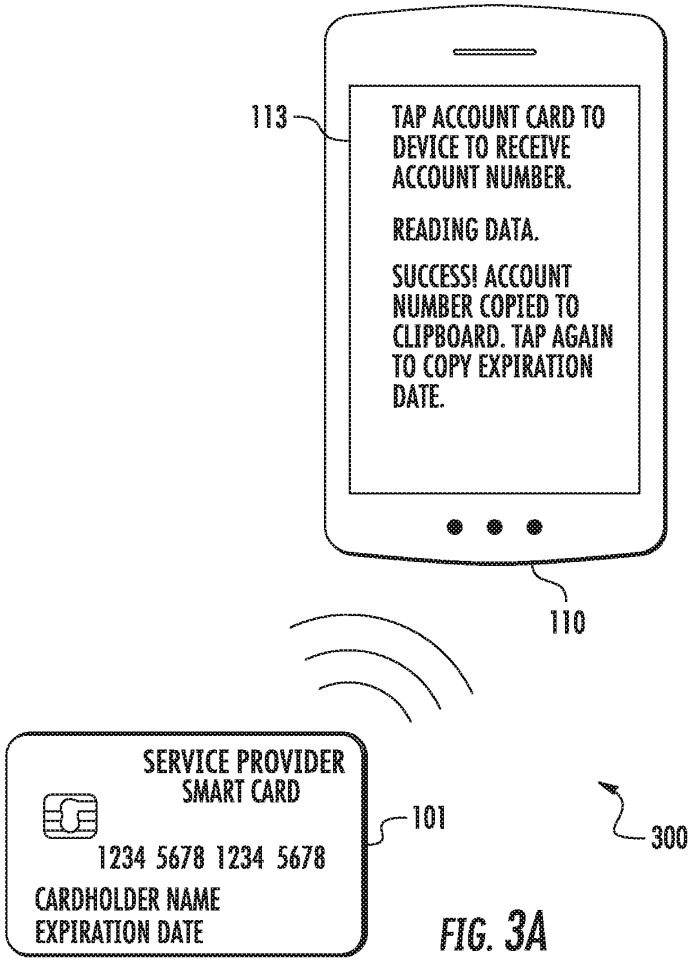

113
TAP ACCOUNT CARD TO DEVICE TO RECEIVE ACCOUNT NUMBER.
READING DATA.
SUCCESS! ACCOUNT NUMBER COPIED TO CLIPBOARD. TAP AGAIN TO COPY EXPIRATION DATE.
110
SERVICE PROVIDER SMART CARD
1234 5678 1234 5678
CARDHOLDER NAME
EXPIRATION DATE
101
300

FIG. 3A

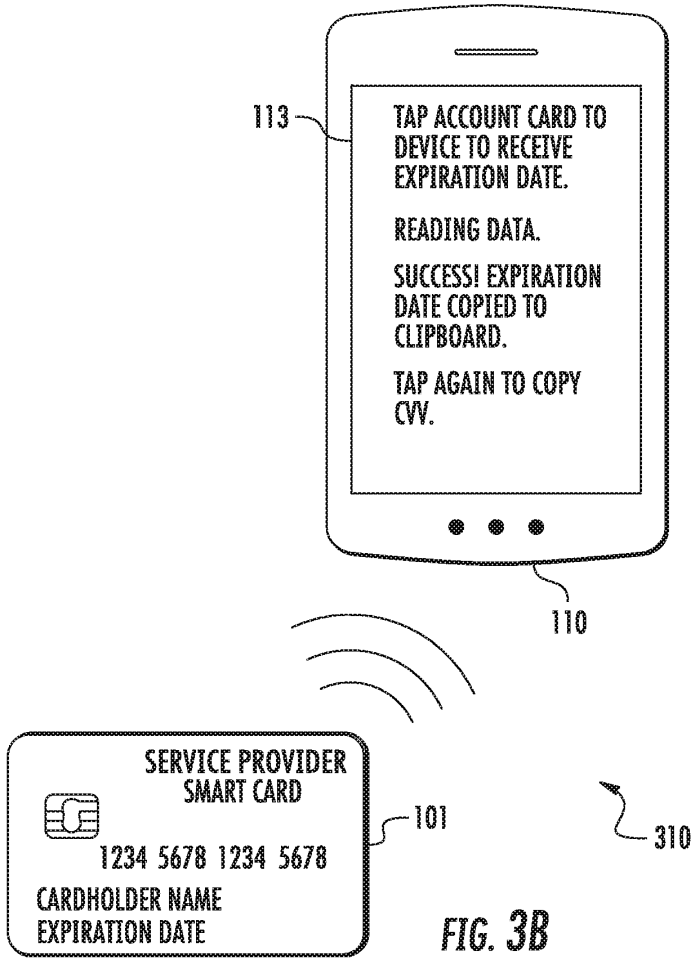

113
TAP ACCOUNT CARD TO DEVICE TO RECEIVE EXPIRATION DATE.
READING DATA.
SUCCESS! EXPIRATION DATE COPIED TO CLIPBOARD.
TAP AGAIN TO COPY CVV.
110
SERVICE PROVIDER SMART CARD
1234 5678 1234 5678
CARDHOLDER NAME
EXPIRATION DATE
101
310

FIG. 3B

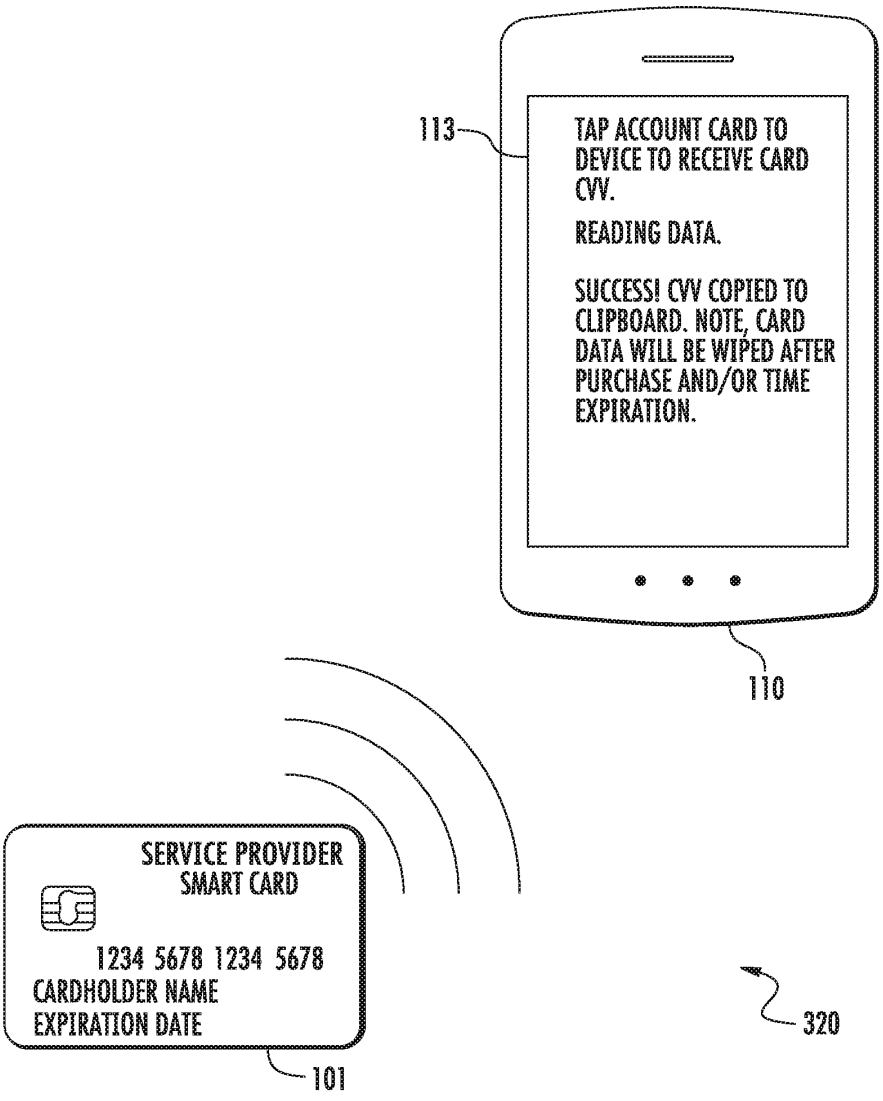

113
TAP ACCOUNT CARD TO DEVICE TO RECEIVE CARD CVV.
READING DATA.
SUCCESS! CVV COPIED TO CLIPBOARD. NOTE, CARD DATA WILL BE WIPED AFTER PURCHASE AND/OR TIME EXPIRATION.
110
SERVICE PROVIDER
SMART CARD
1234 5678 1234 5678
CARDHOLDER NAME
EXPIRATION DATE
101
320

FIG. 3C

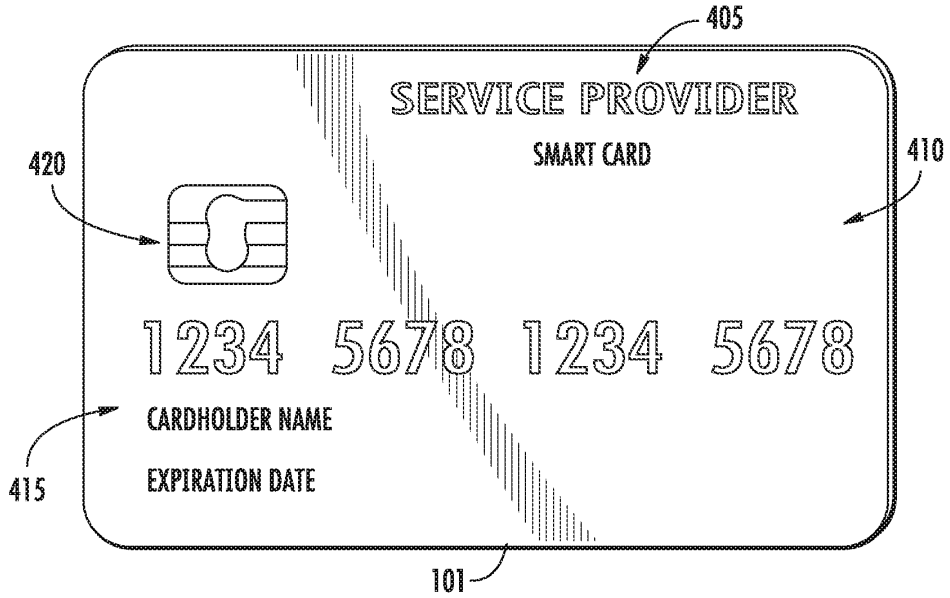

405
SERVICE PROVIDER
SMART CARD
420
410
1234 5678 1234 5678
CARDHOLDER NAME
EXPIRATION DATE
415
101

FIG. 4A

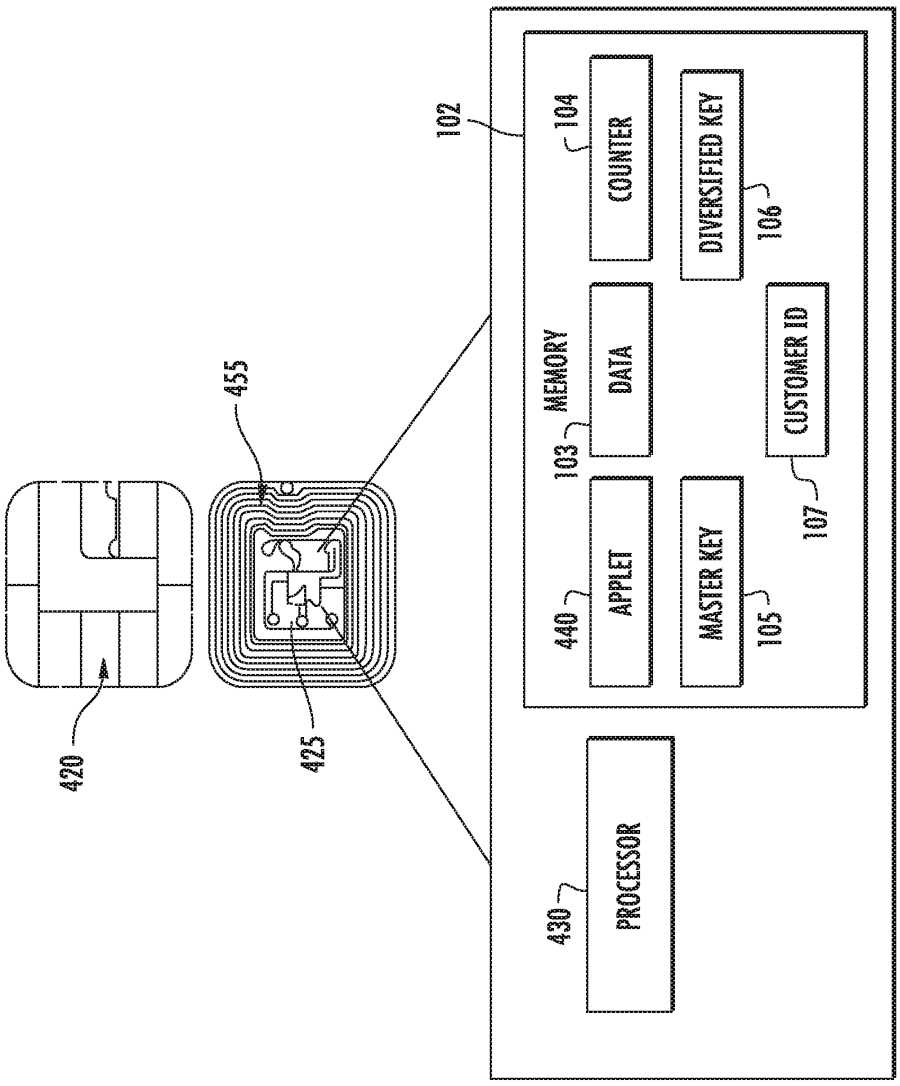

102
104
COUNTER
DIVERSIFIED KEY
106
MEMORY
103
DATA
CUSTOMER ID
107
440
APPLET
MASTER KEY
105
430
PROCESSOR
455
425
420

FIG. 4B

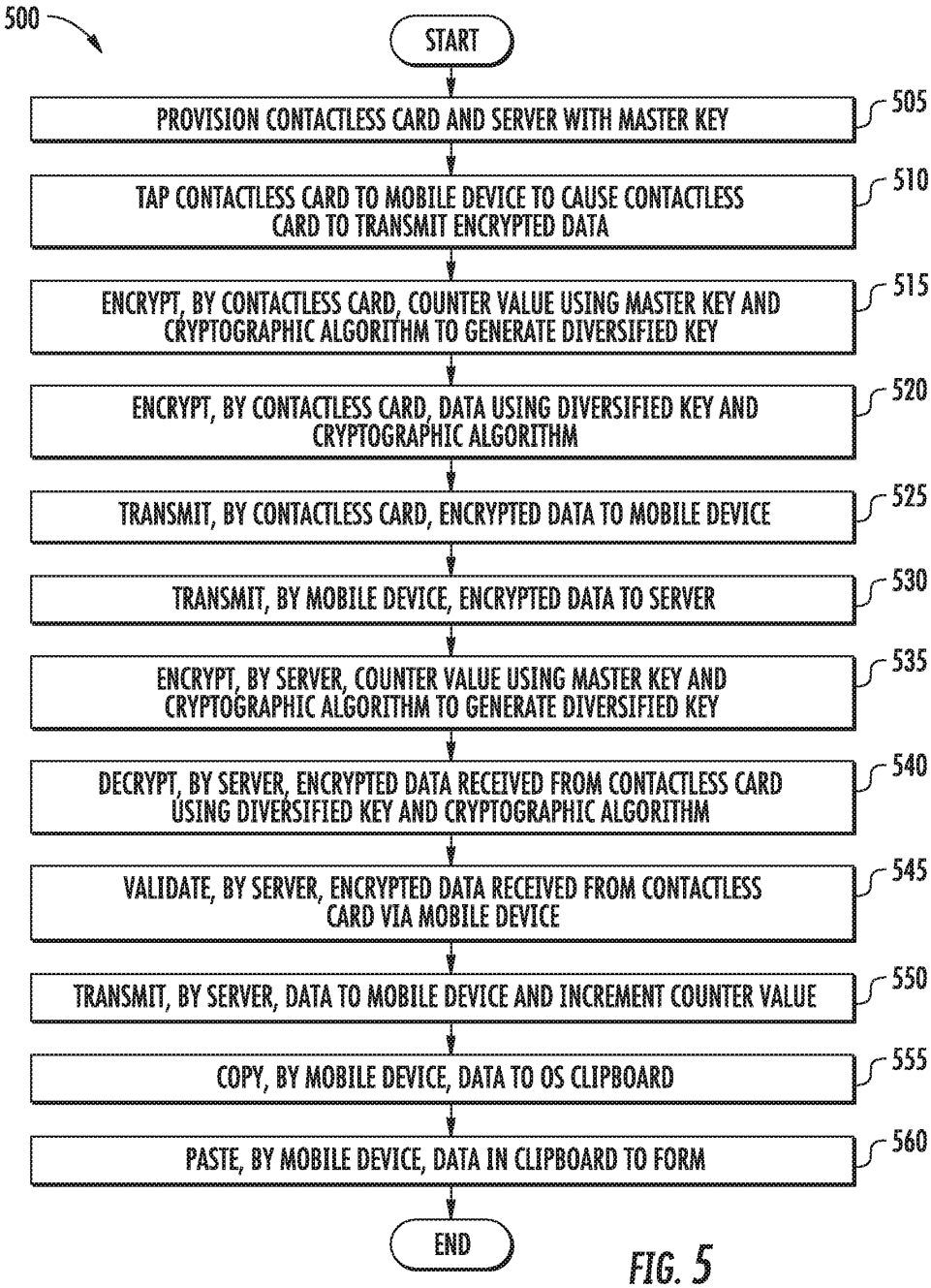

500
START
PROVISION CONTACTLESS CARD AND SERVER WITH MASTER KEY
505
TAP CONTACTLESS CARD TO MOBILE DEVICE TO CAUSE CONTACTLESS CARD TO TRANSMIT ENCRYPTED DATA
510
ENCRYPT, BY CONTACTLESS CARD, COUNTER VALUE USING MASTER KEY AND CRYPTOGRAPHIC ALGORITHM TO GENERATE DIVERSIFIED KEY
515
ENCRYPT, BY CONTACTLESS CARD, DATA USING DIVERSIFIED KEY AND CRYPTOGRAPHIC ALGORITHM
520
TRANSMIT, BY CONTACTLESS CARD, ENCRYPTED DATA TO MOBILE DEVICE
525
TRANSMIT, BY MOBILE DEVICE, ENCRYPTED DATA TO SERVER
530
ENCRYPT, BY SERVER, COUNTER VALUE USING MASTER KEY AND CRYPTOGRAPHIC ALGORITHM TO GENERATE DIVERSIFIED KEY
535
DECRYPT, BY SERVER, ENCRYPTED DATA RECEIVED FROM CONTACTLESS CARD USING DIVERSIFIED KEY AND CRYPTOGRAPHIC ALGORITHM
540
VALIDATE, BY SERVER, ENCRYPTED DATA RECEIVED FROM CONTACTLESS CARD VIA MOBILE DEVICE
545
TRANSMIT, BY SERVER, DATA TO MOBILE DEVICE AND INCREMENT COUNTER VALUE
550
COPY, BY MOBILE DEVICE, DATA TO OS CLIPBOARD
555
PASTE, BY MOBILE DEVICE, DATA IN CLIPBOARD TO FORM
560
END

FIG. 5

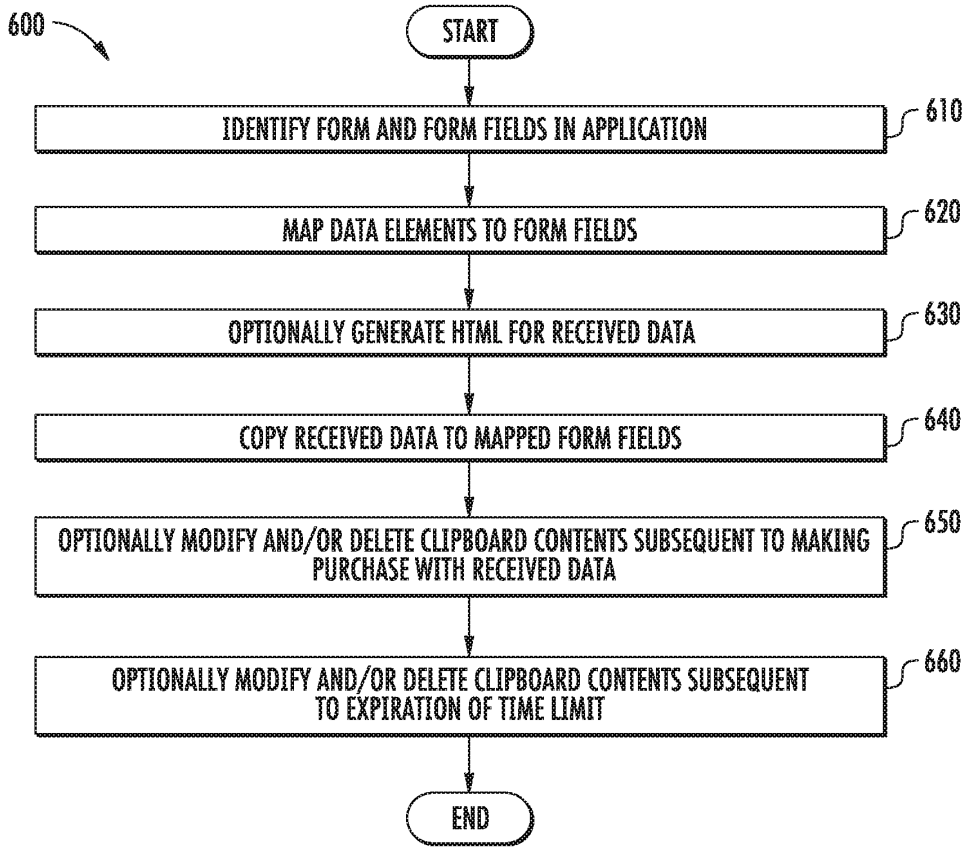

600
START
IDENTIFY FORM AND FORM FIELDS IN APPLICATION
610
MAP DATA ELEMENTS TO FORM FIELDS
620
OPTIONALLY GENERATE HTML FOR RECEIVED DATA
630
COPY RECEIVED DATA TO MAPPED FORM FIELDS
640
OPTIONALLY MODIFY AND/OR DELETE CLIPBOARD CONTENTS SUBSEQUENT TO MAKING PURCHASE WITH RECEIVED DATA
650
OPTIONALLY MODIFY AND/OR DELETE CLIPBOARD CONTENTS SUBSEQUENT TO EXPIRATION OF TIME LIMIT
660
END

FIG. 6

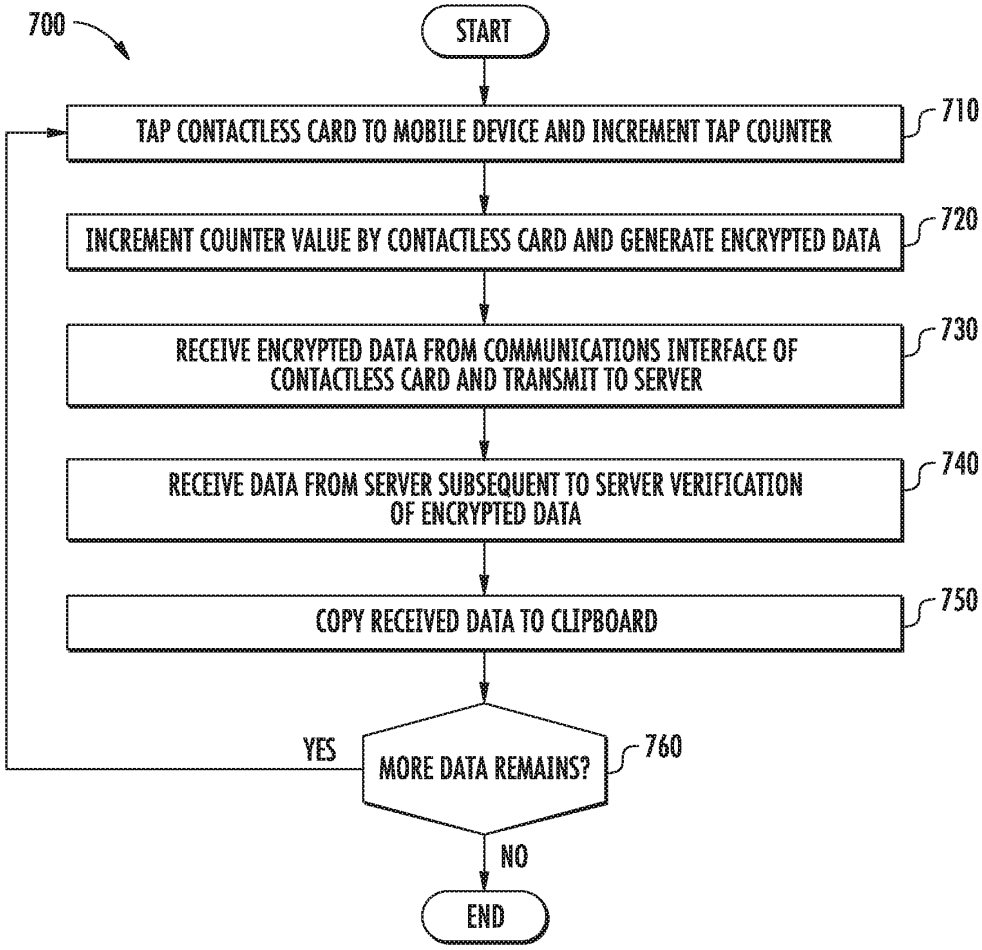

700
START
TAP CONTACTLESS CARD TO MOBILE DEVICE AND INCREMENT TAP COUNTER
710
INCREMENT COUNTER VALUE BY CONTACTLESS CARD AND GENERATE ENCRYPTED DATA
720
RECEIVE ENCRYPTED DATA FROM COMMUNICATIONS INTERFACE OF CONTACTLESS CARD AND TRANSMIT TO SERVER
730
RECEIVE DATA FROM SERVER SUBSEQUENT TO SERVER VERIFICATION OF ENCRYPTED DATA
740
COPY RECEIVED DATA TO CLIPBOARD
750
MORE DATA REMAINS?
760
YES
NO
END

FIG. 7

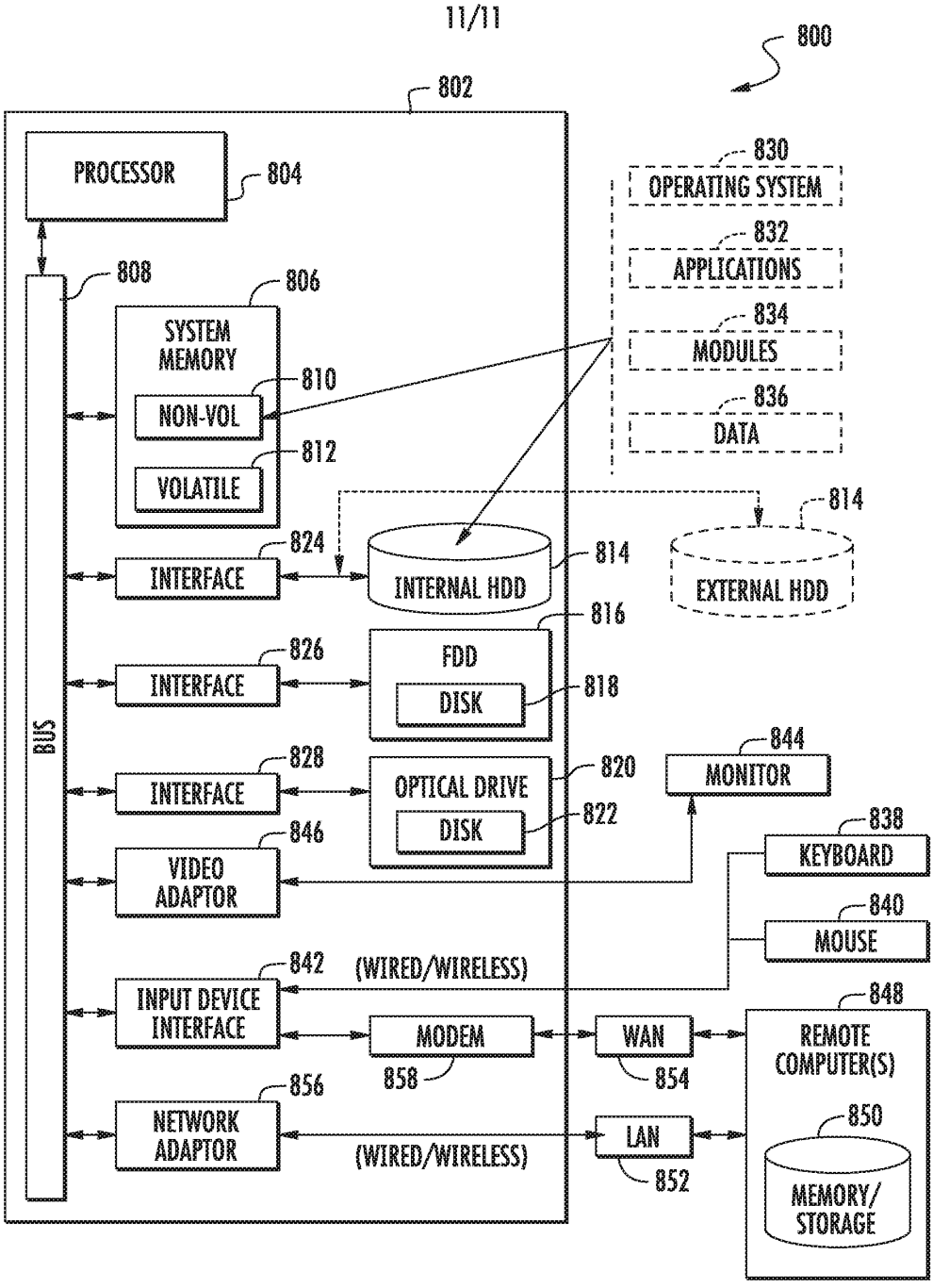

800
802
PROCESSOR
804
808
806
SYSTEM MEMORY
810
NON-VOL
812
VOLATILE
BUS
830
OPERATING SYSTEM
832
APPLICATIONS
834
MODULES
836
DATA
814
824
INTERFACE
INTERNAL HDD
814
EXTERNAL HDD
816
826
INTERFACE
FDD
DISK
818
828
INTERFACE
OPTICAL DRIVE
DISK
820
822
844
MONITOR
838
KEYBOARD
840
MOUSE
846
VIDEO ADAPTOR
842
(WIRED/WIRELESS)
INPUT DEVICE INTERFACE
MODEM
858
WAN
854
848
REMOTE COMPUTER(S)
856
NETWORK ADAPTOR
(WIRED/WIRELESS)
LAN
852
850
MEMORY/ STORAGE

FIG. 8