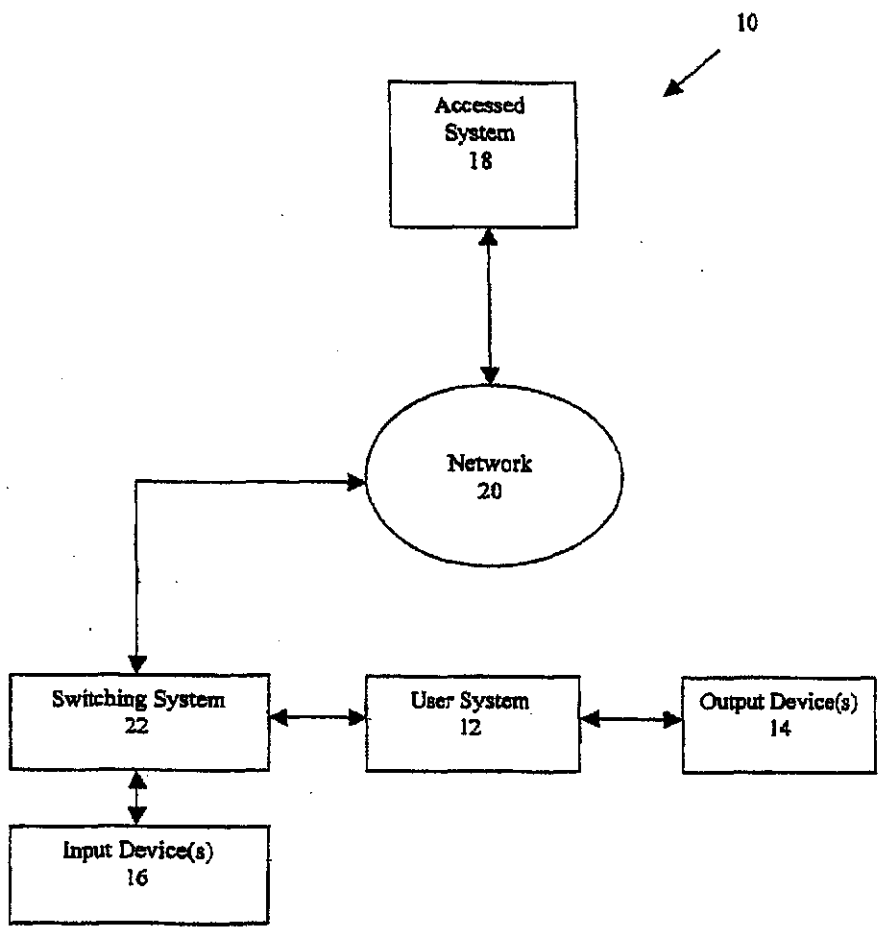

10
Accessed System 18
Network 20
Switching System 22
User System 12
Output Device(s) 14
Input Device(s) 16

Fig. 1

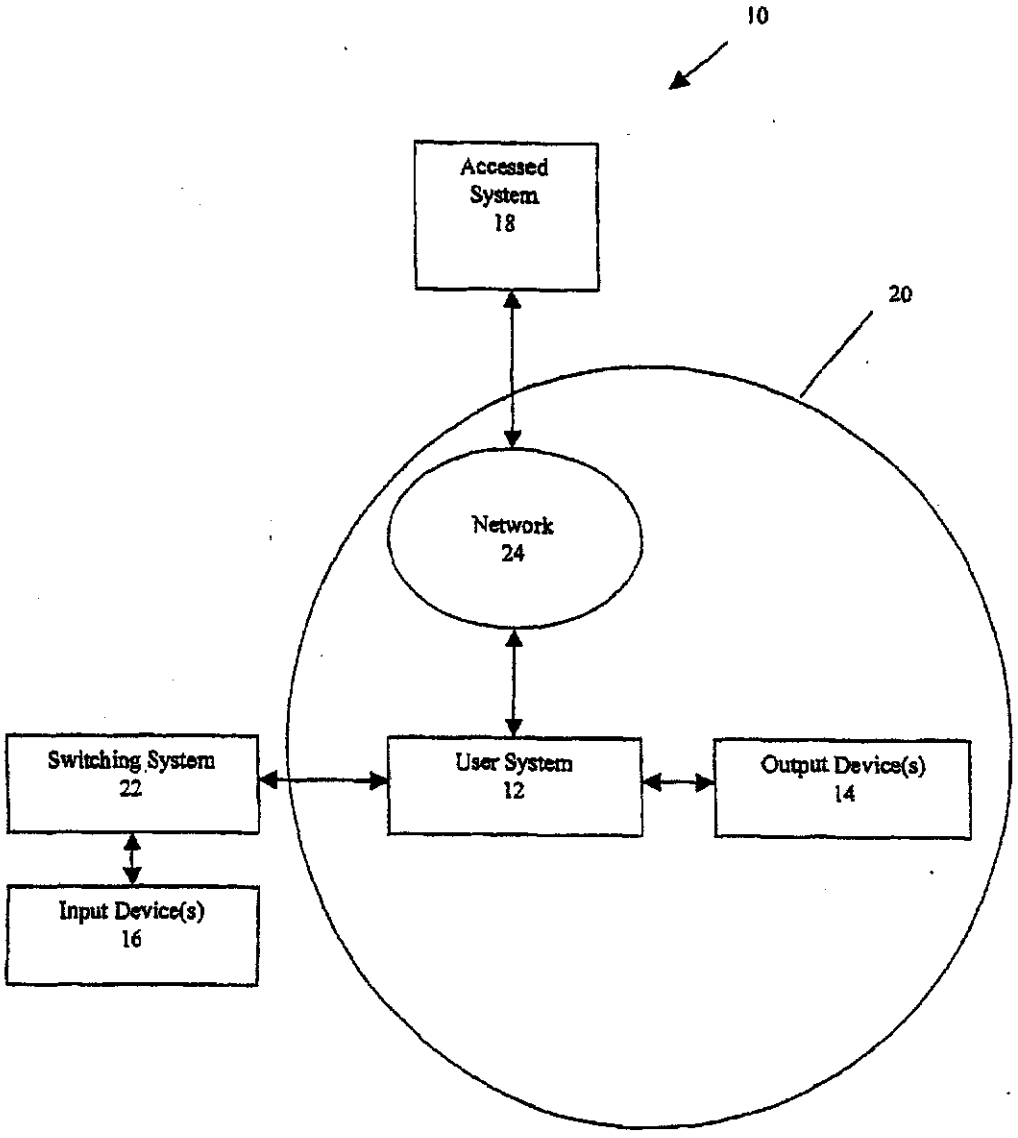

10
Accessed System 18
20
Network 24
Switching System 22
User System 12
Output Device(s) 14
Input Device(s) 16

Fig. 2

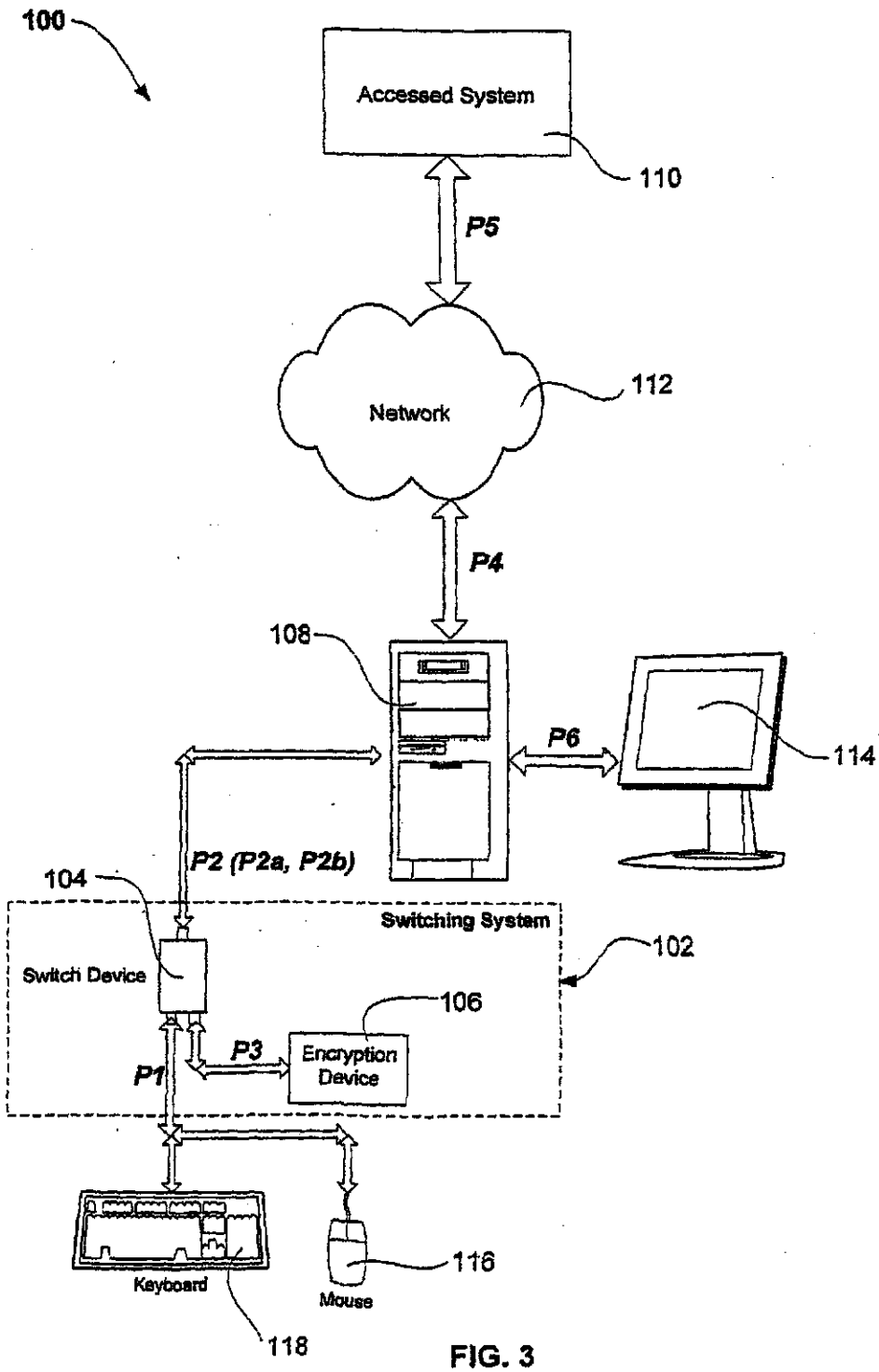

100
Accessed System
110
P5
Network
112
P4
108
P6
114
P2 (P2a, P2b)
104
Switching System
102
Switch Device
106
P3
Encryption Device
P1
Keyboard
Mouse
116
118

FIG. 3

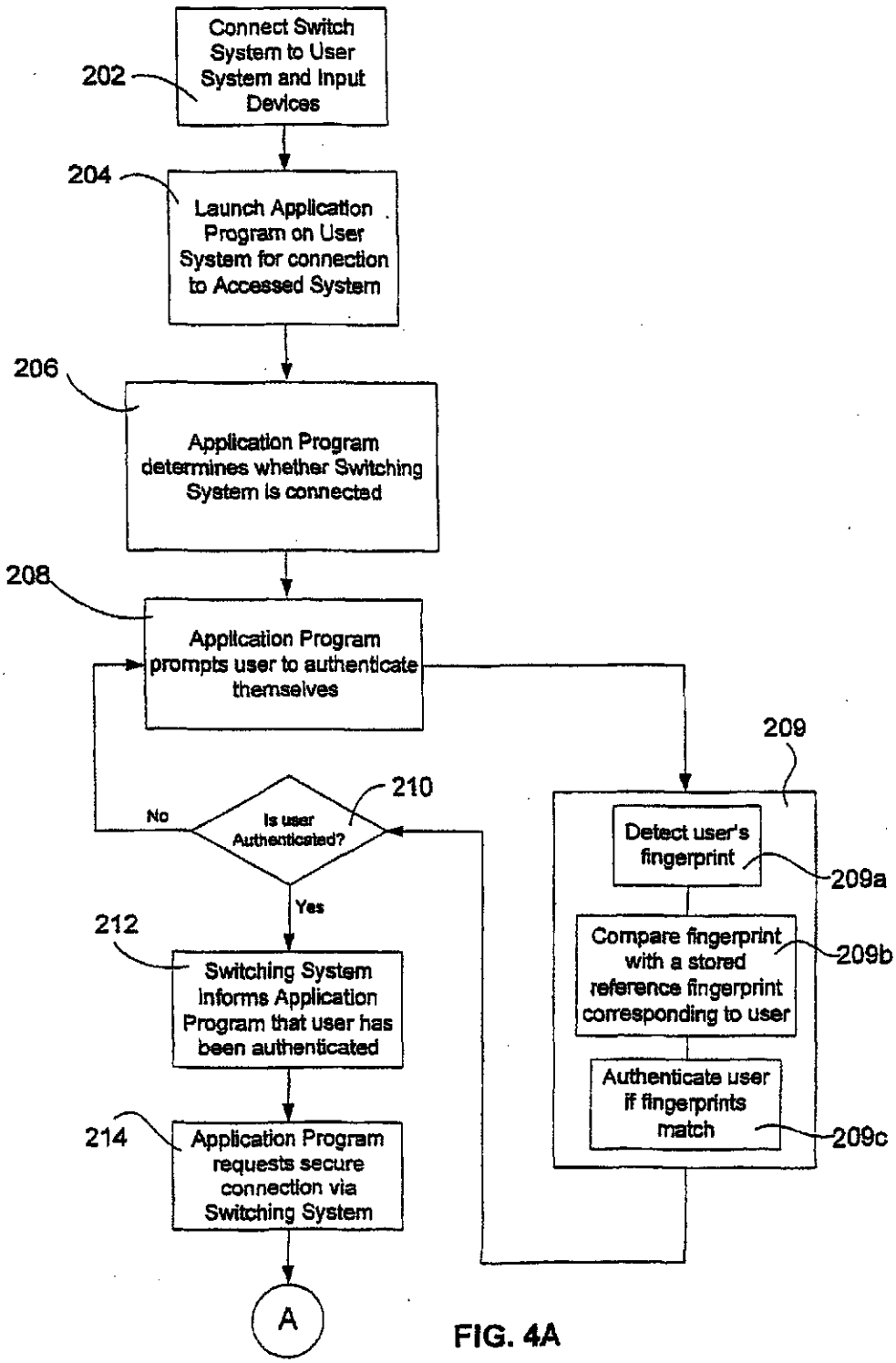

Connect Switch System to User System and Input Devices
202
Launch Application Program on User System for connection to Accessed System
204
Application Program determines whether Switching System is connected
206
Application Program prompts user to authenticate themselves
208
209
Detect user's fingerprint
209a
Compare fingerprint with a stored reference fingerprint corresponding to user
209b
Authenticate user if fingerprints match
209c
Is user Authenticated?
210
No
Yes
Switching System informs Application Program that user has been authenticated
212
Application Program requests secure connection via Switching System
214
A

FIG. 4A

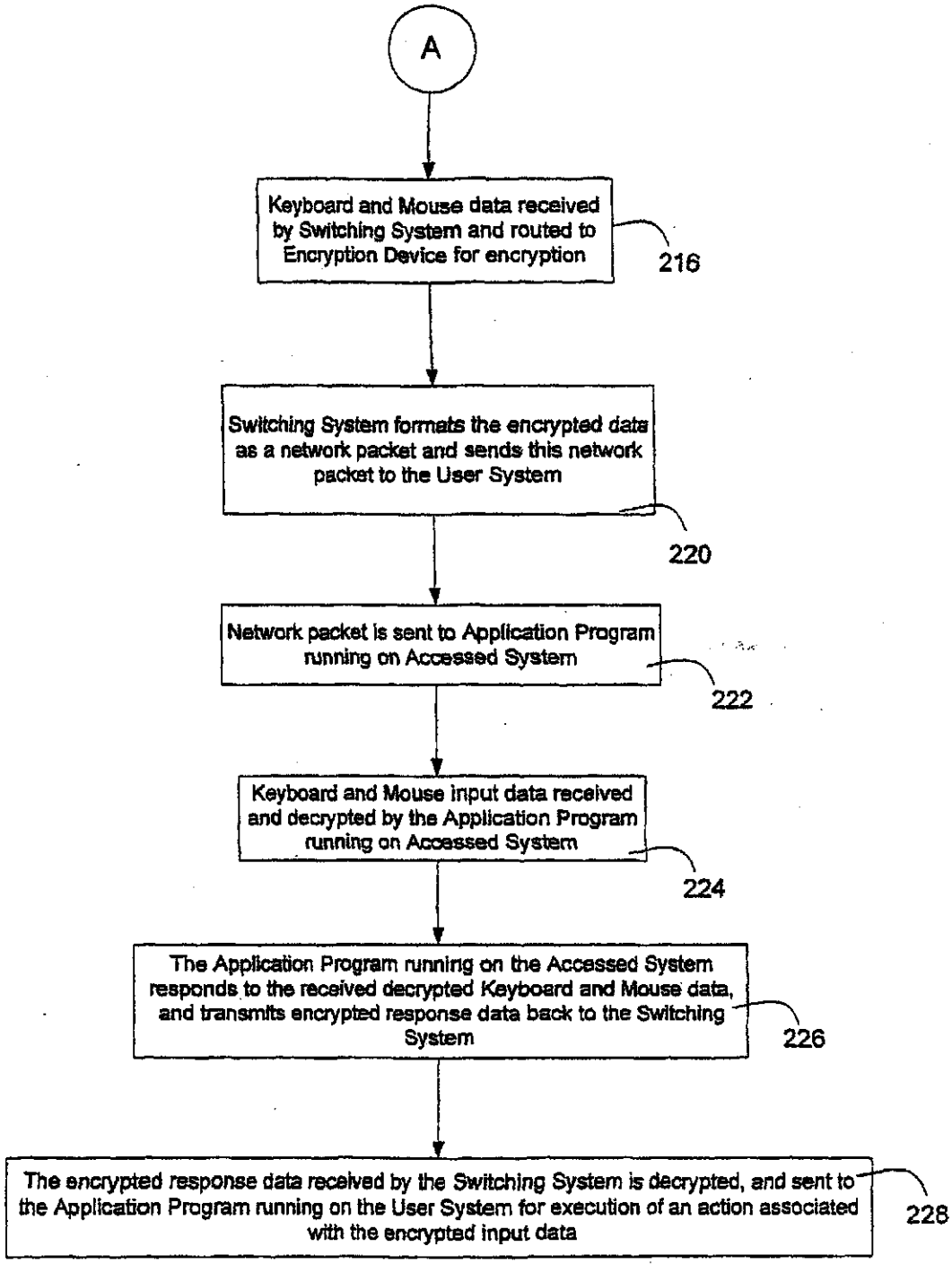

A
Keyboard and Mouse data received by Switching System and routed to Encryption Device for encryption
216
Switching System formats the encrypted data as a network packet and sends this network packet to the User System
220
Network packet is sent to Application Program running on Accessed System
222
Keyboard and Mouse input data received and decrypted by the Application Program running on Accessed System
224
The Application Program running on the Accessed System responds to the received decrypted Keyboard and Mouse data, and transmits encrypted response data back to the Switching System
226
The encrypted response data received by the Switching System is decrypted, and sent to the Application Program running on the User System for execution of an action associated with the encrypted input data
228

FIG. 4B

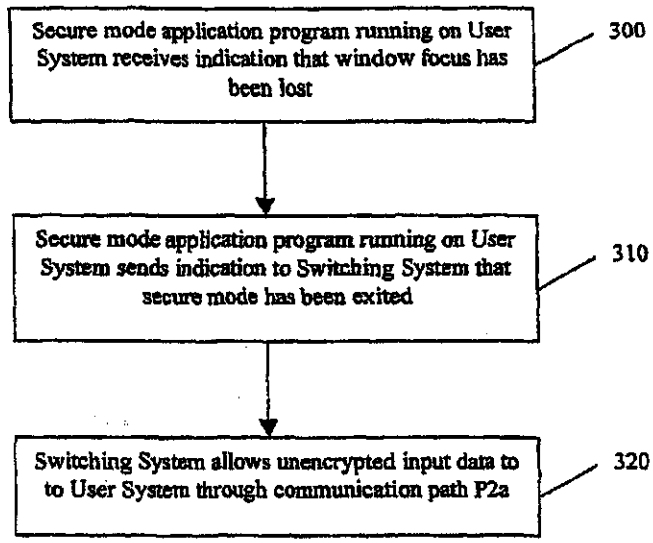

Secure mode application program running on User System receives indication that window focus has been lost
300
Secure mode application program running on User System sends indication to Switching System that secure mode has been exited
310
Switching System allows unencrypted input data to to User System through communication path P2a
320

Fig. 5

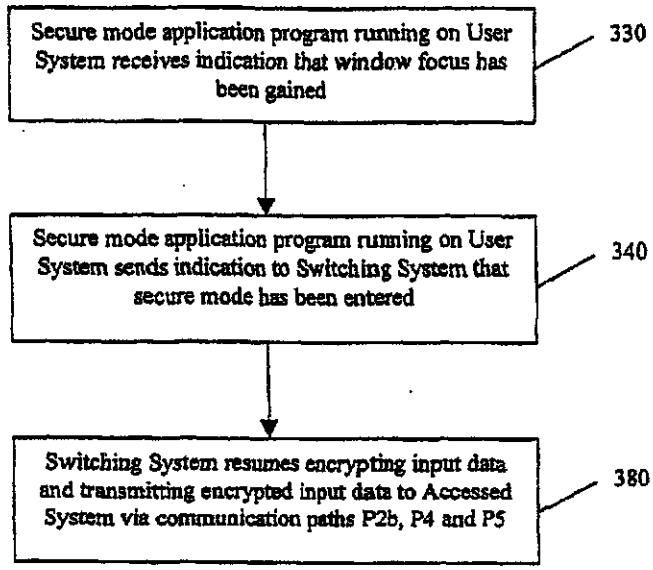

Secure mode application program running on User System receives indication that window focus has been gained
330
Secure mode application program running on User System sends indication to Switching System that secure mode has been entered
340
Switching System resumes encrypting input data and transmitting encrypted input data to Accessed System via communication paths P2b, P4 and P5
380

Fig. 6

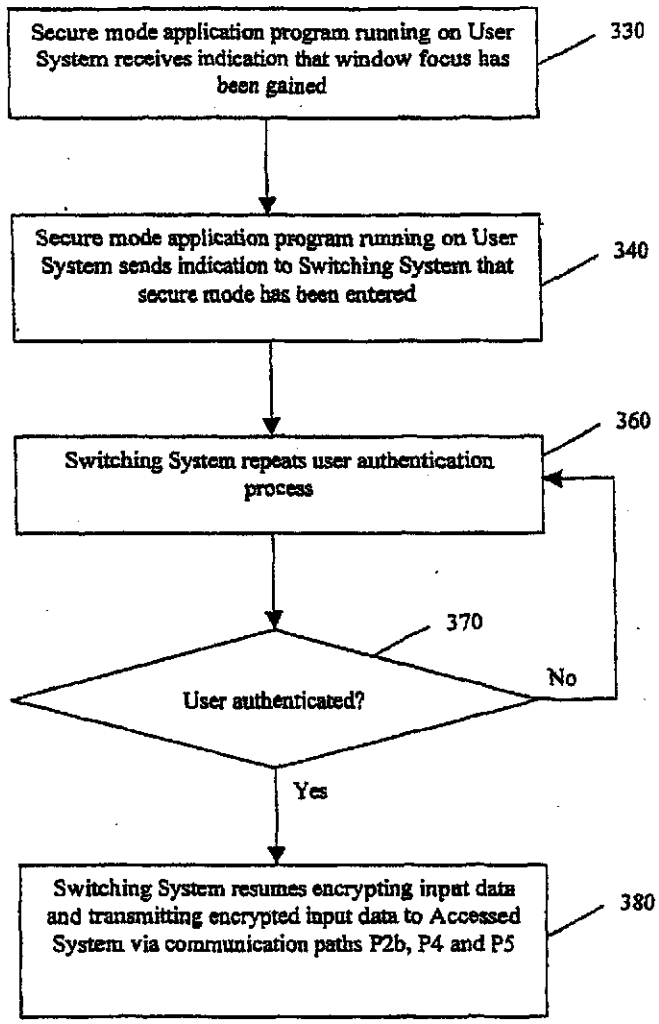

Secure mode application program running on User System receives indication that window focus has been gained
330
Secure mode application program running on User System sends indication to Switching System that secure mode has been entered
340
Switching System repeats user authentication process
360
User authenticated?
370
No
Yes
Switching System resumes encrypting input data and transmitting encrypted input data to Accessed System via communication paths P2b, P4 and P5
380

Fig. 7

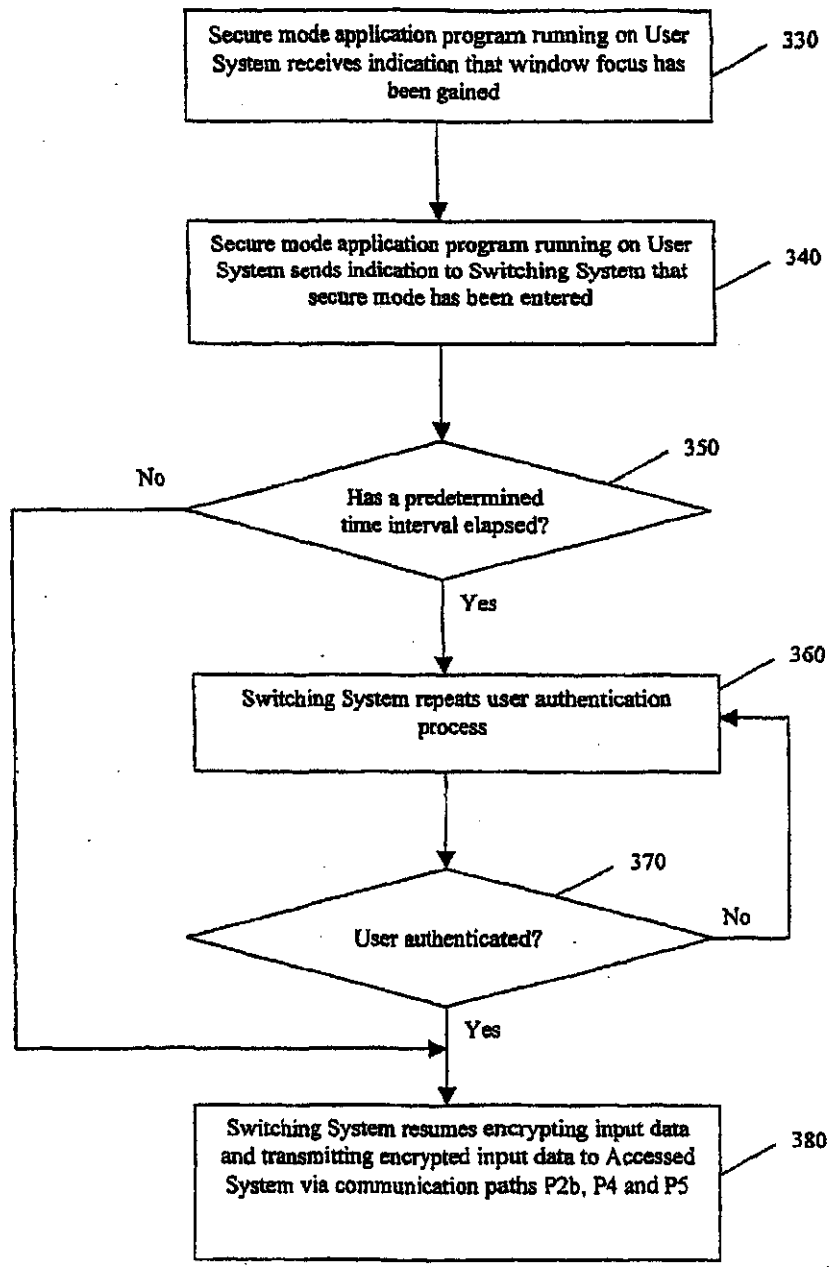

Secure mode application program running on User System receives indication that window focus has been gained
330
Secure mode application program running on User System sends indication to Switching System that secure mode has been entered
340
Has a predetermined time interval elapsed?
350
No
Yes
Switching System repeats user authentication process
360
User authenticated?
370
No
Yes
Switching System resumes encrypting input data and transmitting encrypted input data to Accessed System via communication paths P2b, P4 and P5
380

Fig. 8

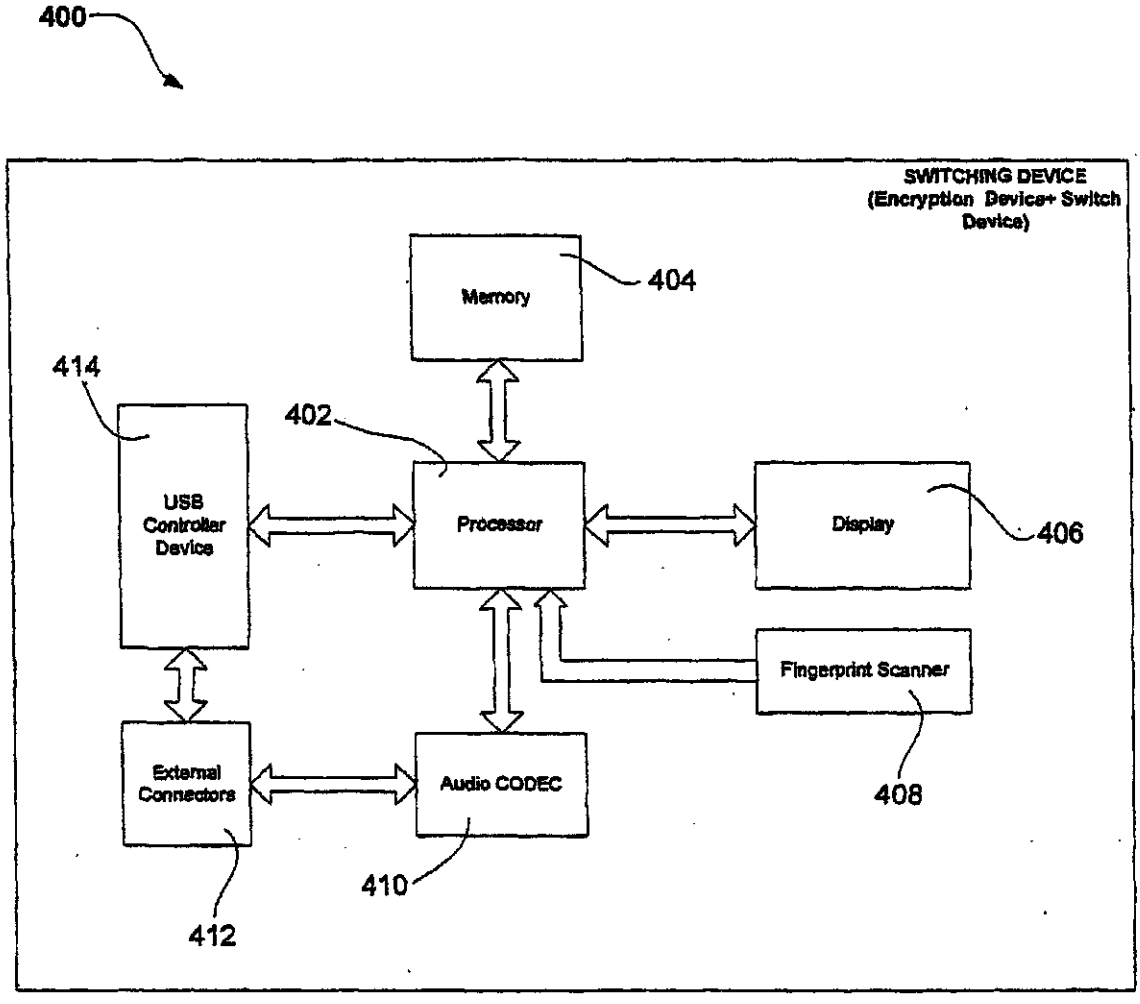

400
SWITCHING DEVICE
(Encryption Device+ Switch Device)
Memory
404
414
402
USB Controller Device
Processor
Display
406
Fingerprint Scanner
External Connectors
Audio CODEC
408
410
412

FIG. 9

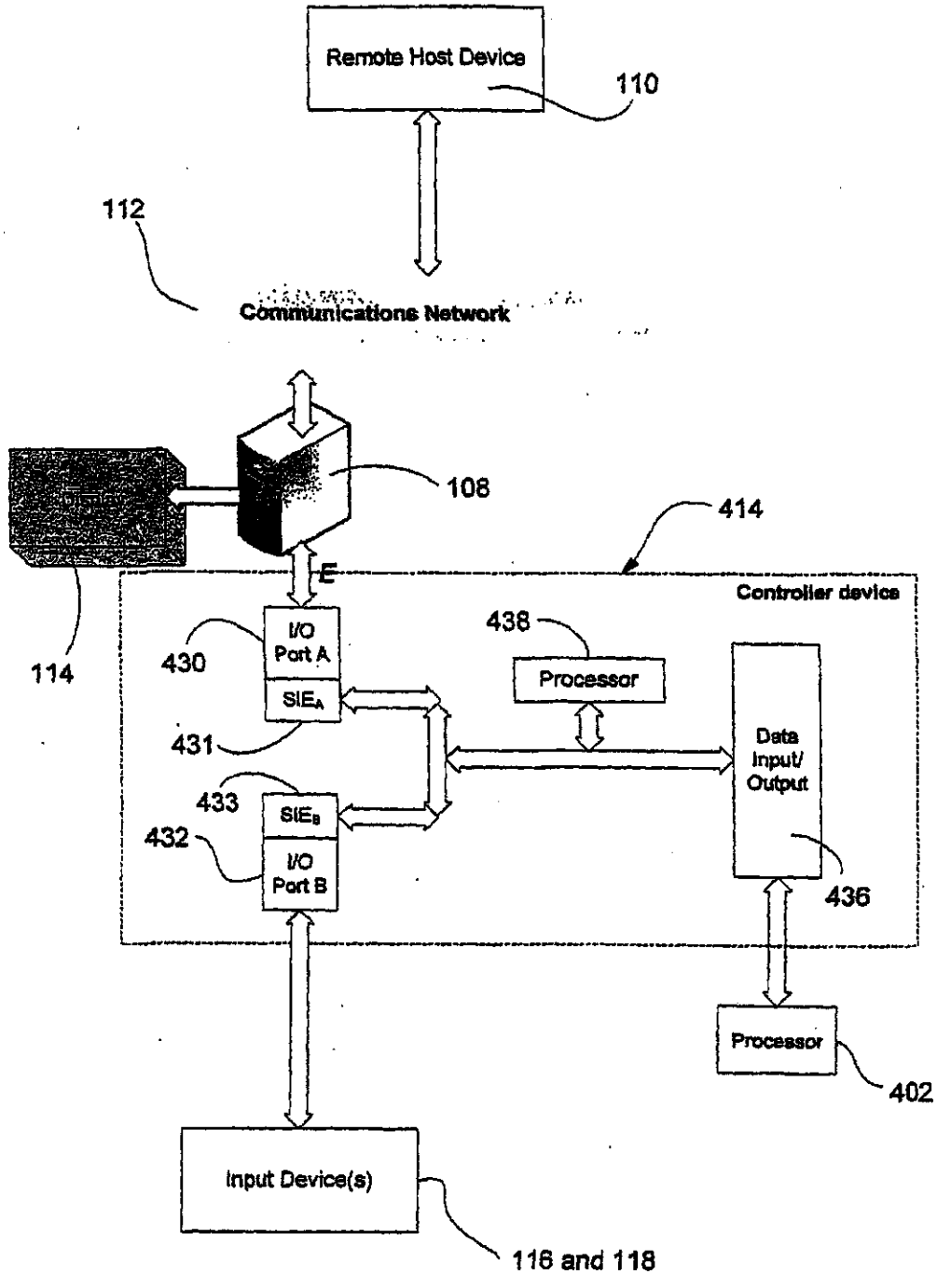

Remote Host Device
110
112
Communications Network
108
414
E
Controller device
I/O Port A
SIE$_A$
430
438
Processor
431
Data Input/ Output
433
SIE$_B$
432
I/O Port B
436
114
Processor
402
Input Device(s)
116 and 118

FIG. 10

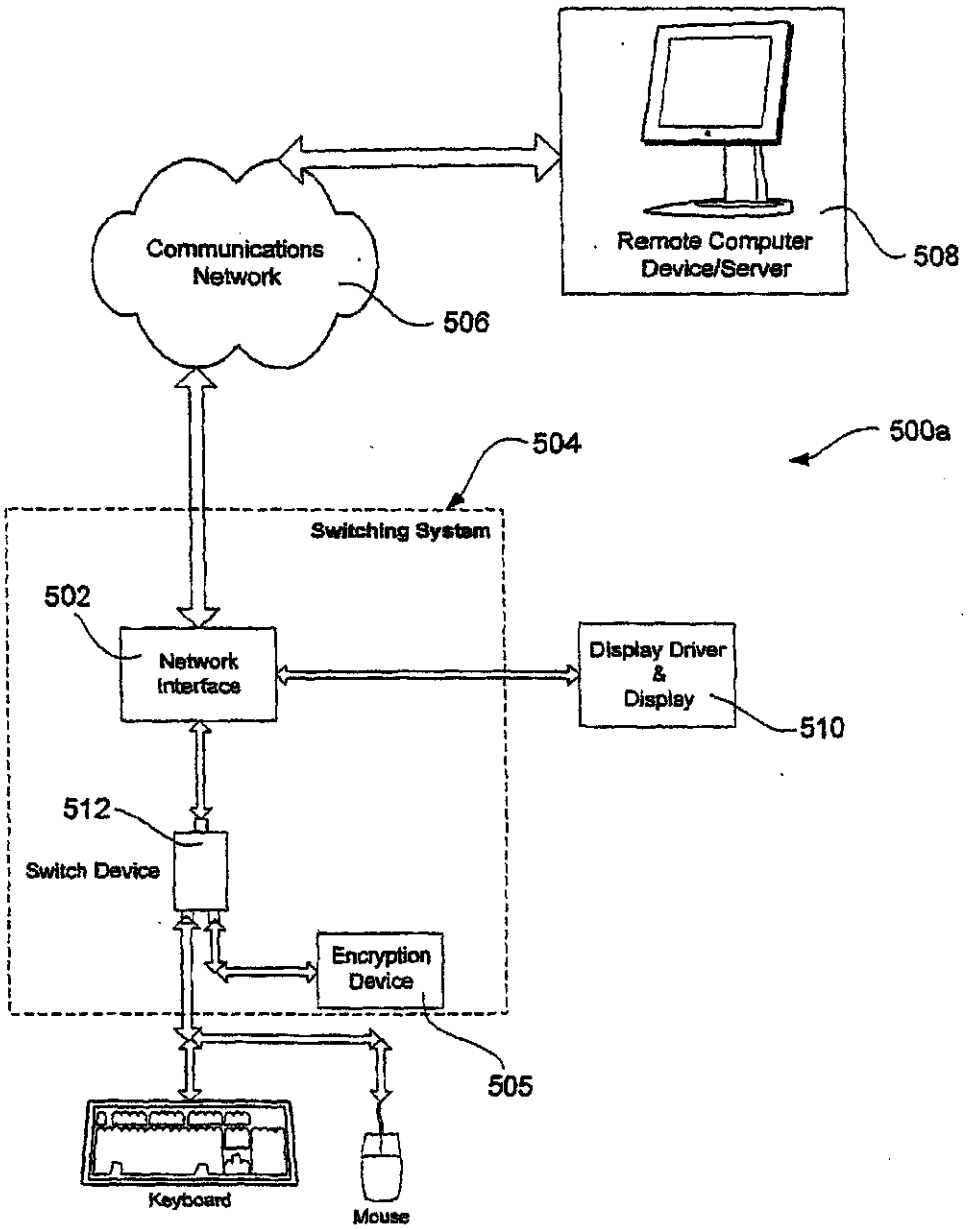

Communications Network
506
Remote Computer Device/Server
508
504
500a
Switching System
502
Network Interface
Display Driver & Display
510
512
Switch Device
Encryption Device
505
Keyboard
Mouse

FIG. 11A

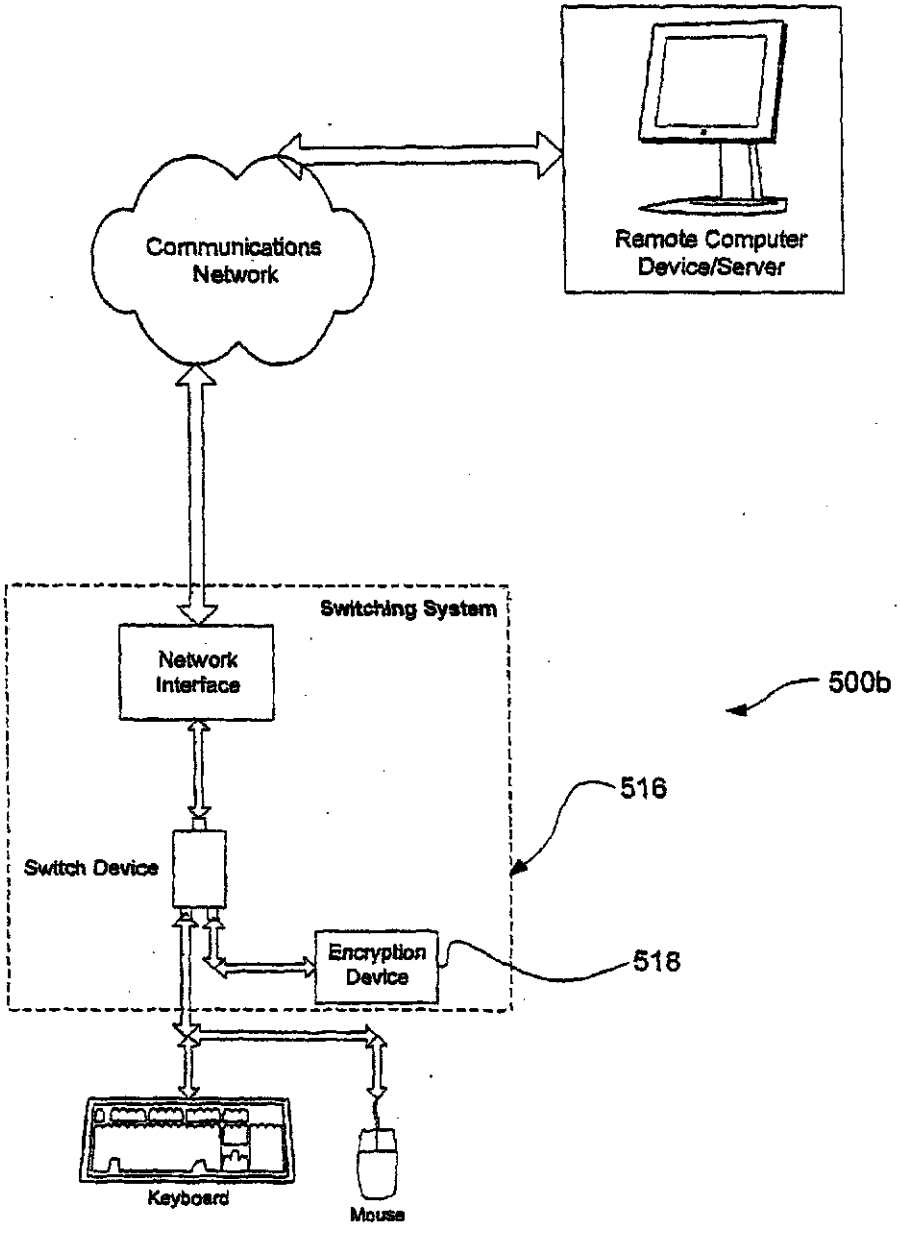

Communications Network
Remote Computer Device/Server
Switching System
Network Interface
500b
516
Switch Device
Encryption Device
518
Keyboard
Mouse

FIG. 11B