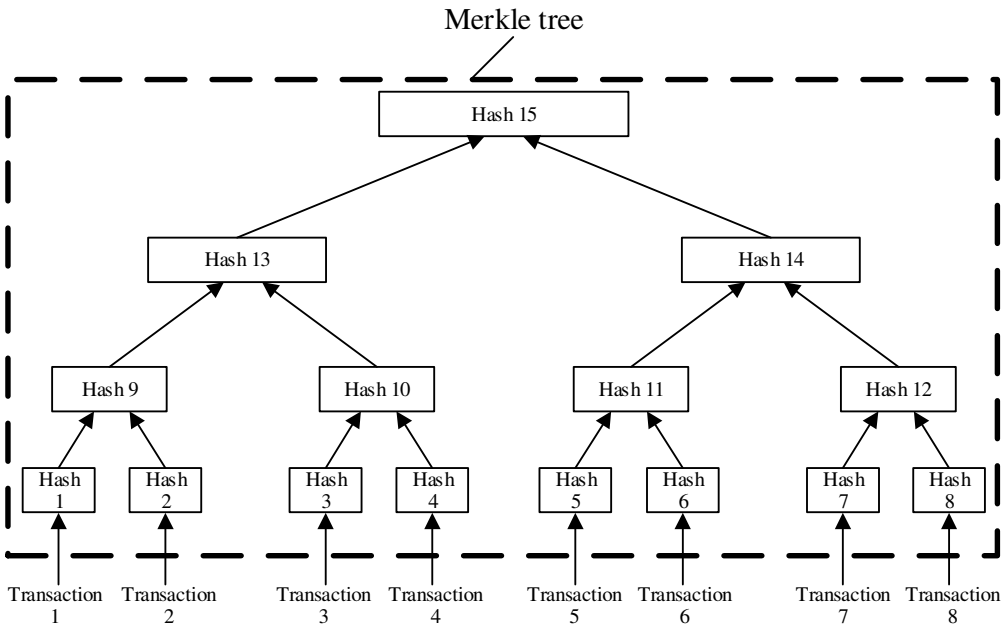
Merkle tree
Hash 15
Hash 13
Hash 14
Hash 9
Hash 10
Hash 11
Hash 12
Hash 1
Hash 2
Hash 3
Hash 4
Hash 5
Hash 6
Hash 7
Hash 8
Transaction 1
Transaction 2
Transaction 3
Transaction 4
Transaction 5
Transaction 6
Transaction 7
Transaction 8

FIG. 1

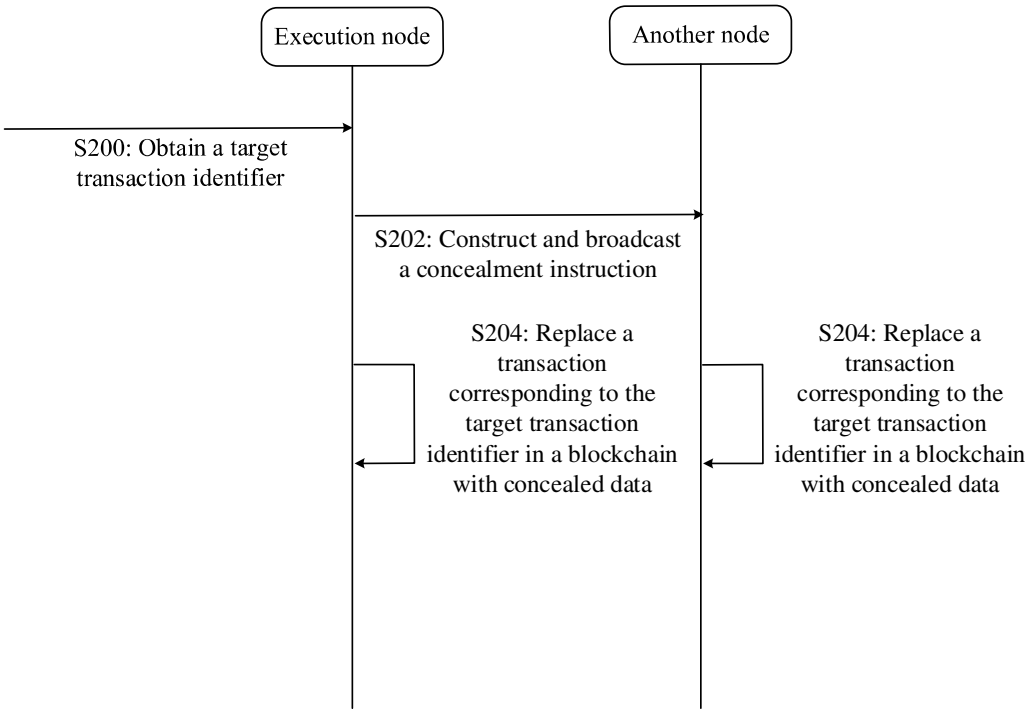
Execution node
Another node
S200: Obtain a target transaction identifier
S202: Construct and broadcast a concealment instruction
S204: Replace a transaction corresponding to the target transaction identifier in a blockchain with concealed data
S204: Replace a transaction corresponding to the target transaction identifier in a blockchain with concealed data

FIG. 2

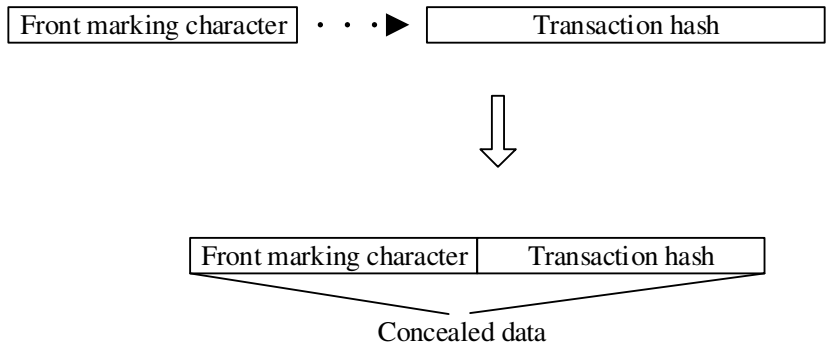
Front marking character
Transaction hash
Front marking character
Transaction hash
Concealed data

FIG. 3

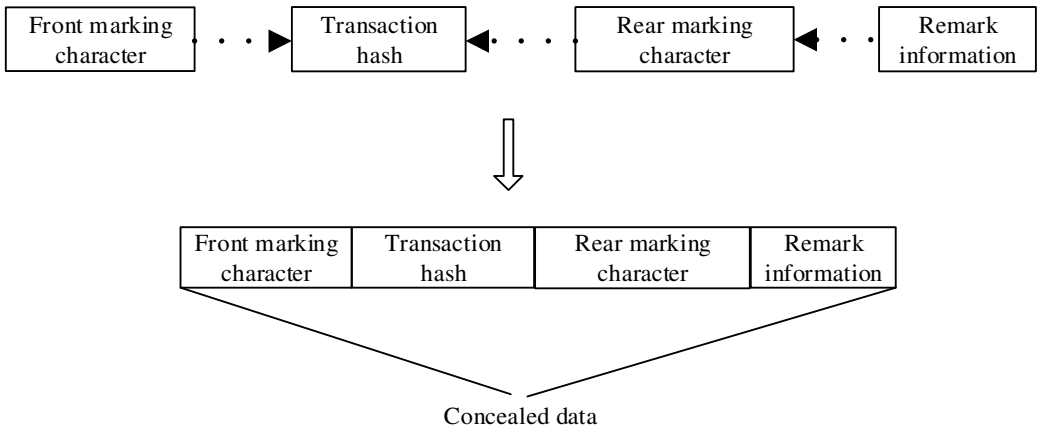
Front marking character
Transaction hash
Rear marking character
Remark information
Front marking character
Transaction hash
Rear marking character
Remark information
Concealed data

FIG. 4

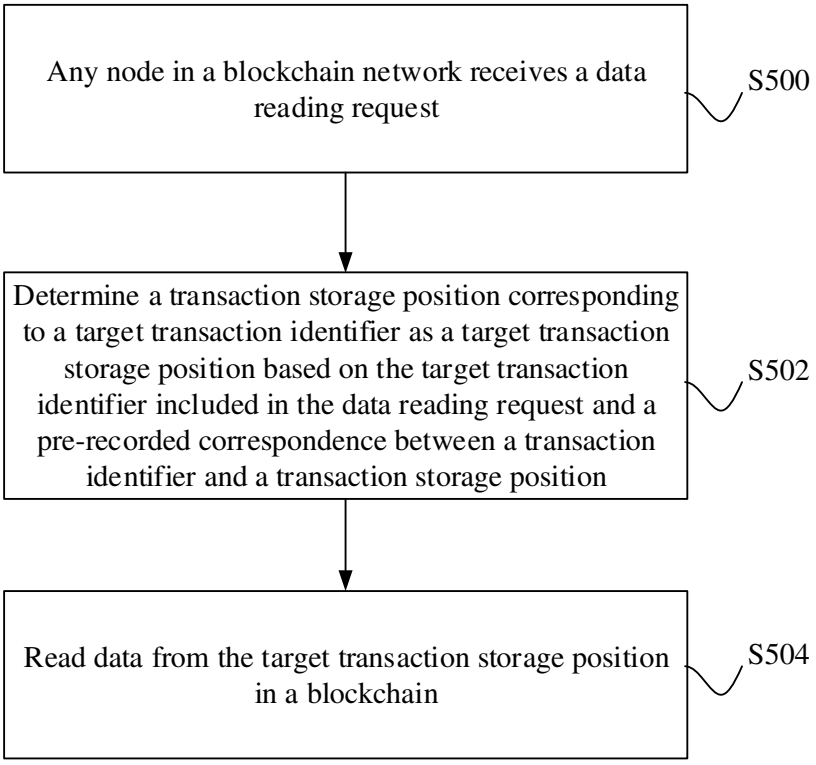
Any node in a blockchain network receives a data reading request
S500
Determine a transaction storage position corresponding to a target transaction identifier as a target transaction storage position based on the target transaction identifier included in the data reading request and a pre-recorded correspondence between a transaction identifier and a transaction storage position
S502
Read data from the target transaction storage position in a blockchain
S504

FIG. 5

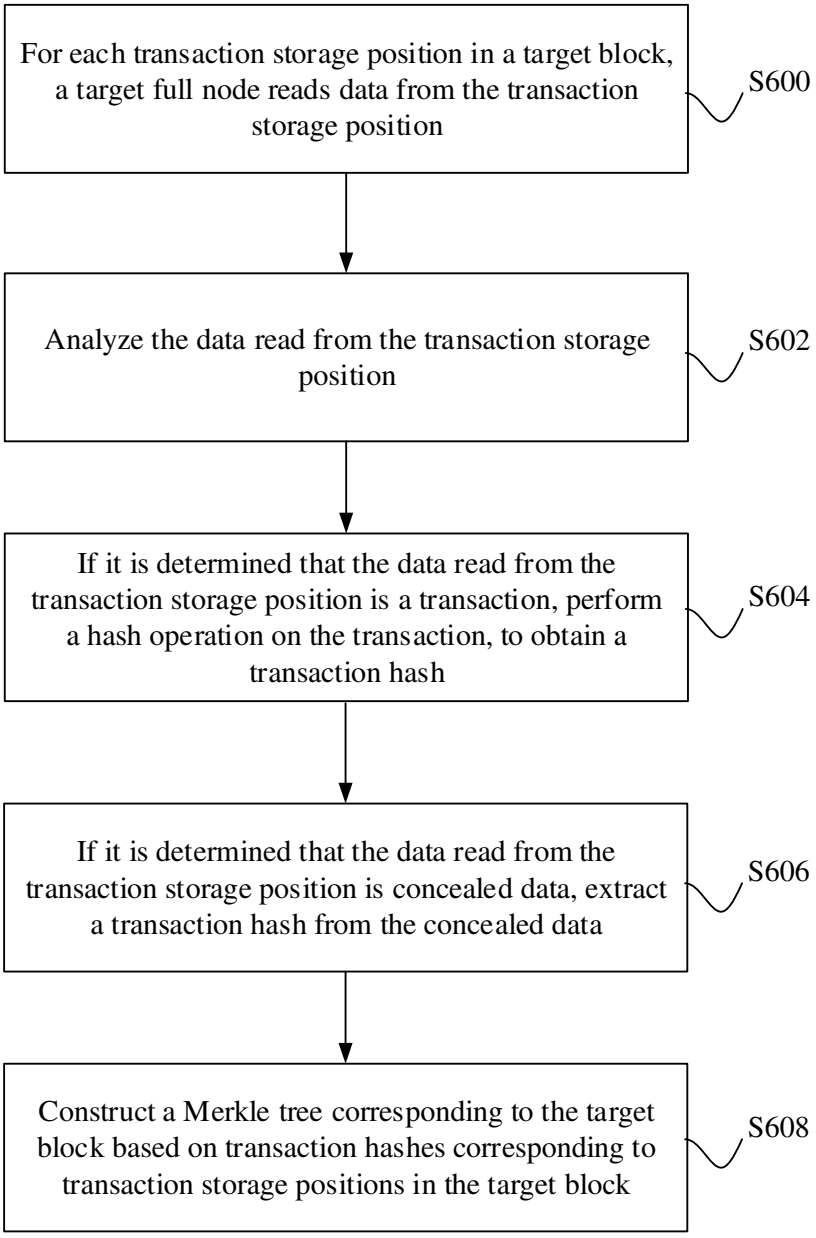
For each transaction storage position in a target block, a target full node reads data from the transaction storage position
S600
Analyze the data read from the transaction storage position
S602
If it is determined that the data read from the transaction storage position is a transaction, perform a hash operation on the transaction, to obtain a transaction hash
S604
If it is determined that the data read from the transaction storage position is concealed data, extract a transaction hash from the concealed data
S606
Construct a Merkle tree corresponding to the target block based on transaction hashes corresponding to transaction storage positions in the target block
S608

FIG. 6

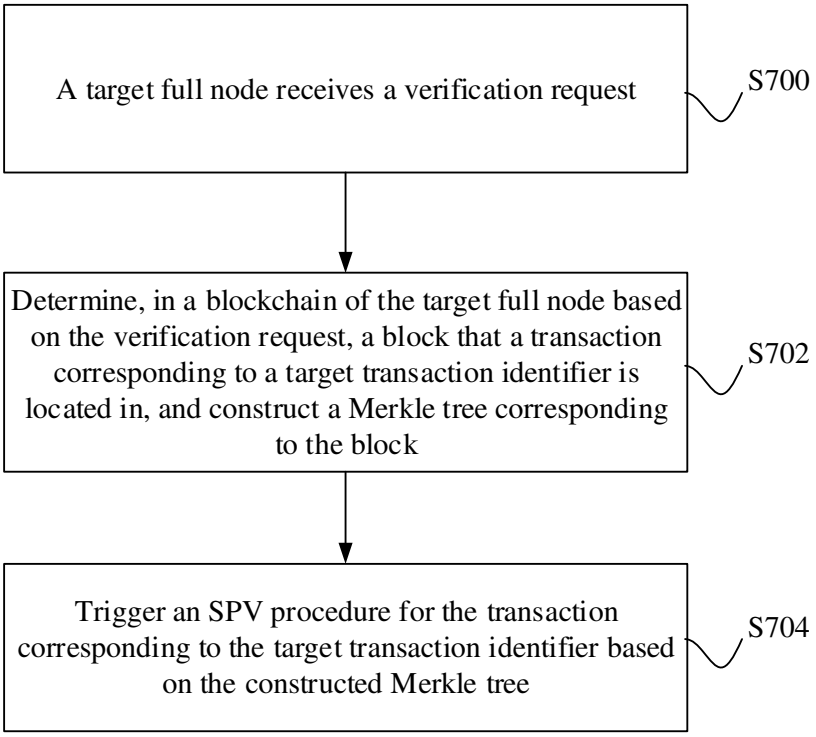

FIG. 7

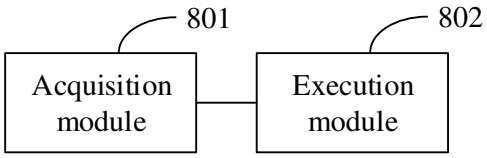

FIG. 8

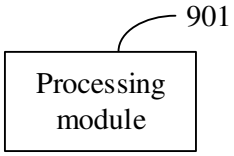

FIG. 9

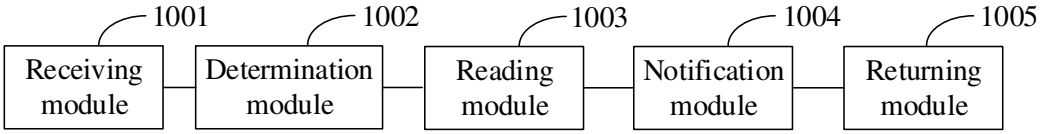

FIG. 10

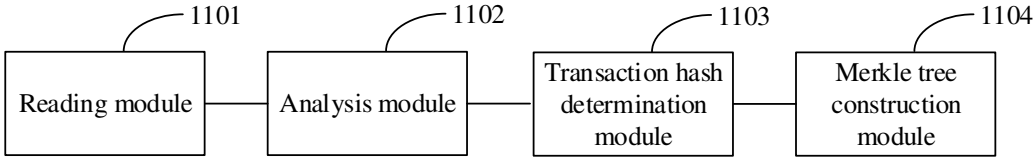

FIG. 11

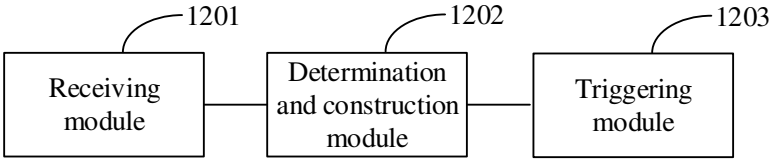

FIG. 12

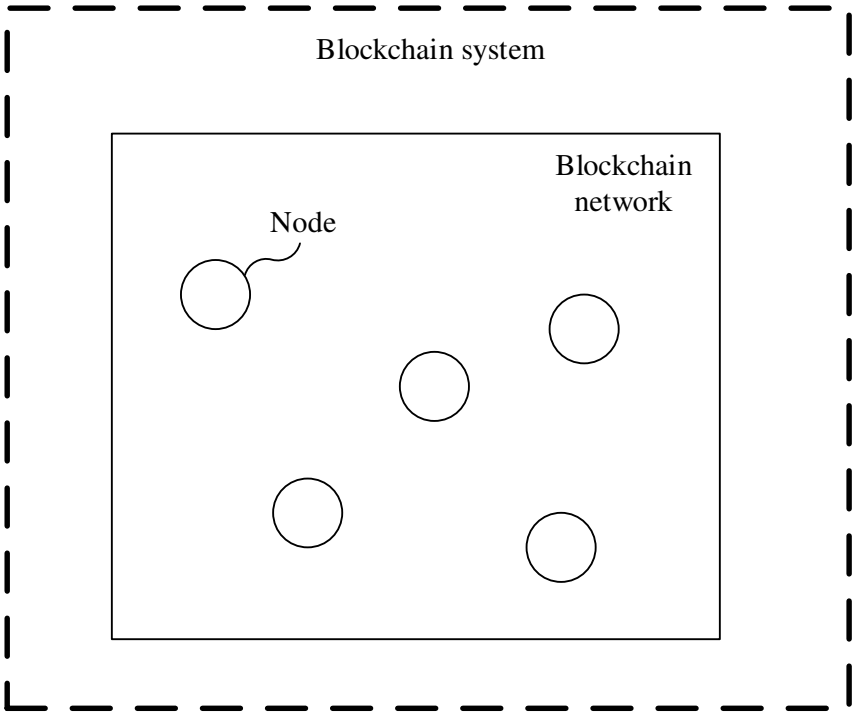

FIG. 13

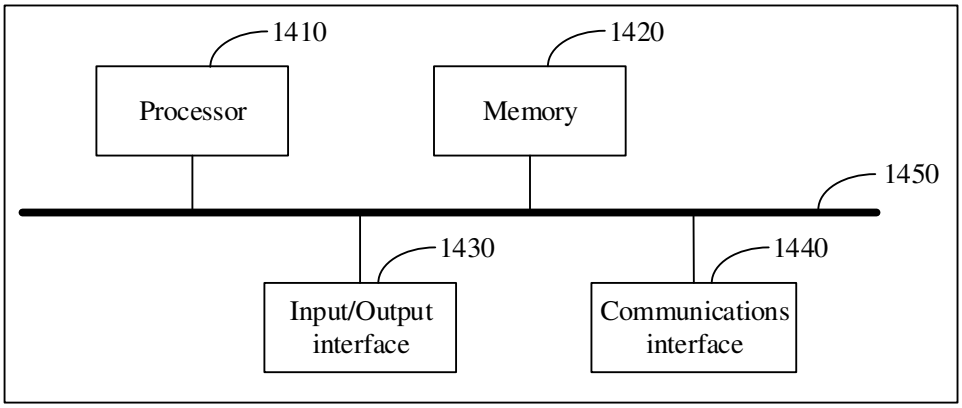
1410
Processor
1420
Memory
1450
1430
Input/Output interface
1440
Communications interface

FIG. 14