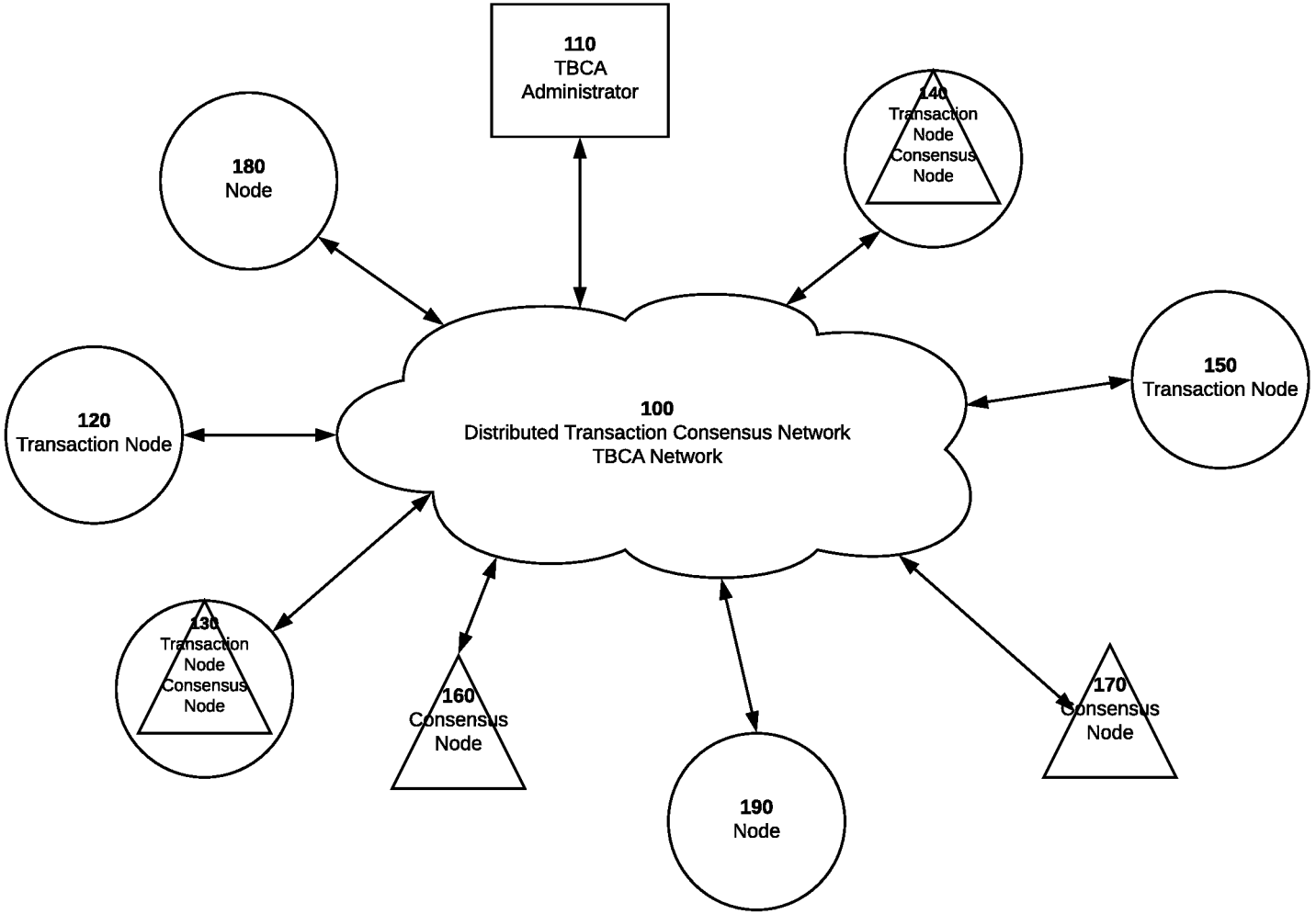

110
TBCA
Administrator
180
Node
140
Transaction
Node
Consensus
Node
120
Transaction Node
100
Distributed Transaction Consensus Network
TBCA Network
150
Transaction Node
130
Transaction
Node
Consensus
Node
160
Consensus
Node
190
Node
170
Consensus
Node

Fig. 1

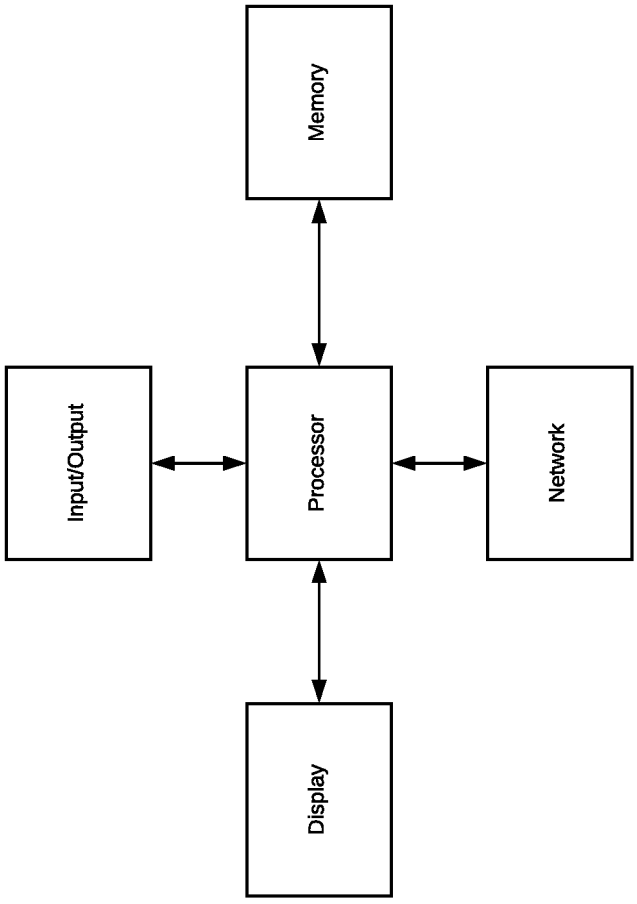


Fig. 2

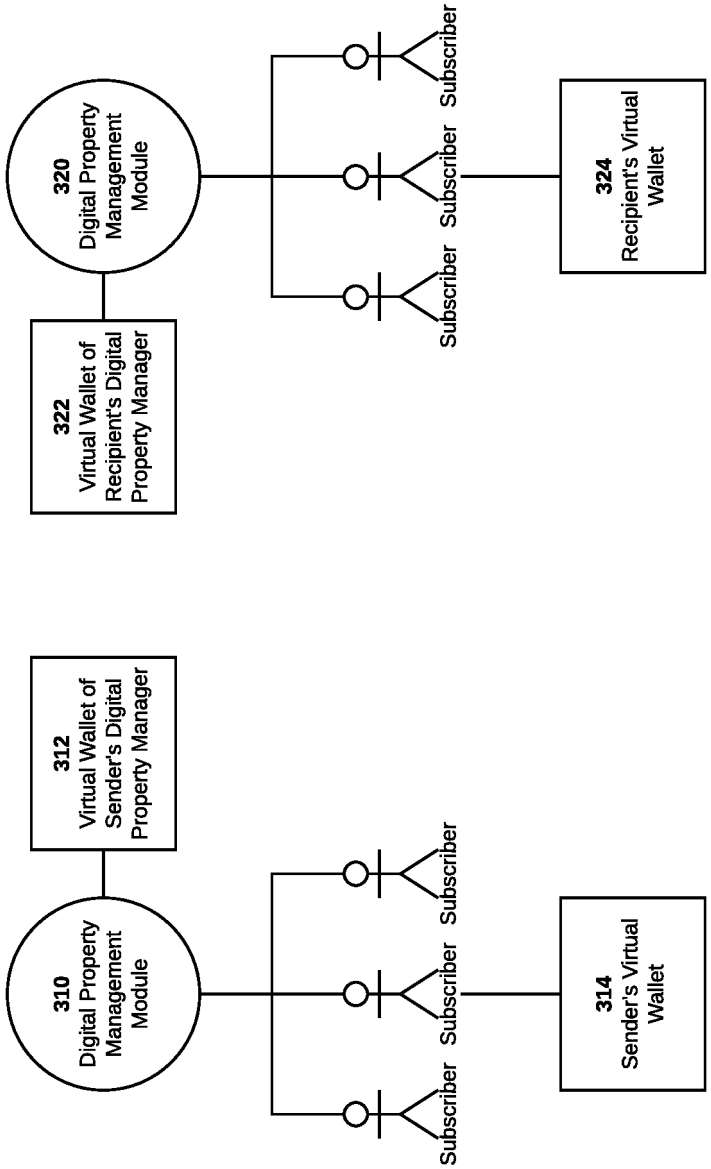

310
Digital Property Management Module
312
Virtual Wallet of Sender's Digital Property Manager
314
Sender's Virtual Wallet
Subscriber
Subscriber
Subscriber
320
Digital Property Management Module
322
Virtual Wallet of Recipient's Digital Property Manager
324
Recipient's Virtual Wallet
Subscriber
Subscriber
Subscriber

Fig. 3

Block Structure		
Description	Data Type	Sample
Magic number	Constant	0xABA79795L
Block size in bytes	4 bytes	1000000
Block Header	80 Bytes	
Number of Transactions	1-9 bytes	3
List of Transactions	Variable	
Number of Signatures	1-9 bytes	1
List of Signatures	Variable	

Fig. 4A

Block Header Structure		
Description	Data Type	Sample
Block Version	4 bytes	3
Previous Block Hash	32 bytes	573fec1ed49368b8218b6b87d4fdf2f 751970cc24b9665d7ac5b78eeb30b598f
Merkel Hash of Block Transactions	32 bytes	95db99531562553788760df483ca05 894c3e6c8be5c2a8f5887949732111bfe2
Timestamp in Seconds	4 bytes	1491598664
Legacy Difficulty	4 bytes	1e0ffff0
Nonce	4 bytes	1

Fig. 4B

Signature		
Description	Data Type	Sample
Signature Length	1-9 bytes	139
Signature	Variable	304502206e21798a42fae0e854281 abd38bacd1aeed3ee3738d9e14466 18c4571d10 90db022100e2ac980643b0b82c0e8 8ffdfec6b64e3e6ba35e7ba5fdd7d 5d6cc8d25c6b241501
Miner Public Key	65 bytes	90db022100e2ac980643b0b82c0e8 8ffdfec6b64e3e6ba35e7ba5fdd7d

Fig. 4C

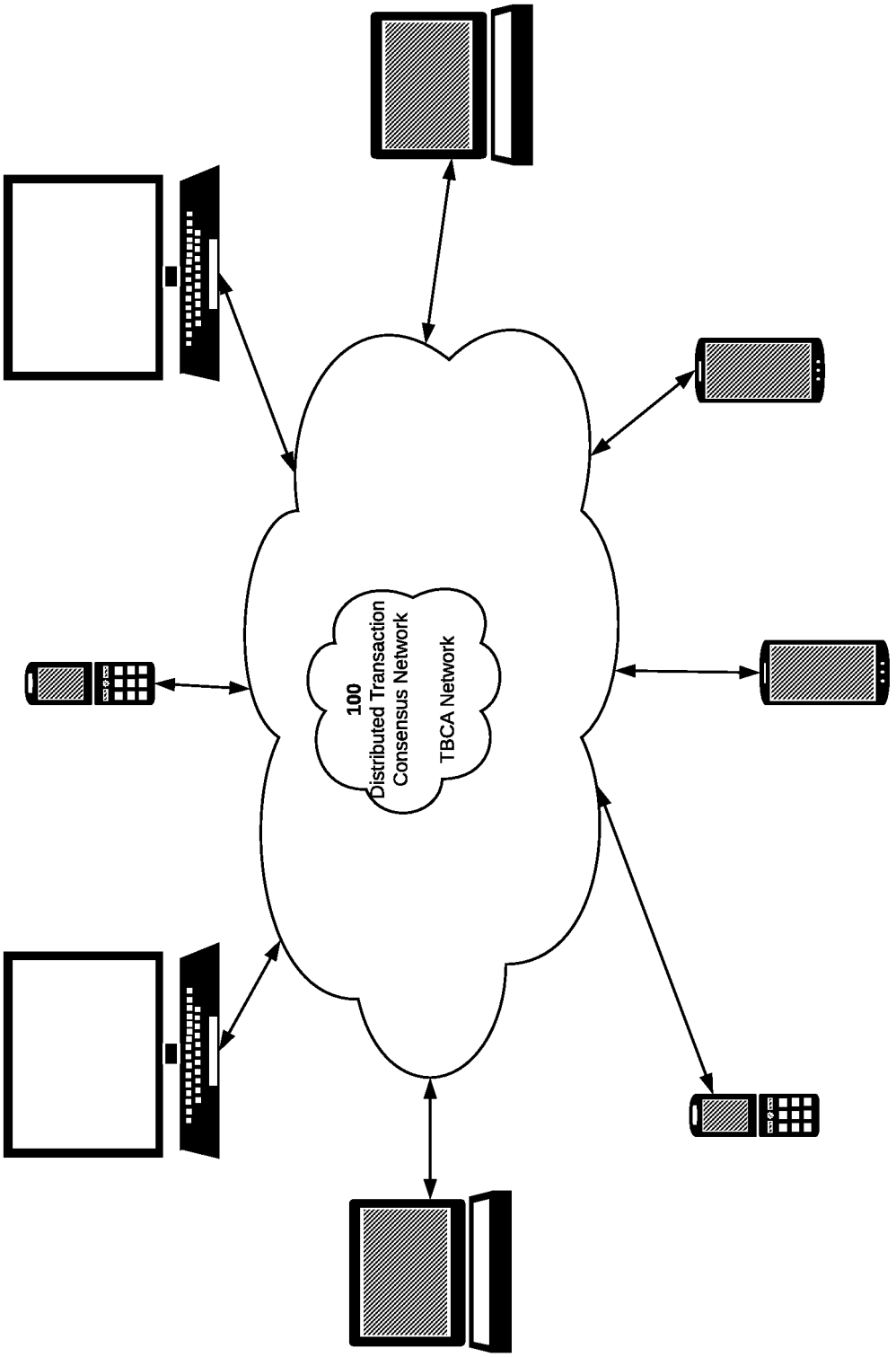

100
Distributed Transaction
Consensus Network
TBCA Network

Fig. 5

Standard Transaction		
4 bytes	Version number	1
1-9 bytes	Number of inputs contained	Positive Integer
Varies	Sequential list of inputs	Transaction Inputs
1-9 bytes	Number of outputs contained	Positive Integer
Varies	Sequential list of outputs	Transaction Outputs
4 bytes	Block height or timestamp when transaction is final	0

FIG. 6A

Transaction Input (Standard Transaction)		
32 bytes	Previous transaction hash	E.g:1979fe5abb7192c637cfa4c14a1e953ec0f02c54de28c8f82fc21245c0cab8ac
4 bytes	Referenced output offset (0-indexed)	Non-negative integer
1-9 bytes	Size of ScriptSig	Positive integer
Varies	ScriptSig (signature and public key to unlock)	E.g:473044220447d5ae4624357f6b1361daac5d3aaeae5e197551fdf067f42aec5c7a5e5 1f2204117b06f77809295dd385da9b96567d3dc568e87d622ee37a758c836bb136e1212 e0ac817fd21a44b43c6468d71a472e198521fcb66e36663b5a817398 6d7609f
4 bytes	Sequence Number	0xFFFFFFFF

FIG. 6B

Transaction Output		
8 bytes	Value of output	Positive Integer
4 bytes	FC of output (mapped to a currency such as JPY.SB)	Integer > 2 (0 and 1 are reserved)
1-9 bytes	Size of ScriptPubKey	Positive integer
Varies	ScriptPubKey (locking script)	OP_DUP OP_HASH160 <Address> OP_EQUALVERIFY OP_CHECKSIG

FIG. 6C

		William's virtual wallet	ATT's virtual wallet	FET's virtual wallet	Steve's virtual wallet
UTXOs before remittance transaction	Spendable UTXOs	4 $USD.ATT 21 $USD.ATT 50 $USD.ATT	28 $USD.ATT 36 $USD.ATT 66 $USD.ATT	17 $USD.FET 48 $USD.FET 123 $USD.FET	100 $USD.FET
UTXOs after sending transaction	Spendable UTXOs	4 $USD.ATT	28 $USD.ATT 36 $USD.ATT 66 $USD.ATT	17 $USD.FET 48 $USD.FET 123 $USD.FET	100 $USD.FET
	UTXOs from pending transaction	11 $USD.ATT	60 $USD.ATT		
UTXOs after inter-manager transaction	Spendable UTXOs	4 $USD.ATT	28 $USD.ATT 36 $USD.ATT	17 $USD.FET 48 $USD.FET 123 $USD.FET	100 $USD.FET
	UTXOs from pending transaction	11 $USD.ATT	60 $USD.ATT 6 $USD.ATT	60 $USD.ATT	
UTXOs after delivery transaction	Spendable UTXOs	4 $USD.ATT	28 $USD.ATT 36 $USD.ATT	123 $USD.FET	100 $USD.FET
	UTXOs from pending transaction	11 $USD.ATT	60 $USD.ATT 6 $USD.ATT	60 $USD.ATT 5 $USD.FET	60 $USD.FET
UTXOs after remittance transaction is committed	Spendable UTXOs	4 $USD.ATT 11 $USD.ATT	6 $USD.ATT 28 $USD.ATT 36 $USD.ATT 60 $USD.ATT	60 $USD.ATT 5 $USD.FET 123 $USD.FET	60 $USD.FET 100 $USD.FET

FIG. 7

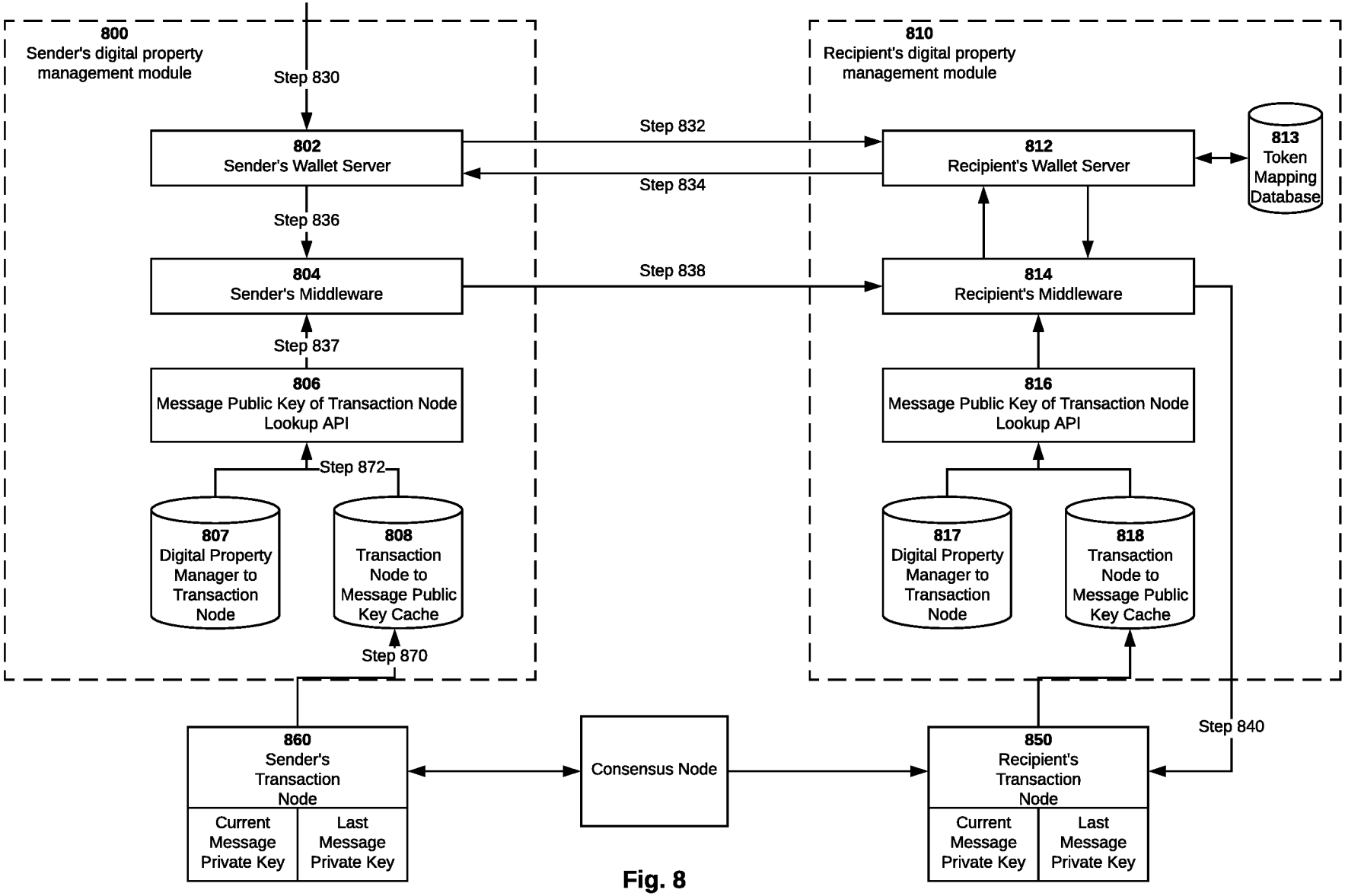

800
Sender's digital property management module
Step 830
802
Sender's Wallet Server
Step 832
Step 834
812
Recipient's Wallet Server
813
Token Mapping Database
810
Recipient's digital property management module
Step 836
804
Sender's Middleware
Step 838
814
Recipient's Middleware
Step 837
806
Message Public Key of Transaction Node Lookup API
816
Message Public Key of Transaction Node Lookup API
Step 872
807
Digital Property Manager to Transaction Node
808
Transaction Node to Message Public Key Cache
817
Digital Property Manager to Transaction Node
818
Transaction Node to Message Public Key Cache
Step 870
Step 840
860
Sender's Transaction Node
Current Message Private Key
Last Message Private Key
Consensus Node
850
Recipient's Transaction Node
Current Message Private Key
Last Message Private Key

Fig. 8

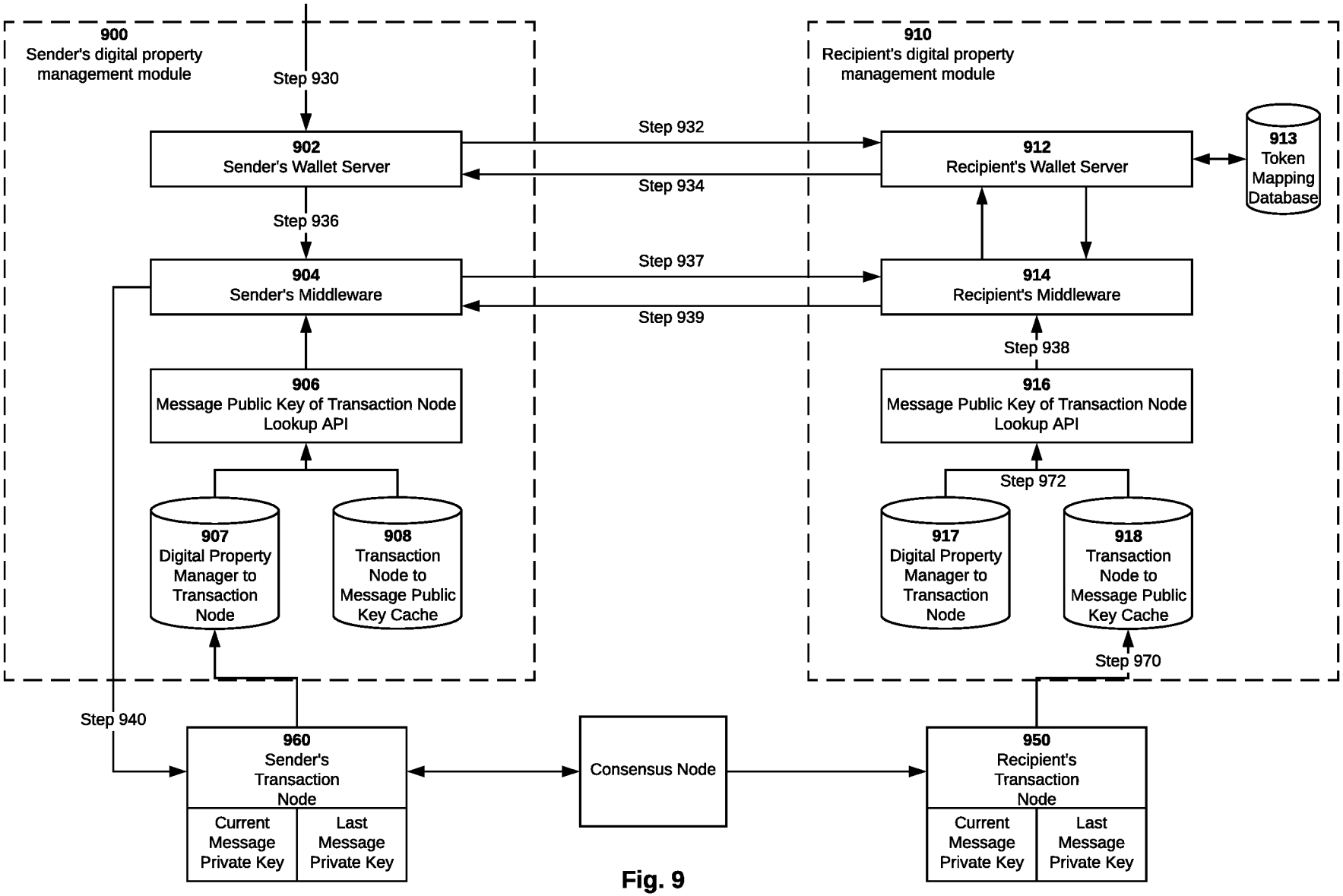

900
Sender's digital property management module
910
Recipient's digital property management module
Step 930
902
Sender's Wallet Server
Step 932
Step 934
912
Recipient's Wallet Server
913
Token Mapping Database
Step 936
904
Sender's Middleware
Step 937
Step 939
914
Recipient's Middleware
Step 938
906
Message Public Key of Transaction Node Lookup API
916
Message Public Key of Transaction Node Lookup API
Step 972
907
Digital Property Manager to Transaction Node
908
Transaction Node to Message Public Key Cache
917
Digital Property Manager to Transaction Node
918
Transaction Node to Message Public Key Cache
Step 970
Step 940
960
Sender's Transaction Node
Current Message Private Key
Last Message Private Key
Consensus Node
950
Recipient's Transaction Node
Current Message Private Key
Last Message Private Key

Fig. 9

Sending Transaction	
Input UTXO	Output UTXO
21 $USD.ATT 50 $USD.ATT	60 $USD.ATT 11 $USD.ATT

Inter-Manager Transaction	
Input UTXO	Output UTXO
28 $USD.ATT 36 $USD.ATT	60 $USD.ATT 4 $USD.ATT

First Delivery Transaction	
Input UTXO	Output UTXO
17 $USD.FET	17 $USD.FET

Second Delivery Transaction	
Input UTXO	Output UTXO
48 $USD.FET	43 $USD.FET 5 $USD.FET

Fig. 10

Sending Transaction	
Input UTXO	Output UTXO
20 $USD.ATT	10 $USD.ATT 6 $USD.ATT 4 $USD.ATT

First Inter-Manager Transaction	
Input UTXO	Output UTXO
10 $USD.ATT	10 $USD.ATT

First Delivery Transaction	
Input UTXO	Output UTXO
10 $USD.FET	10 $USD.FET

Second Inter-Manager Transaction	
Input UTXO	Output UTXO
5 $USD.ATT	5 $USD.ATT

Second Delivery Transaction	
Input UTXO	Output UTXO
10 $USD.FET	6 $USD.FET 4 $USD.FET

Third Inter-Manager Transaction	
Input UTXO	Output UTXO
5 $USD.ATT	1 $USD.ATT 4 $USD.ATT

Fig. 11

Transaction (TX Set)		
Description	Data Type	Sample
Version	4 bytes	1
Number of Inputs	1-9 bytes	1
Inputs	Variable	
Number of Outputs	1-9 bytes	2
Outputs	Variable	
Lock time	4 bytes	0
Transaciton Type	4 bytes	1
Transaction Set	32 bytes	304502206e21798a42fae0e854281abd

Fig. 12