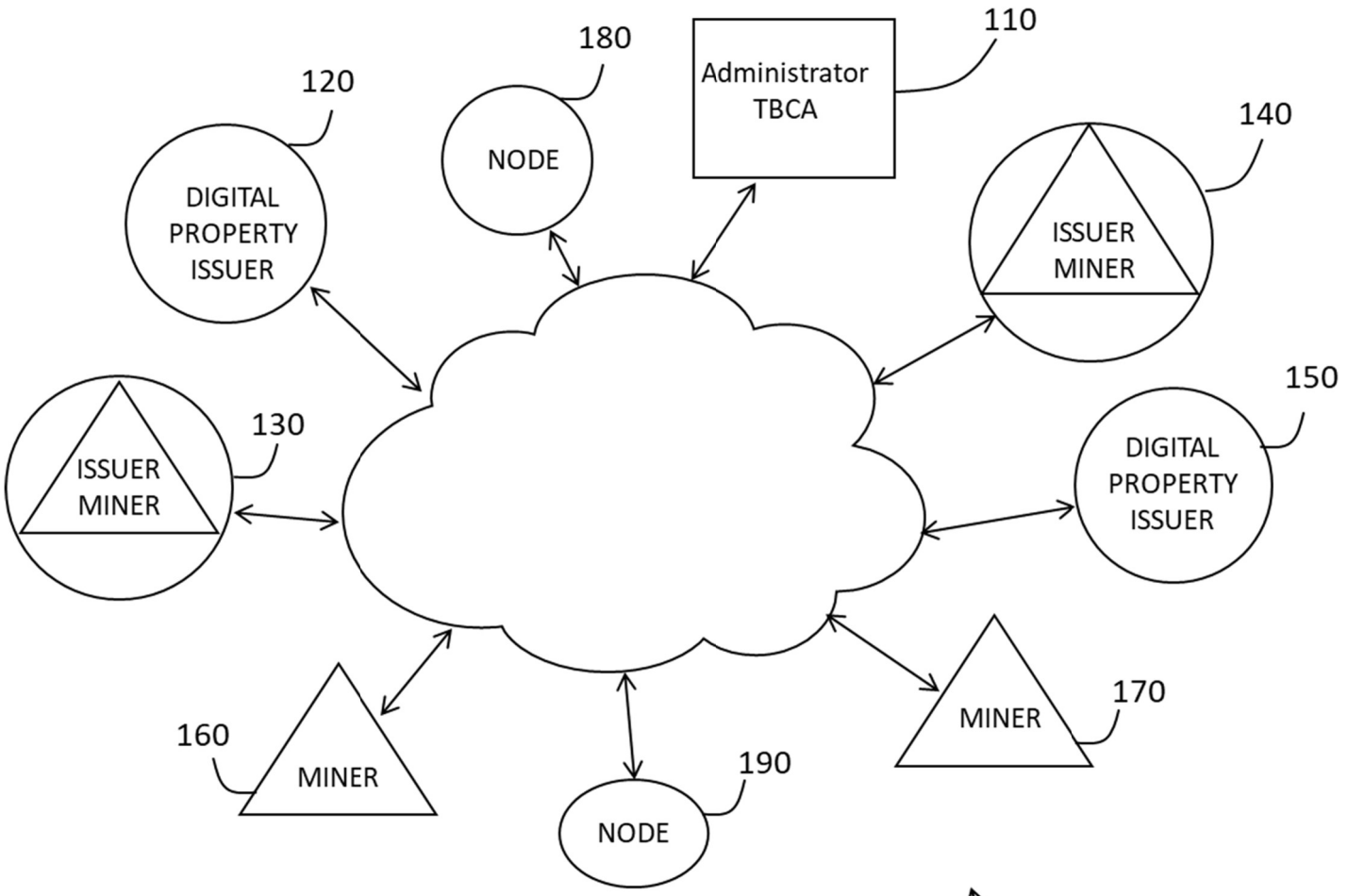

180
110
120
Administrator
TBCA
NODE
140
DIGITAL
PROPERTY
ISSUER
ISSUER
MINER
150
130
ISSUER
MINER
DIGITAL
PROPERTY
ISSUER
160
MINER
MINER
170
190
NODE
100 TBCA Network

FIG. 1

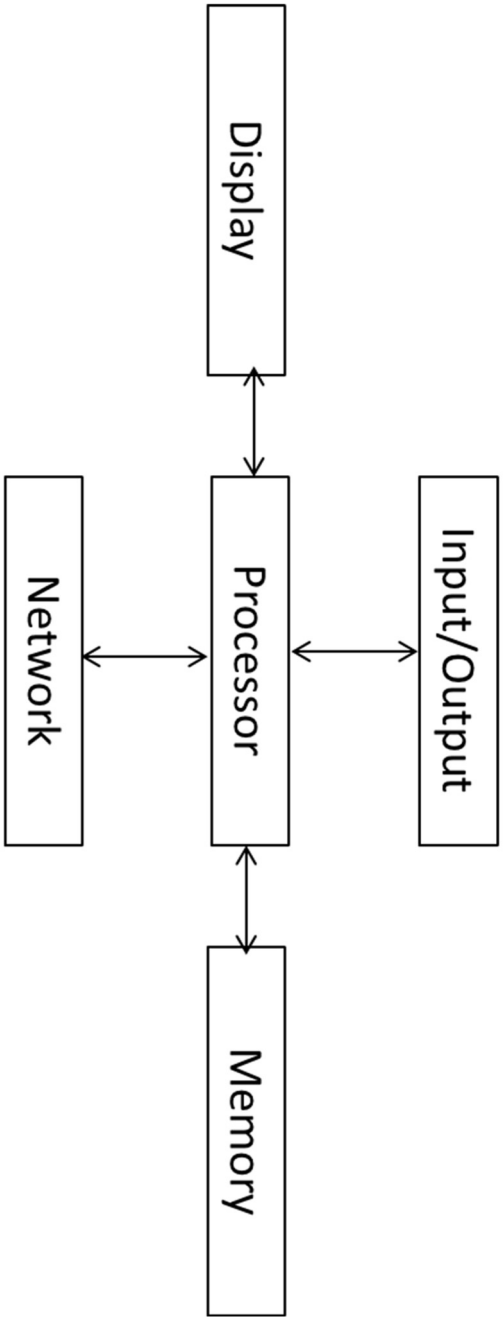



FIG. 2

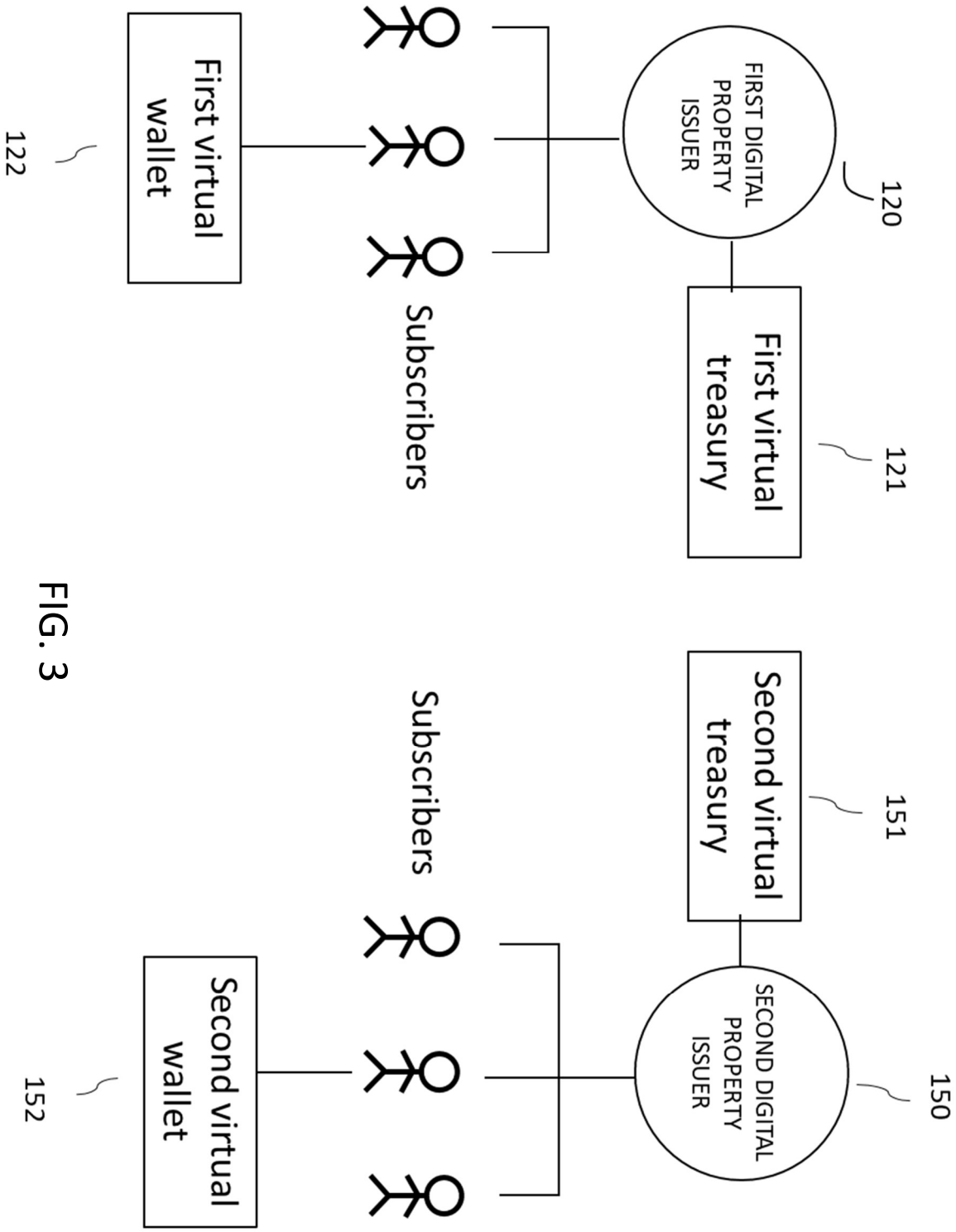

FIRST DIGITAL PROPERTY ISSUER
120
First virtual treasury
121
Subscribers
First virtual wallet
122
SECOND DIGITAL PROPERTY ISSUER
150
Second virtual treasury
151
Subscribers
Second virtual wallet
152

FIG. 3

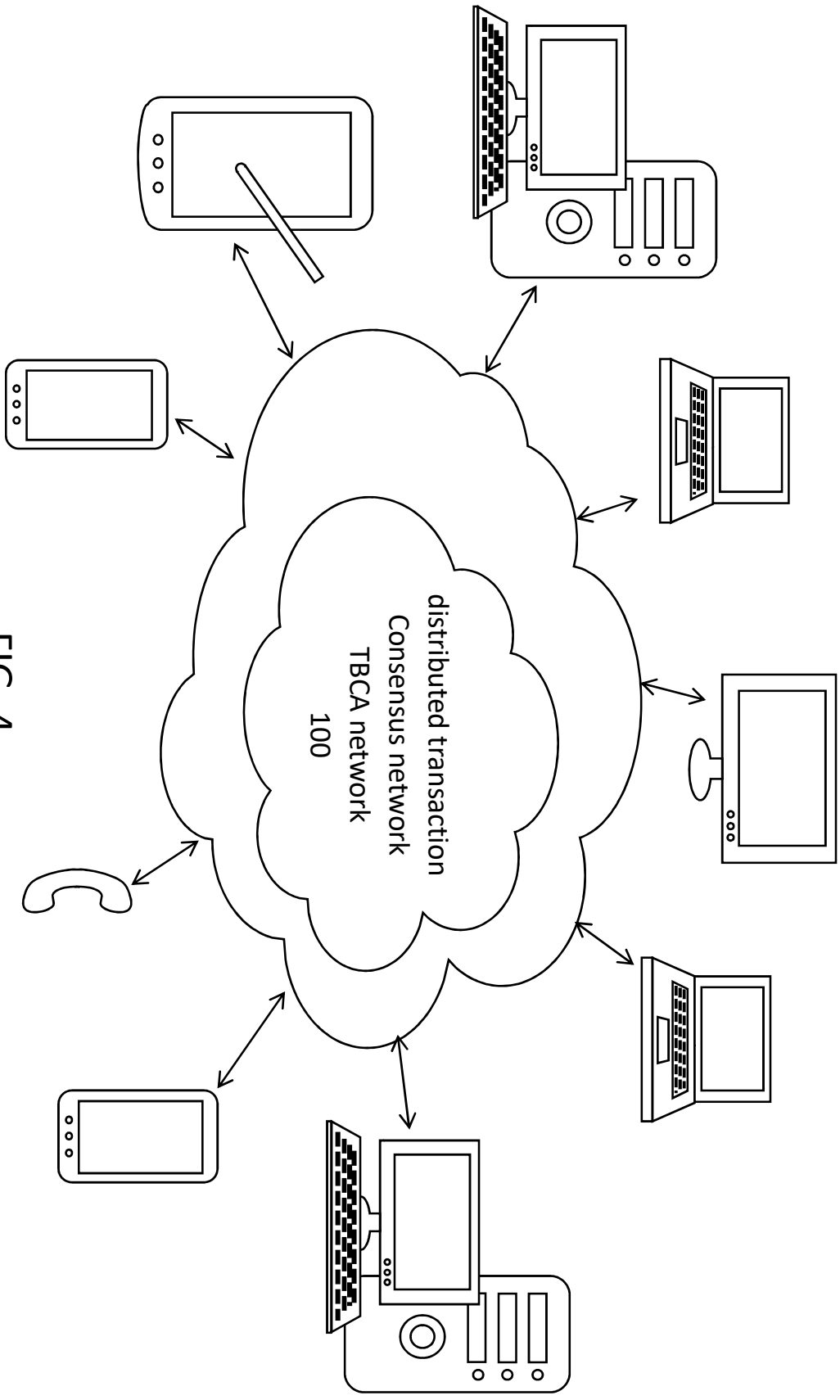

distributed transaction
Consensus network
TBCA network
100

FIG. 4

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before issuance by digital property issuers | 0 | 0 | 0 | 0 |
| After issuance by digital property issuers | 0 | 3,100 $USD.ATT<br>31,000 $JPY. ATT | 4,200 $USD.SBT<br>42,000 $JPY.SBT | 0 |

FIG. 5

| Mint Transaction | | |
|---|---|---|
| 4 bytes | Version number | 1 |
| 1 byte | Number of inputs contained | 1 |
| Varies | Sequential list of inputs | 1 Transaction Input |
| 1 byte | Number of outputs contained | 1 |
| Varies | Sequential list of outputs | 1 Transaction Output |
| 4 bytes | Block height or timestamp when transaction is final | 0 |

FIG. 6A

| Transaction Input (Mint Transaction) | | |
|---|---|---|
| 32 bytes | Blank | 0 |
| 4 bytes | Blank | 0 |
| 1-9 bytes | Size of ScriptSig | Positive integer |
| Varies | ScriptSig (signature and public key to unlock the ScriptPubKey in the output) | E.g:473044220447d5ae4624357f6b1361daac5d3aaeae5e197551fdf067f42aec5c7a5e51f22041 17b06f77809295dd385da9b96567d3dc568e87d622ee37a758c836bb136e1212e0ac817fd21a44 b43c6468d71a472e198521fcb66e36663b5a817398 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.SBT) | 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

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before transaction | 0 | 3,100 $USD.ATT<br>31,000 $JPY. ATT | 4,200 $USD.SBT<br>42,000 $JPY.SBT | 0 |
| After transaction | 100 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |

FIG. 7

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before transaction | 100 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After first step | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,050 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After second step | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After transaction | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>3,950 $USD.SBT<br>40,000 $JPY.SBT | 250 $USD.SBT<br>2,000 $JPY.SBT |

FIG. 8

| 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. 9A

| 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:473044220447d5ae4624357f6b1361daac5d3aaeae5e197551fdf067f42aec5c7a5e51f2204117b06f77809295dd385da9b96567d3dc568e87d622ee37a758c836bb136e1212e0ac817fd21a44b43c6468d71a472e198521fcb66e36663b5a817398 6d7609f |
| 4 bytes | Sequence Number | 0xFFFFFFFF |

FIG. 9B

| 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. 9C

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before transaction | 100 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After first step | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,050 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After second step | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After transaction | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>4,000 $USD.SBT<br>34,750 $JPY.SBT | 200 $USD.SBT<br>7,250 $JPY.SBT |

FIG. 10

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before transaction | 100 $USD.ATT<br>10,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After first step | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,050 $USD.ATT<br>30,000 $JPY. ATT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After second step | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,050 $USD.ATT<br>24,750 $JPY. ATT | 5,250 $JPY.ATT<br>4,000 $USD.SBT<br>40,000 $JPY.SBT | 200 $USD.SBT<br>2,000 $JPY.SBT |
| After transaction | 50 $USD.ATT<br>10,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 5,250 $USD.ATT<br>3,500 $USD.SBT<br>34,750 $JPY.SBT | 250 $USD.SBT<br>7,250 $JPY.SBT |

FIG. 11

| | Mary's virtual wallet | ATT's virtual treasury | SBT's virtual treasury | Joe's virtual wallet |
|---|---|---|---|---|
| Before transaction | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>3,950 $USD.SBT<br>40,000 $JPY.SBT | 250 $USD.SBT<br>2,000 $JPY.SBT |
| After first step | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,000 $USD.ATT<br>30,000 $JPY. ATT | 50 $USD.ATT<br>4,025 $USD.SBT<br>40,000 $JPY.SBT | 175 $USD.SBT<br>2,000 $JPY.SBT |
| After second step | 50 $USD.ATT<br>1,000 $JPY.ATT | 3,050 $USD.ATT<br>30,000 $JPY. ATT<br>25 $USD.SBT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 175 $USD.SBT<br>2,000 $JPY.SBT |
| After transaction | 125 $USD.ATT<br>1,000 $JPY.ATT | 2,975 $USD.ATT<br>30,000 $JPY. ATT<br>25 $USD.SBT | 4,000 $USD.SBT<br>40,000 $JPY.SBT | 175 $USD.SBT<br>2,000 $JPY.SBT |

FIG. 12

| Digital Currencies | Digital Property Issuers | | |
|---|---|---|---|
| | SBT | ATT | NTT |
| $USD.SBT<br>Digital US Dollars issued by SBT | Total amount issued | 500,000 | 12,000 |
| $JPY.SBT<br>Digital Japanese Yens issued by SBT | Total amount issued | 1,500,000 | 800,000 |
| $CAD.SBT<br>Digital Canadian Dollars issued by SBT | Total amount issued | 20,000 | 4,000 |
| $USD.ATT<br>Digital US Dollars issued by ATT | 100,000 | Total amount issued | 150,000 |
| $JPY.ATT<br>Digital Japanese Yens issued by ATT | 500,000 | Total amount issued | 600,000 |
| $CAD.ATT<br>Digital Canadian Dollars issued by ATT | 50,000 | Total amount issued | 60,000 |
| $USD.NTT<br>Digital US Dollars issued by NTT | 10,000 | 500,000 | Total amount issued |
| $JPY.NTT<br>Digital Japanese Yens issued by NTT | 1,000,000 | 1,200,000 | Total amount issued |
| $CAD.NTT<br>Digital Canadian Dollars issued by NTT | 5,000 | 20,000 | Total amount issued |

FIG. 13

| | | ATT's virtual treasury | SBT's virtual treasury | Transaction Status |
|---|---|---|---|---|
| Transaction No. 1<br>ATT needs to pay SBT<br>4,000 $USD | Before | 1,000,000 $USD.ATT<br>3,000 $USD.SBT<br>100,000 $JPY.ATT<br>1,450,000 $JPY.SBT | 98,000 $USD.ATT<br>500,000 $USD.SBT<br>20,000 $JPY.ATT<br>5,000,000 $JPY.SBT | Completed and recorded |
| | After | 999,000 $USD.ATT<br>0 $USD.SBT<br>100,000 $JPY.ATT<br>1,450,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>20,000 $JPY.ATT<br>5,000,000 $JPY.SBT | |
| Transaction No. 2<br>ATT needs to pay SBT<br>2,000 $USD | Before | 999,000 $USD.ATT<br>0 $USD.SBT<br>100,000 $JPY.ATT<br>1,450,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>20,000 $JPY.ATT<br>5,000,000 $JPY.SBT | Denied because the transaction will cause SBT to hold more than 100,000 $USD.ATT which exceeds the exposure limit. |
| | After | 999,000 $USD.ATT<br>0 $USD.SBT<br>100,000 $JPY.ATT<br>1,450,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>20,000 $JPY.ATT<br>5,000,000 $JPY.SBT | |
| Transaction No. 3<br>SBT needs to pay ATT 30,000 $JPY | Before | 999,000 $USD.ATT<br>0 $USD.SBT<br>100,000 $JPY.ATT<br>1,450,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>20,000 $JPY.ATT<br>5,000,000 $JPY.SBT | Completed and recorded |
| | After | 999,000 $USD.ATT<br>0 $USD.SBT<br>120,000 $JPY.ATT<br>1,460,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>0 $JPY.ATT<br>4,990,000 $JPY.SBT | |
| Transaction No. 4<br>SBT needs to pay ATT 50,000 $JPY | Before | 999,000 $USD.ATT<br>0 $USD.SBT<br>120,000 $JPY.ATT<br>1,460,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>0 $JPY.ATT<br>4,990,000 $JPY.SBT | Denied because the transaction will cause ATT to hold more than 1,500,000 $JPY.SBT which exceeds the exposure limit. |
| | After | 999,000 $USD.ATT<br>0 $USD.SBT<br>120,000 $JPY.ATT<br>1,460,000 $JPY.SBT | 99,000 $USD.ATT<br>503,000 $USD.SBT<br>0 $JPY.ATT<br>4,990,000 $JPY.SBT | |

FIG. 14

| Digital Currencies | Digital Property Issuers | | |
|---|---|---|---|
| | SBT | ATT | NTT |
| $USD.SBT<br>Digital US Dollars issued by SBT | Total amount issued | 500,000 | 12,000 |
| $JPY.SBT<br>Digital Japanese Yens issued by SBT | Total amount issued | 1,500,000 | 800,000 |
| $CAD.SBT<br>Digital Canadian Dollars issued by SBT | Total amount issued | 20,000 | 4,000 |
| $USD.ATT<br>Digital US Dollars issued by ATT | 0 | 0 | 0 |
| $JPY.ATT<br>Digital Japanese Yens issued by ATT | 500,000 | Total amount issued | 600,000 |
| $CAD.ATT<br>Digital Canadian Dollars issued by ATT | 50,000 | Total amount issued | 60,000 |
| $USD.NTT<br>Digital US Dollars issued by NTT | 10,000 | 500,000 | Total amount issued |
| $JPY.NTT<br>Digital Japanese Yens issued by NTT | 1,000,000 | 1,200,000 | Total amount issued |
| $CAD.NTT<br>Digital Canadian Dollars issued by NTT | 5,000 | 20,000 | Total amount issued |

FIG. 15