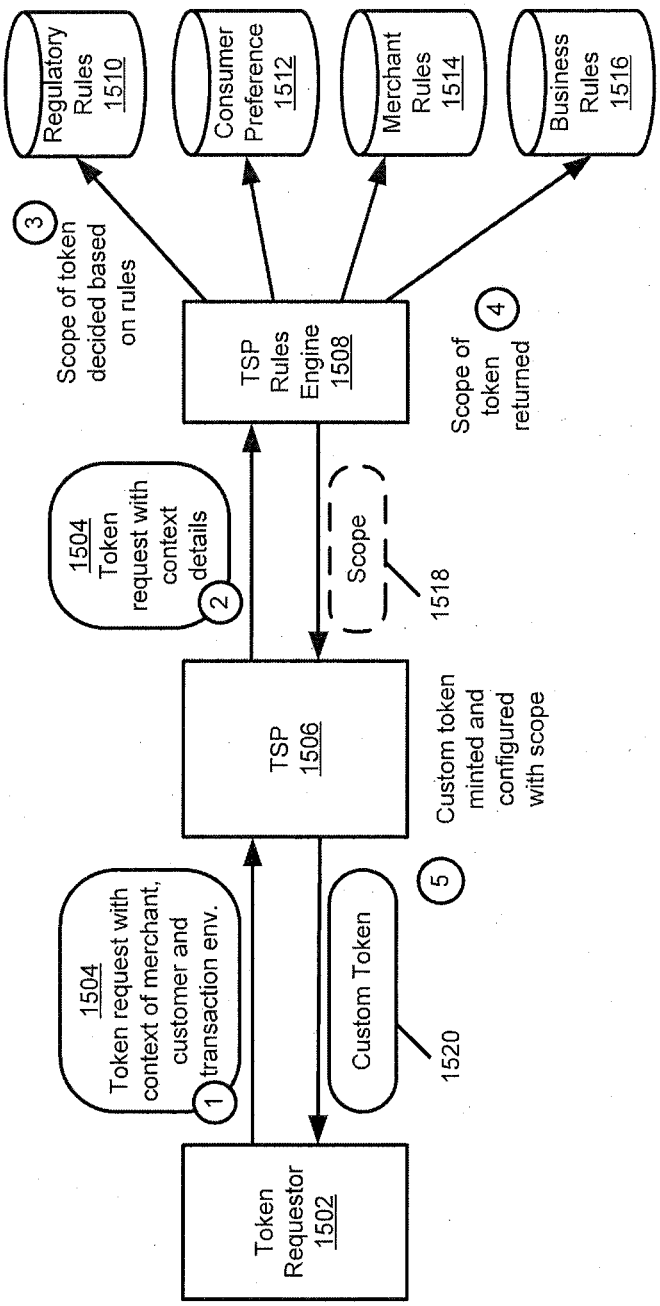

Regulatory Rules 1510
Consumer Preference 1512
Merchant Rules 1514
Business Rules 1516
3
Scope of token decided based on rules
TSP Rules Engine 1508
4
Scope of token returned
1504 Token request with context details
2
Scope
1518
TSP 1506
Custom token minted and configured with scope
1504 Token request with context of merchant, customer and transaction env.
1
5
Custom Token
1520
Token Requestor 1502

Fig. 1

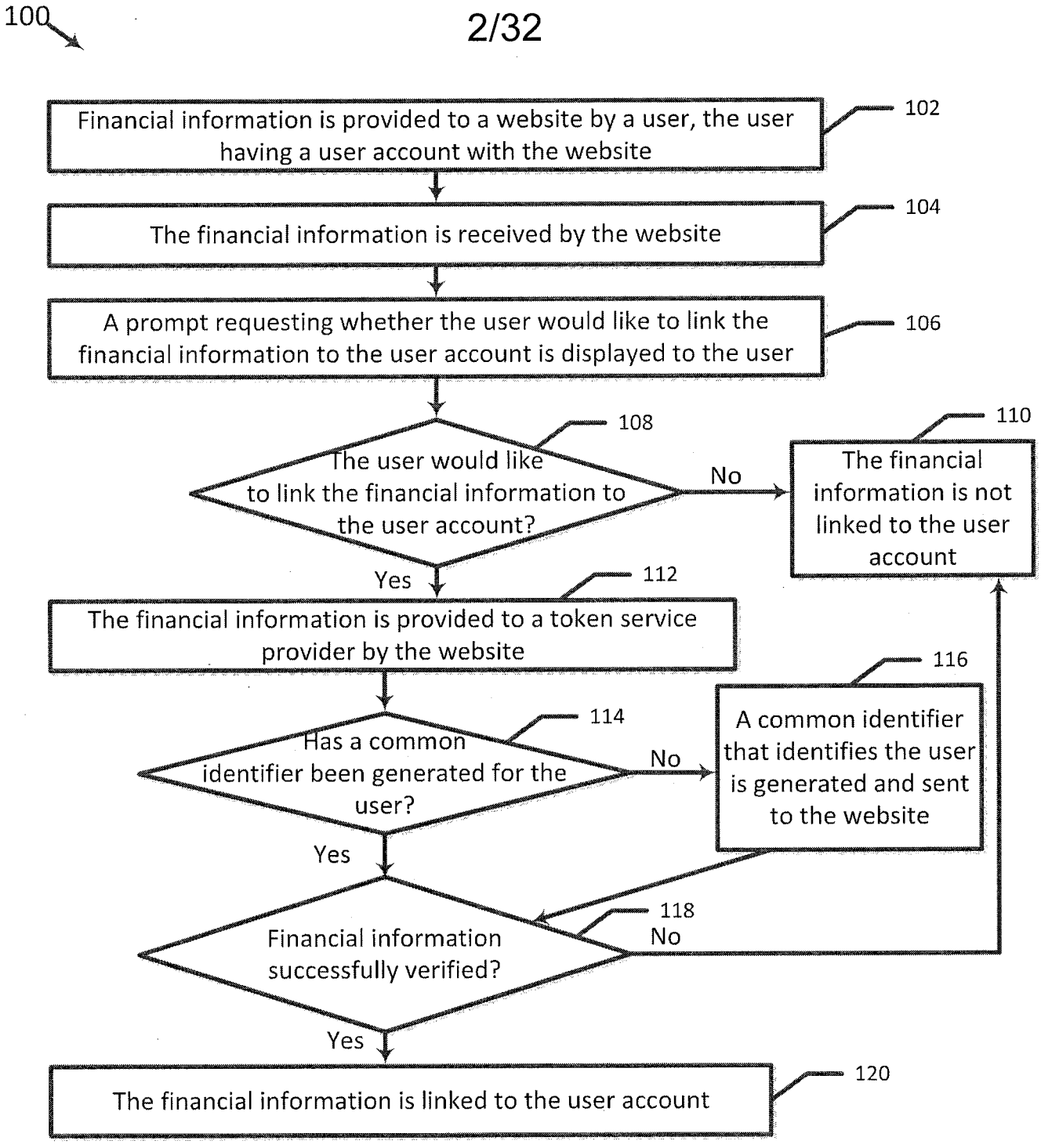

100
Financial information is provided to a website by a user, the user having a user account with the website
102
The financial information is received by the website
104
A prompt requesting whether the user would like to link the financial information to the user account is displayed to the user
106
The user would like to link the financial information to the user account?
108
No
The financial information is not linked to the user account
110
Yes
The financial information is provided to a token service provider by the website
112
Has a common identifier been generated for the user?
114
No
A common identifier that identifies the user is generated and sent to the website
116
Yes
Financial information successfully verified?
118
No
Yes
The financial information is linked to the user account
120

Fig. 2


'Buy' button is surfaced in the News Feed section of mobile app alongside the advertisement .
User is given the option to add PayPal or CC/DC or Bank Account as a funding source to buy.
On click 'PayPal' button , PayPal login in-context page is displayed on the page
User is shown a one time billing agreement to allow direct payments on without leaving the page
Website
If billing agreement and account linking was successful , user is shown success message .
user is shown the advertisement again and clicking on 'Buy' allow seamless buying of the item

Fig. 3

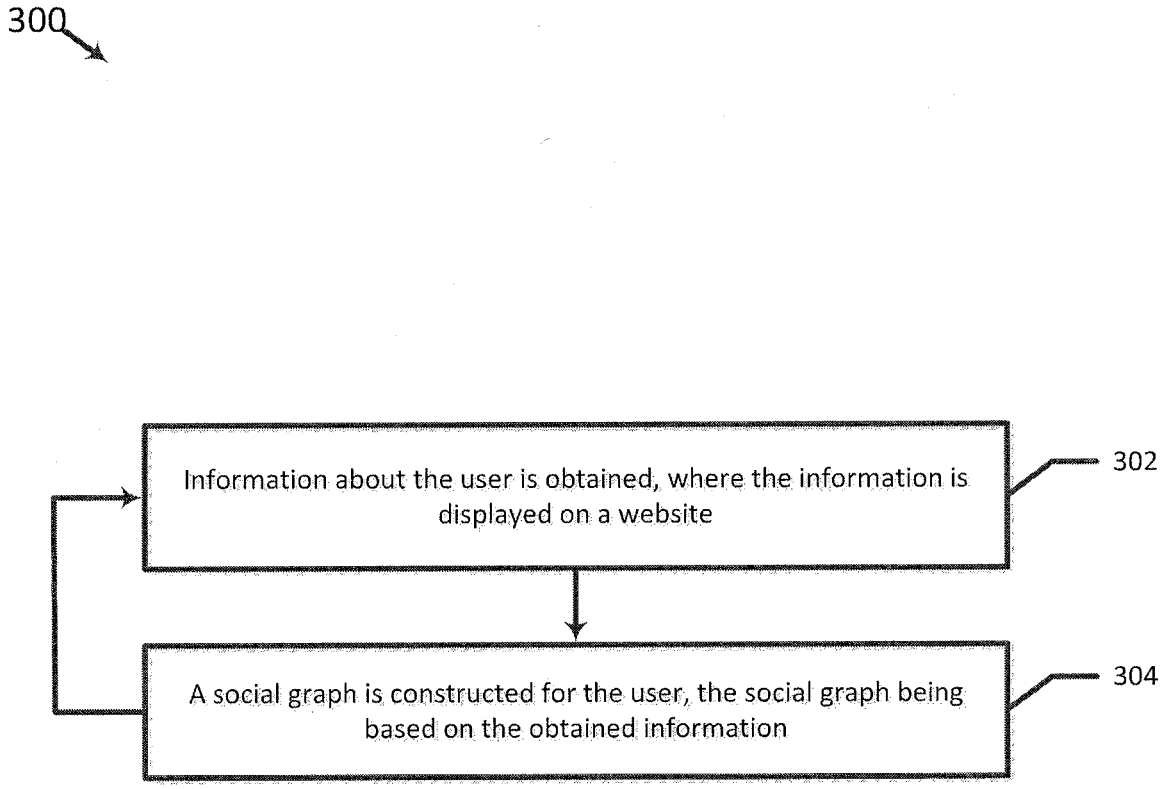

300
Information about the user is obtained, where the information is displayed on a website
302
A social graph is constructed for the user, the social graph being based on the obtained information
304

Fig. 4

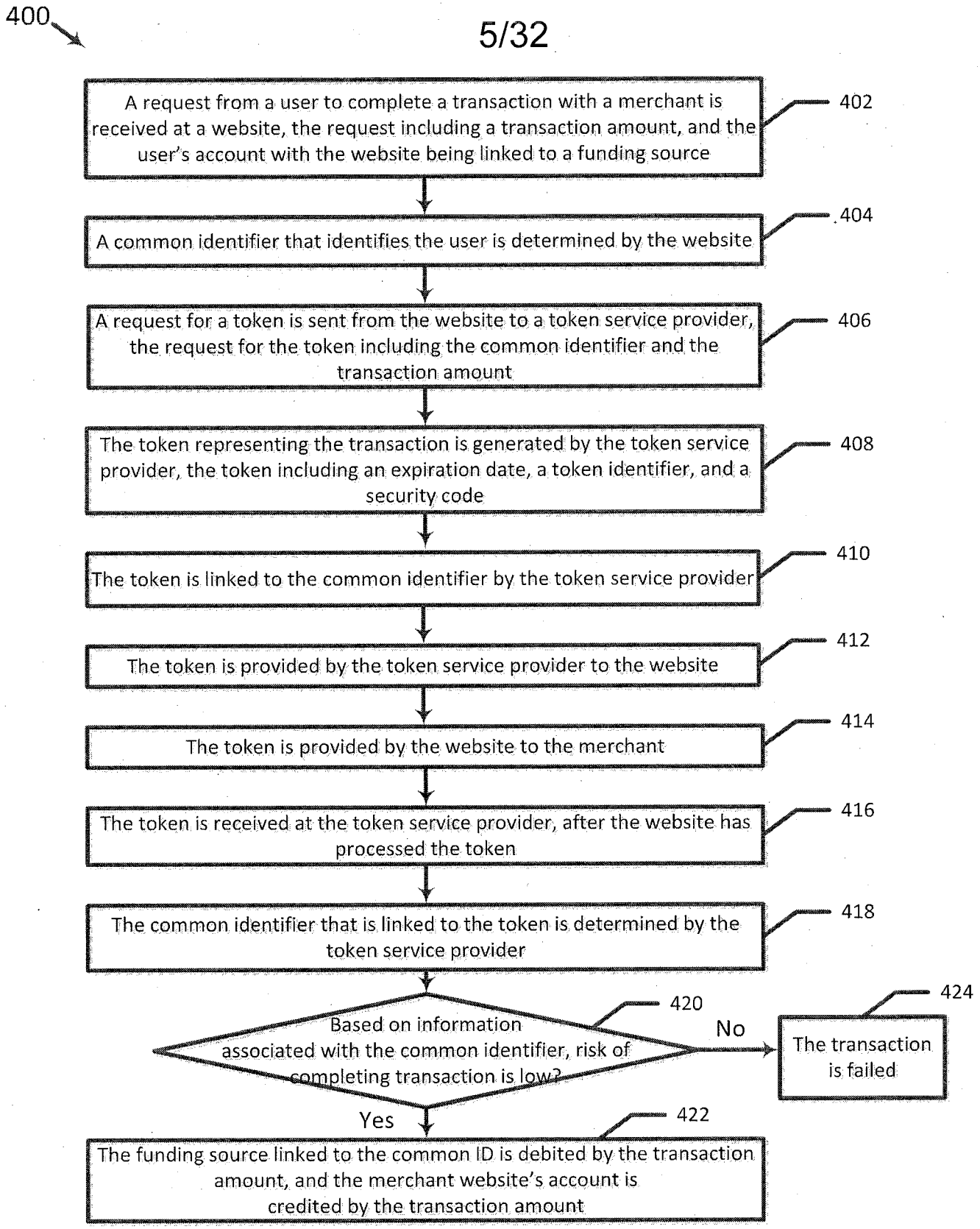

400
A request from a user to complete a transaction with a merchant is received at a website, the request including a transaction amount, and the user's account with the website being linked to a funding source
402
A common identifier that identifies the user is determined by the website
404
A request for a token is sent from the website to a token service provider, the request for the token including the common identifier and the transaction amount
406
The token representing the transaction is generated by the token service provider, the token including an expiration date, a token identifier, and a security code
408
The token is linked to the common identifier by the token service provider
410
The token is provided by the token service provider to the website
412
The token is provided by the website to the merchant
414
The token is received at the token service provider, after the website has processed the token
416
The common identifier that is linked to the token is determined by the token service provider
418
Based on information associated with the common identifier, risk of completing transaction is low?
420
No
The transaction is failed
424
Yes
The funding source linked to the common ID is debited by the transaction amount, and the merchant website's account is credited by the transaction amount
422

Fig. 5

500

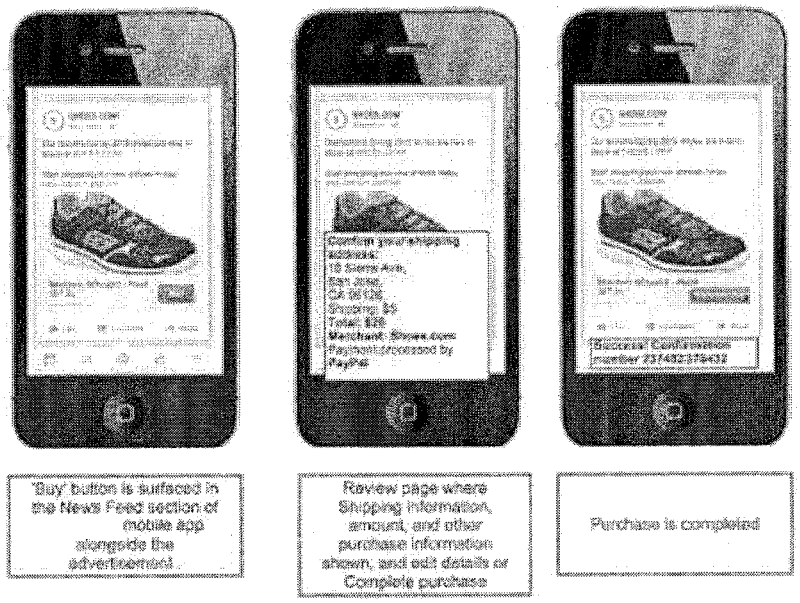

'Buy' button is surfaced in the News Feed section of mobile app alongside the advertisement.
Review page where Shipping information, amount, and other purchase information shown, and edit details or Complete purchase
Purchase is completed

Fig. 6

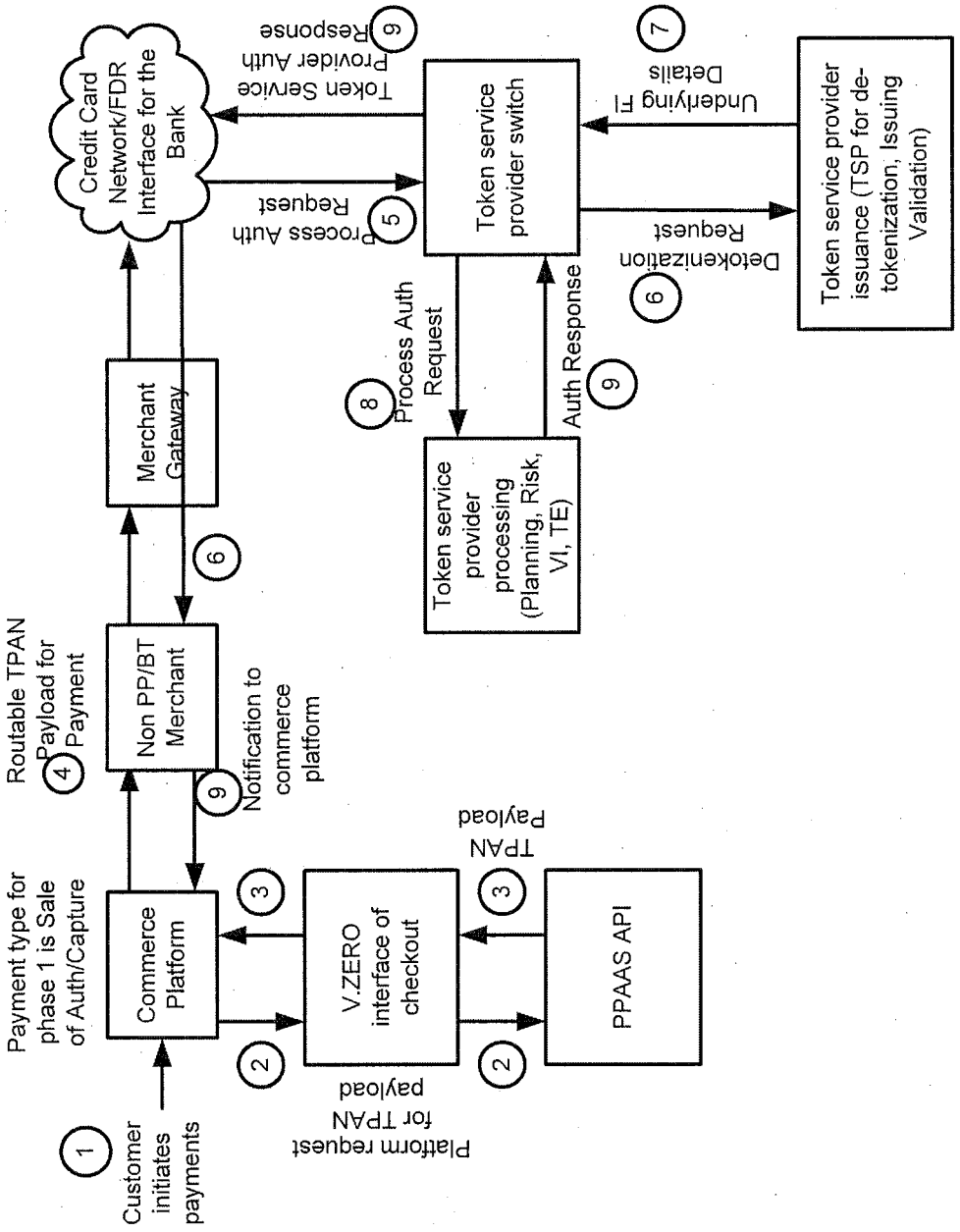

Customer initiates payments
1
Payment type for phase 1 is Sale of Auth/Capture
Commerce Platform
Platform request for TPAN payload
2
V.ZERO interface of checkout
TPAN Payload
3
PPAAS API
Routable TPAN Payload for Payment
4
Non PP/BT Merchant
Notification to commerce platform
9
Merchant Gateway
6
Credit Card Network/FDR Interface for the Bank
Process Auth Request
5
Token Service Provider Auth Response
9
Token service provider switch
Process Auth Request
8
Token service provider processing (Planning, Risk, VI, TE)
Auth Response
9
Detokenization Request
6
Underlying FI Details
7
Token service provider issuance (TSP for de-tokenization, Issuing Validation)

Fig. 7

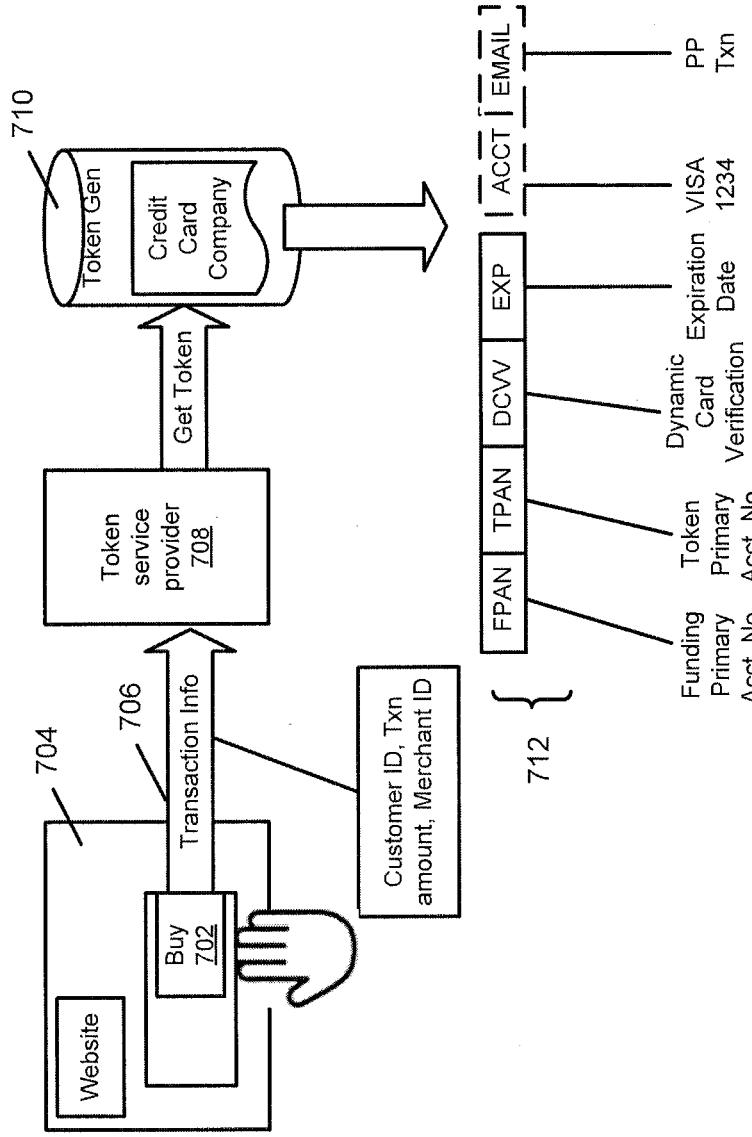

710
Token Gen
Credit Card Company
Get Token
Token service provider 708
706
Transaction Info
704
Website
Buy 702
Customer ID, Txn amount, Merchant ID
712
FPAN
TPAN
DCVV
EXP
ACCT
EMAIL
Funding Primary Acct. No.
Token Primary Acct. No.
Dynamic Card Verification Value
Expiration Date
VISA 1234
PP Txn

Fig. 8

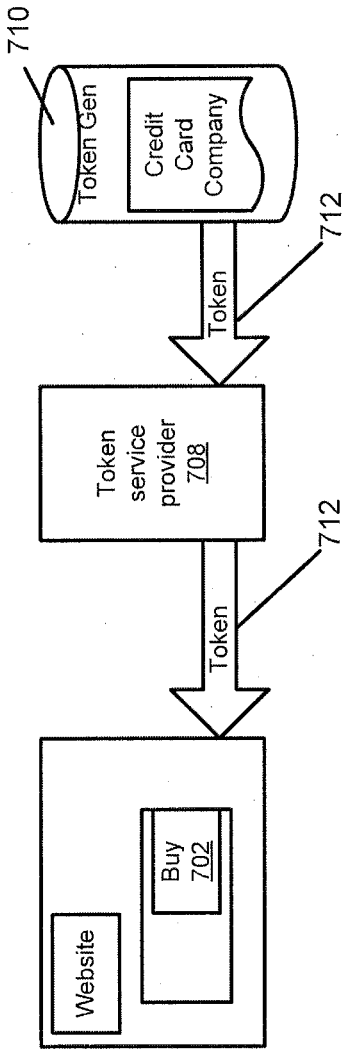

710
Token Gen
Credit Card Company
712
Token
Token service provider 708
712
Token
Buy 702
Website

Fig. 9

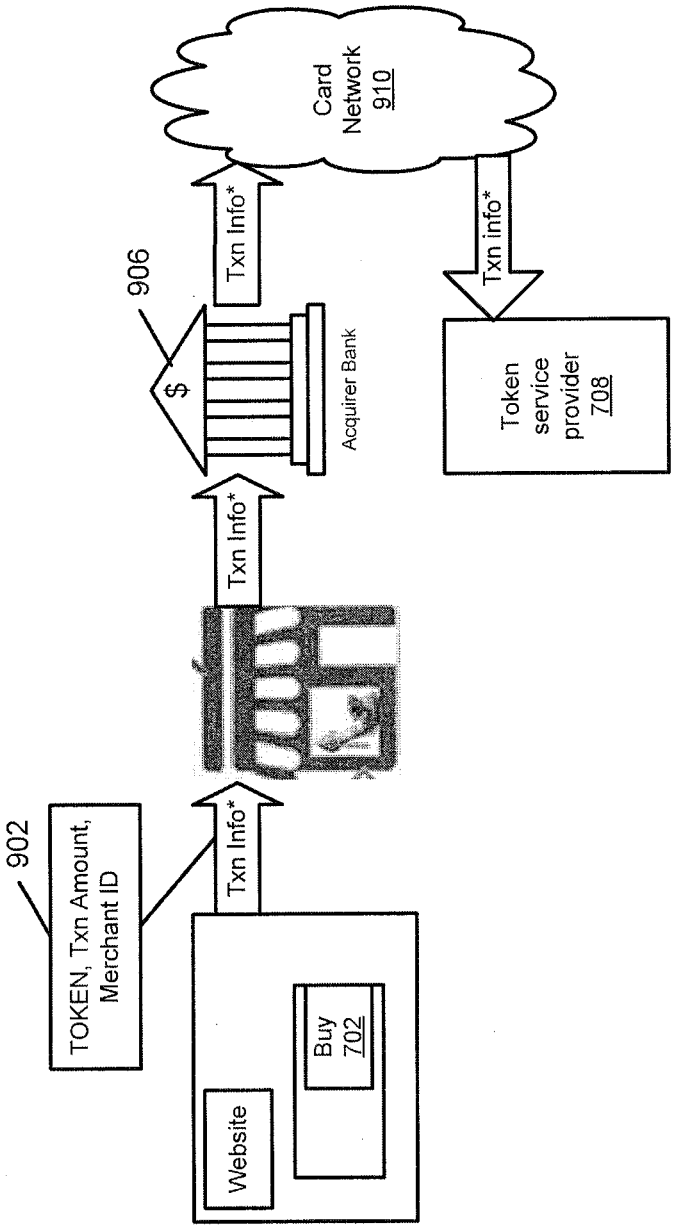

Card Network 910
Txn Info*
Txn info*
906
$
Acquirer Bank
Token service provider 708
Txn Info*
Txn Info*
902
TOKEN, Txn Amount, Merchant ID
Website
Buy 702

Fig. 10

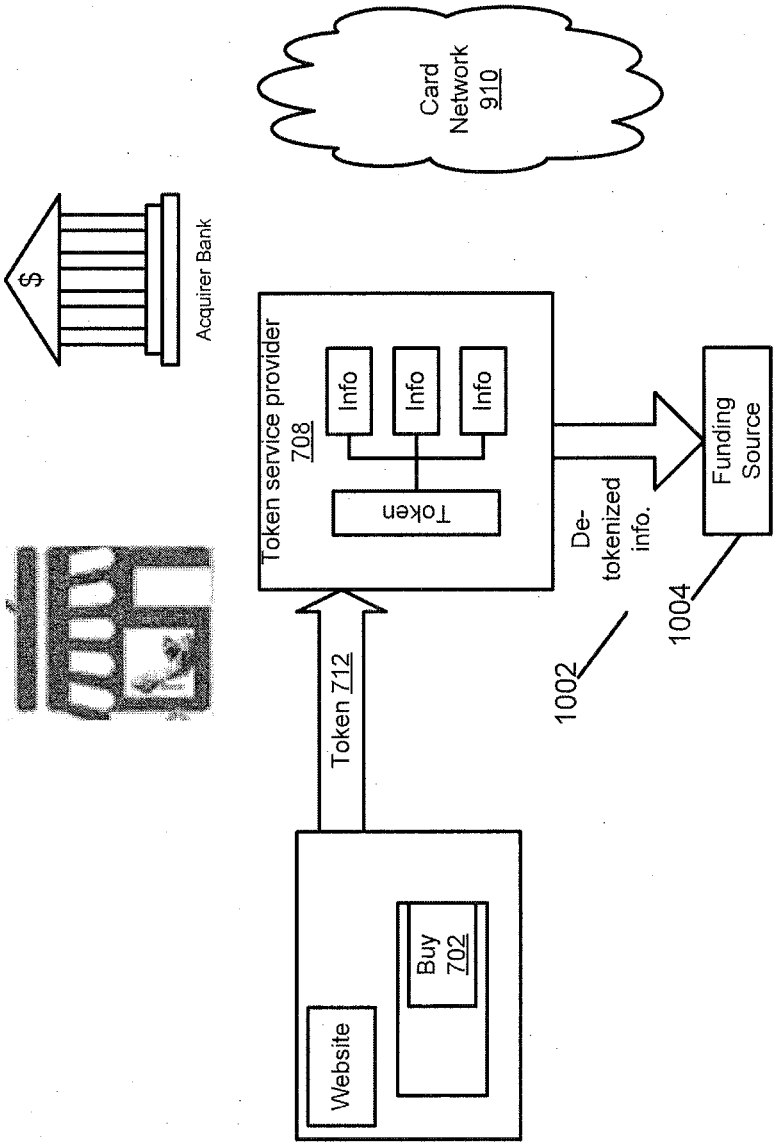

Card Network 910
$
Acquirer Bank
Token service provider 708
Info
Info
Info
Token
De-tokenized info.
Funding Source
1002
1004
Token 712
Website
Buy 702

Fig. 11

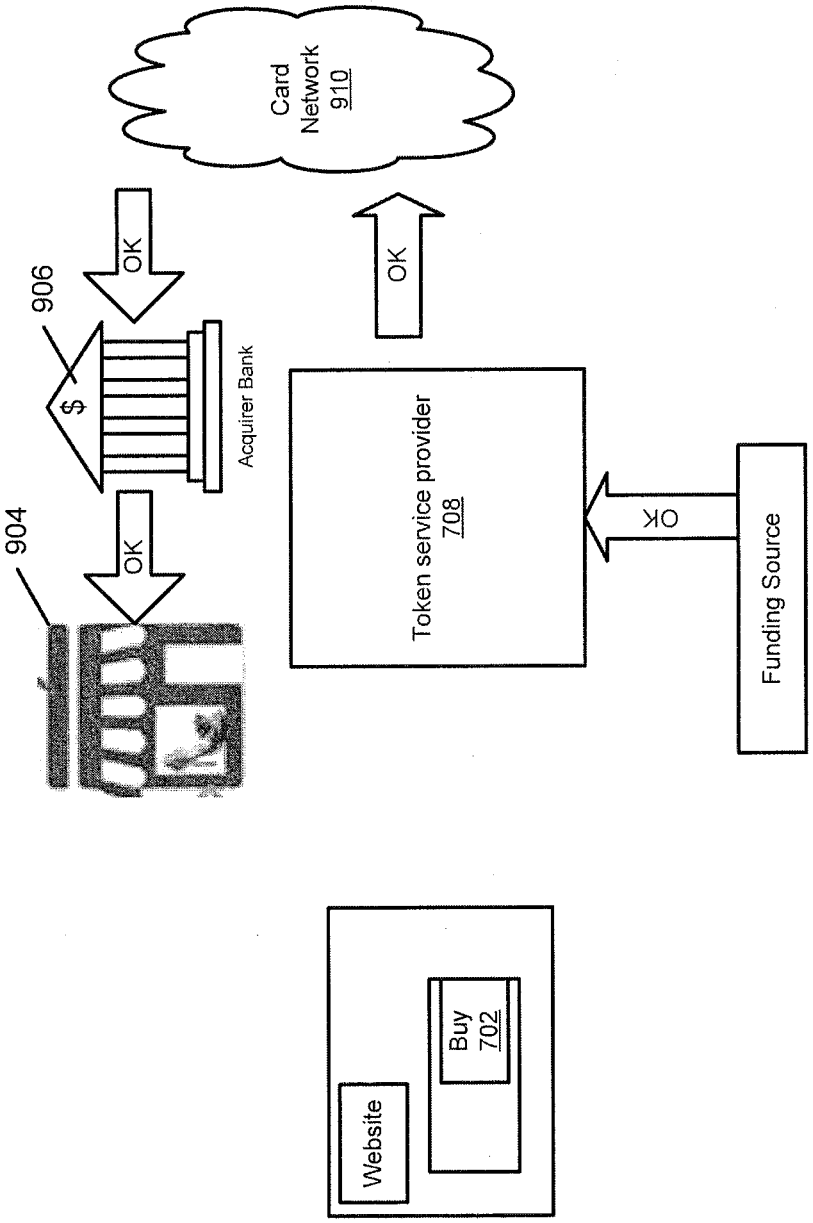

Card Network 910
OK
OK
906
$
Acquirer Bank
904
OK
Token service provider 708
OK
Funding Source
Website
Buy 702

Fig. 12

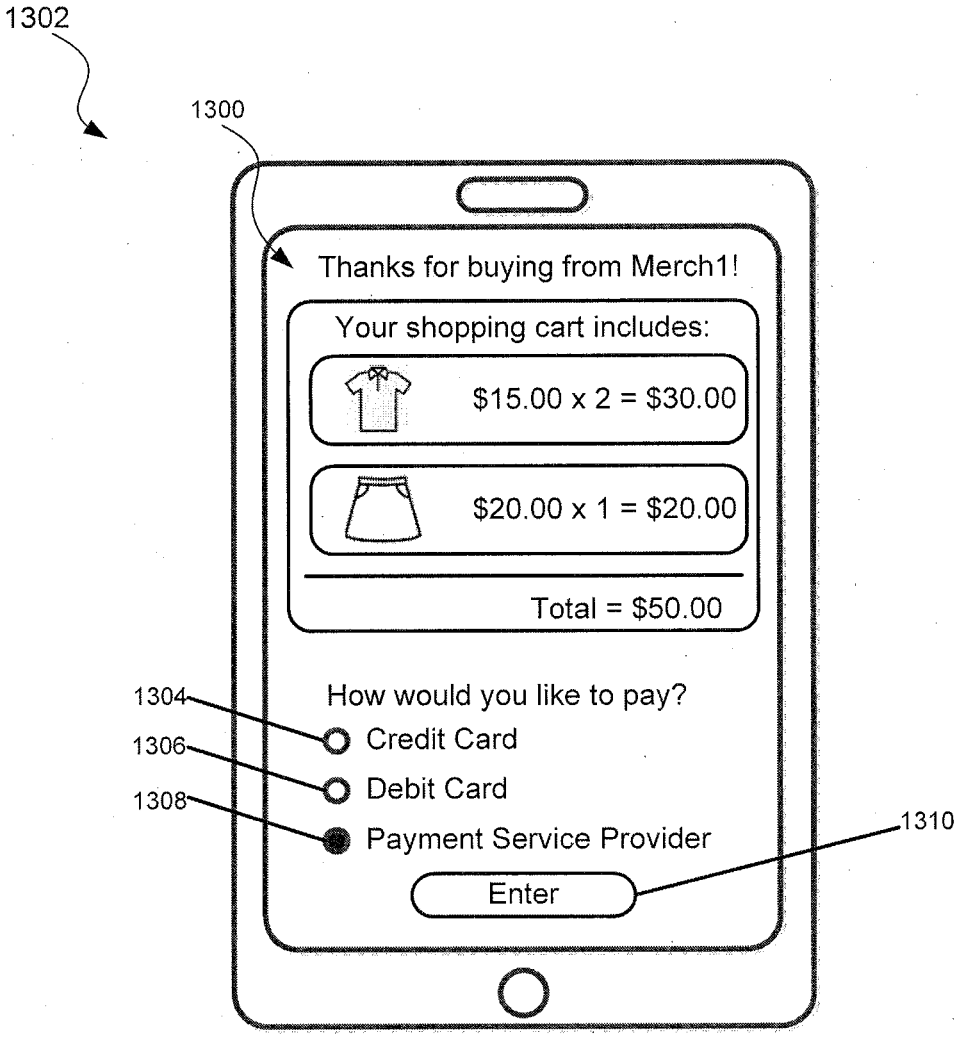

1302
1300
Thanks for buying from Merch1!
Your shopping cart includes:
$15.00 x 2 = $30.00
$20.00 x 1 = $20.00
Total = $50.00
How would you like to pay?
1304
Credit Card
1306
Debit Card
1308
Payment Service Provider
1310
Enter

Fig. 13

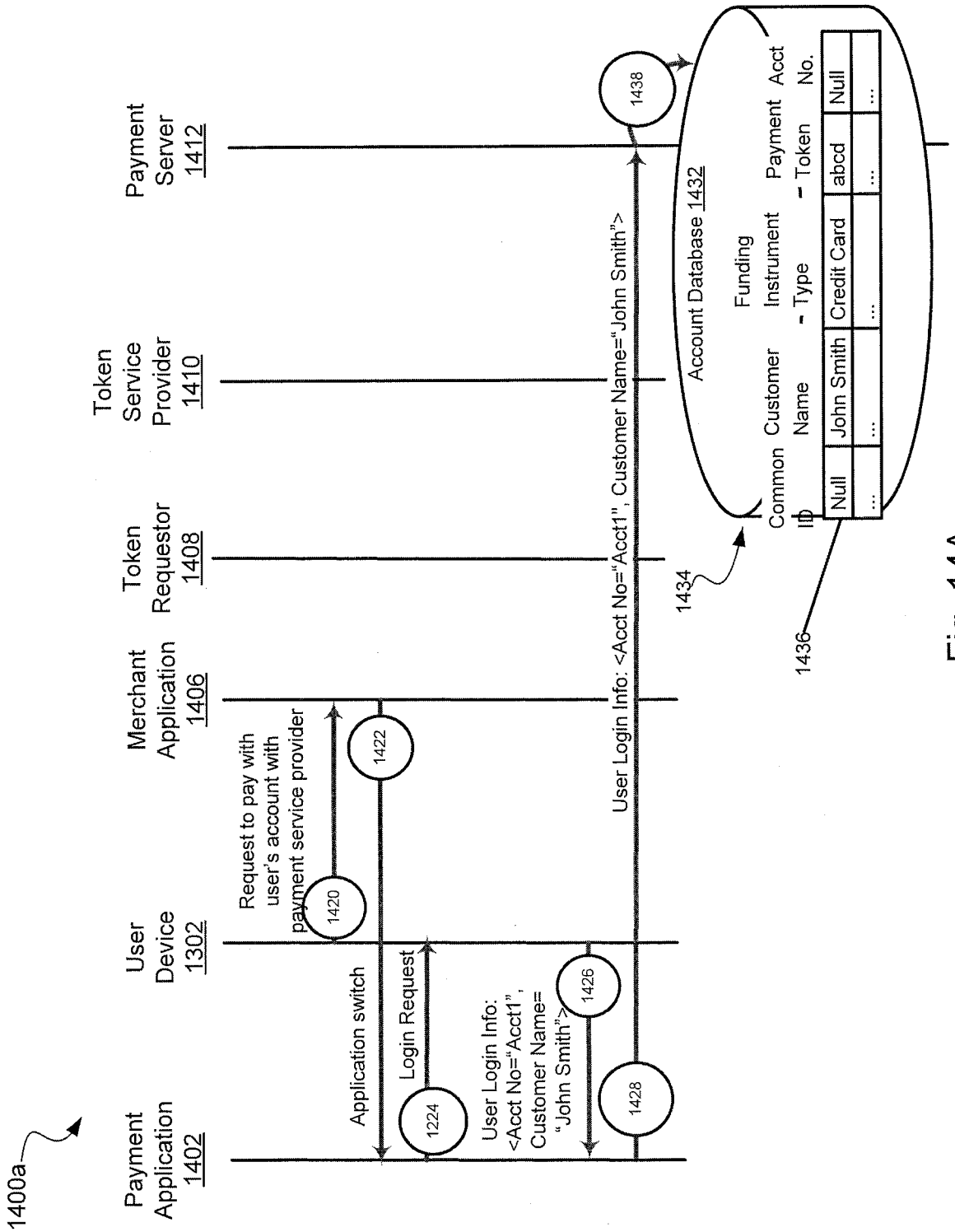

1400a
Payment Application 1402
User Device 1302
Merchant Application 1406
Token Requestor 1408
Token Service Provider 1410
Payment Server 1412
Request to pay with user's account with payment service provider
1420
1422
Application switch
Login Request
1224
User Login Info: <Acct No="Acct1", Customer Name= "John Smith">
1426
1428
User Login Info: <Acct No="Acct1", Customer Name="John Smith">
1438
1434
Account Database 1432
Common ID
Customer Name
Funding Instrument - Type
Payment - Token
Acct No.
Null
John Smith
Credit Card
abcd
Null
1436

Fig. 14A

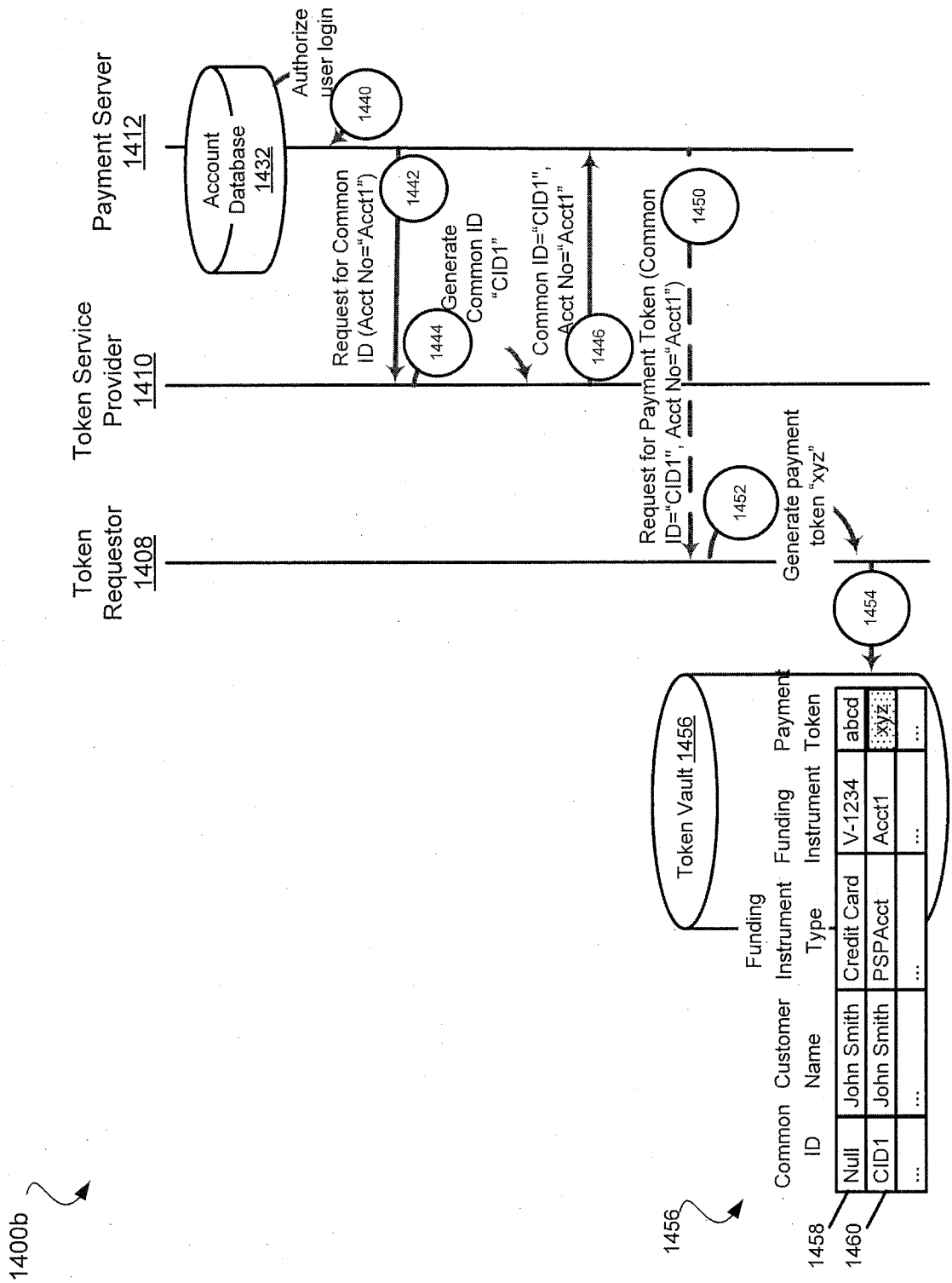

1400b
Token Requestor 1408
Token Service Provider 1410
Payment Server 1412
Account Database 1432
Authorize user login
1440
Request for Common ID (Acct No="Acct1")
1442
Generate Common ID "CID1"
1444
Common ID="CID1", Acct No="Acct1"
1446
Request for Payment Token (Common ID="CID1", Acct No="Acct1")
1450
Generate payment token "xyz"
1452
1454
Token Vault 1456
1456
Common ID
Customer Name
Funding Instrument Type
Funding Instrument
Payment Token
Null
John Smith
Credit Card
V-1234
abcd
CID1
John Smith
PSPAcct
Acct1
xyz
1458
1460

Fig. 14B

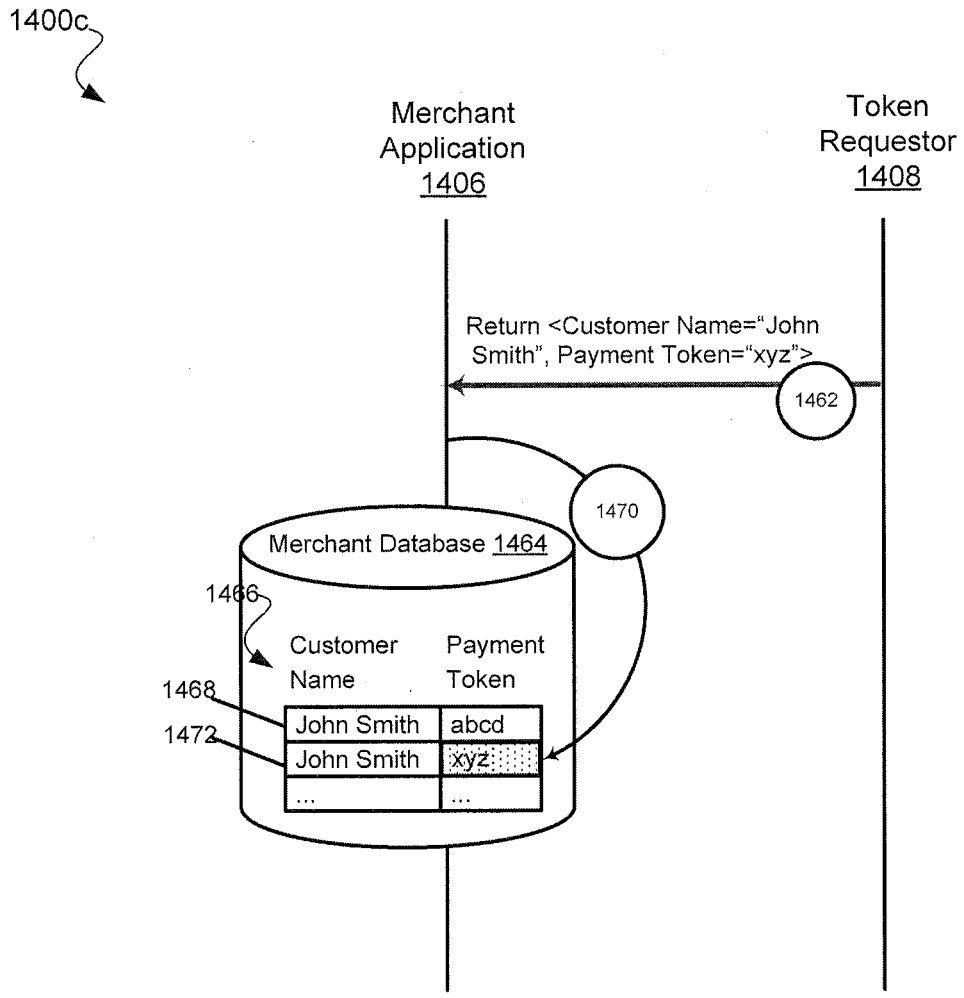

1400c
Merchant Application 1406
Token Requestor 1408
Return <Customer Name="John Smith", Payment Token="xyz">
1462
1470
Merchant Database 1464
1466
Customer Name
Payment Token
1468
1472
John Smith
abcd
John Smith
xyz
...
...

Fig. 14C

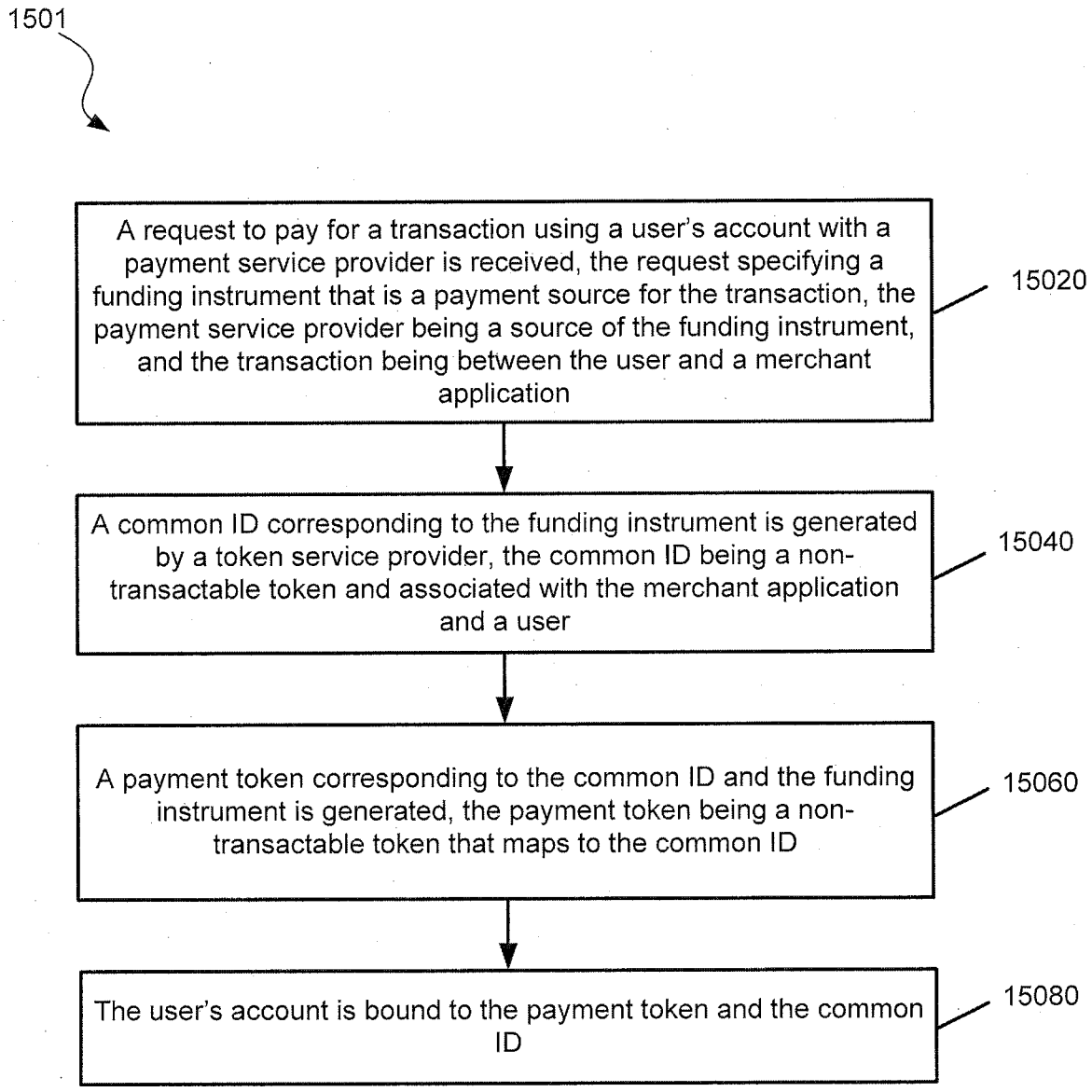

1501
A request to pay for a transaction using a user's account with a payment service provider is received, the request specifying a funding instrument that is a payment source for the transaction, the payment service provider being a source of the funding instrument, and the transaction being between the user and a merchant application
15020
A common ID corresponding to the funding instrument is generated by a token service provider, the common ID being a non-transactable token and associated with the merchant application and a user
15040
A payment token corresponding to the common ID and the funding instrument is generated, the payment token being a non-transactable token that maps to the common ID
15060
The user's account is bound to the payment token and the common ID
15080

Fig. 15

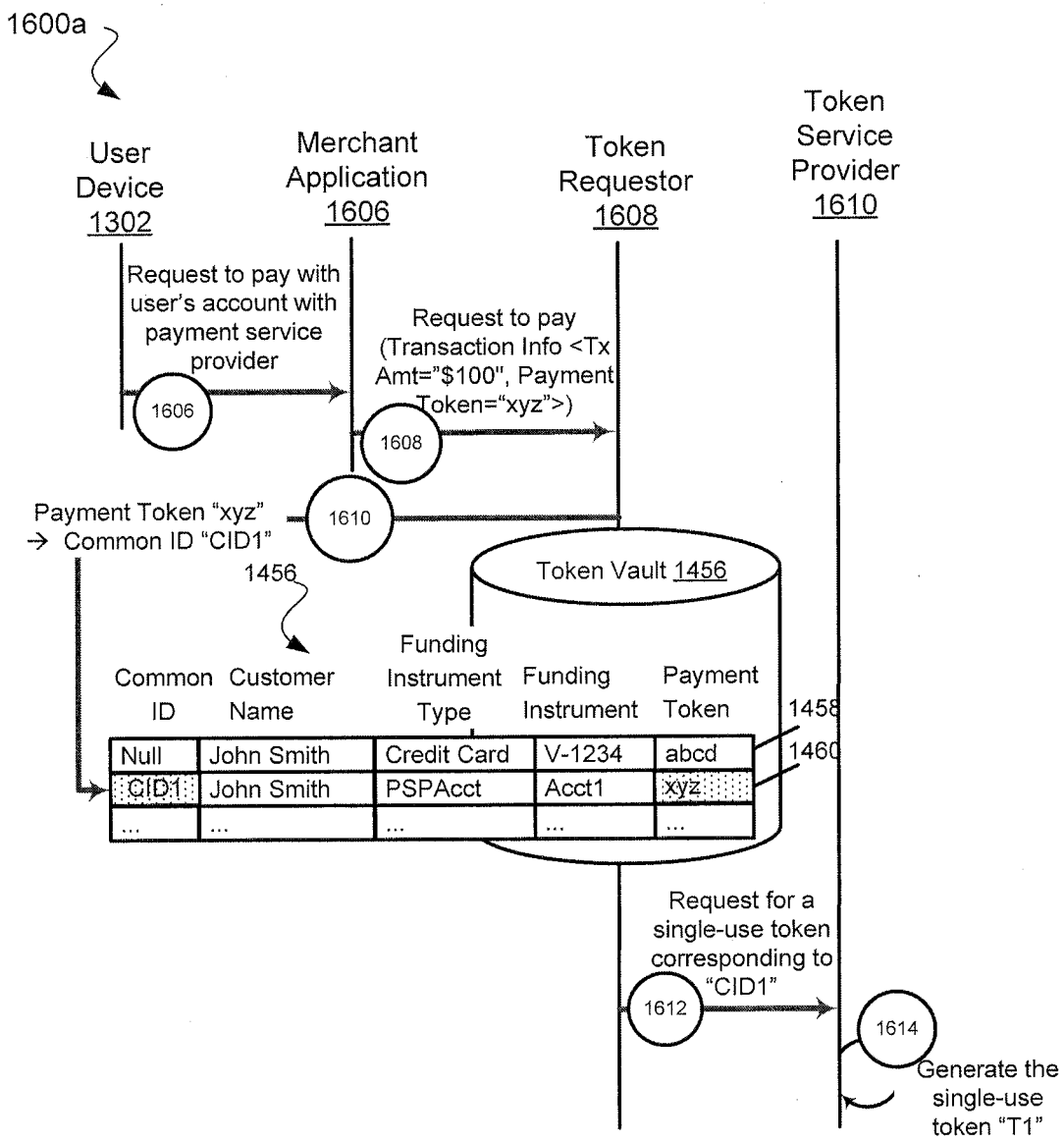

1600a
User Device 1302
Merchant Application 1606
Token Requestor 1608
Token Service Provider 1610
Request to pay with user's account with payment service provider
1606
Request to pay (Transaction Info <Tx Amt="$100", Payment Token="xyz">)
1608
Payment Token "xyz" → Common ID "CID1"
1610
1456
Token Vault 1456
Common ID
Customer Name
Funding Instrument Type
Funding Instrument
Payment Token
1458
1460
Null
John Smith
Credit Card
V-1234
abcd
CID1
John Smith
PSPAcct
Acct1
xyz
...
...
...
...
...
Request for a single-use token corresponding to "CID1"
1612
1614
Generate the single-use token "T1"

Fig. 16A

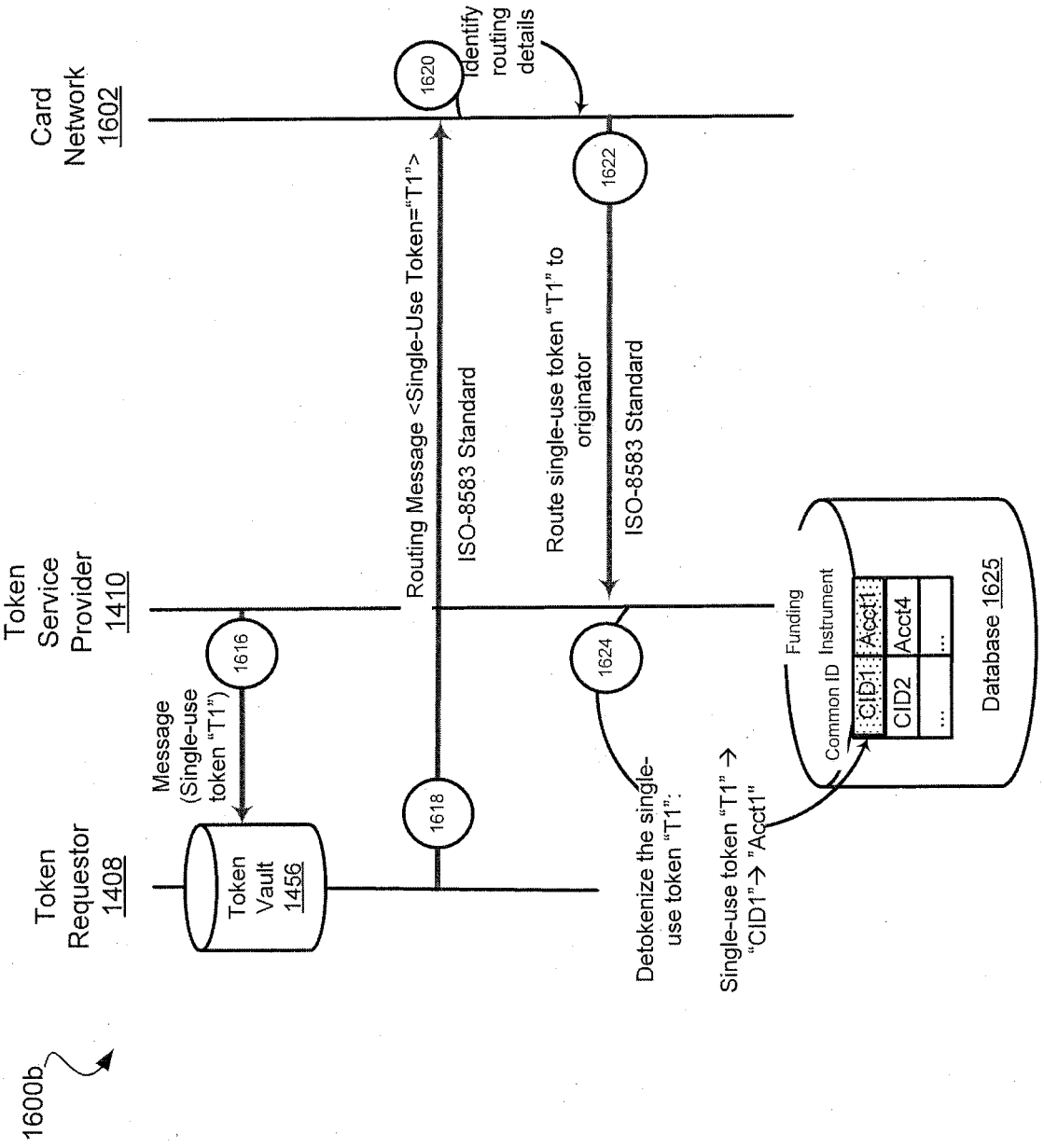

1600b
Token Requestor 1408
Token Service Provider 1410
Card Network 1602
Token Vault 1456
Message (Single-use token "T1")
1616
Routing Message <Single-Use Token="T1">
ISO-8583 Standard
1618
1620
Identify routing details
1622
Route single-use token "T1" to originator
ISO-8583 Standard
1624
Detokenize the single-use token "T1".
Single-use token "T1" → "CID1" → "Acct1"
Funding Instrument
Common ID
CID1
Acct1
CID2
Acct4
Database 1625

Fig. 16B

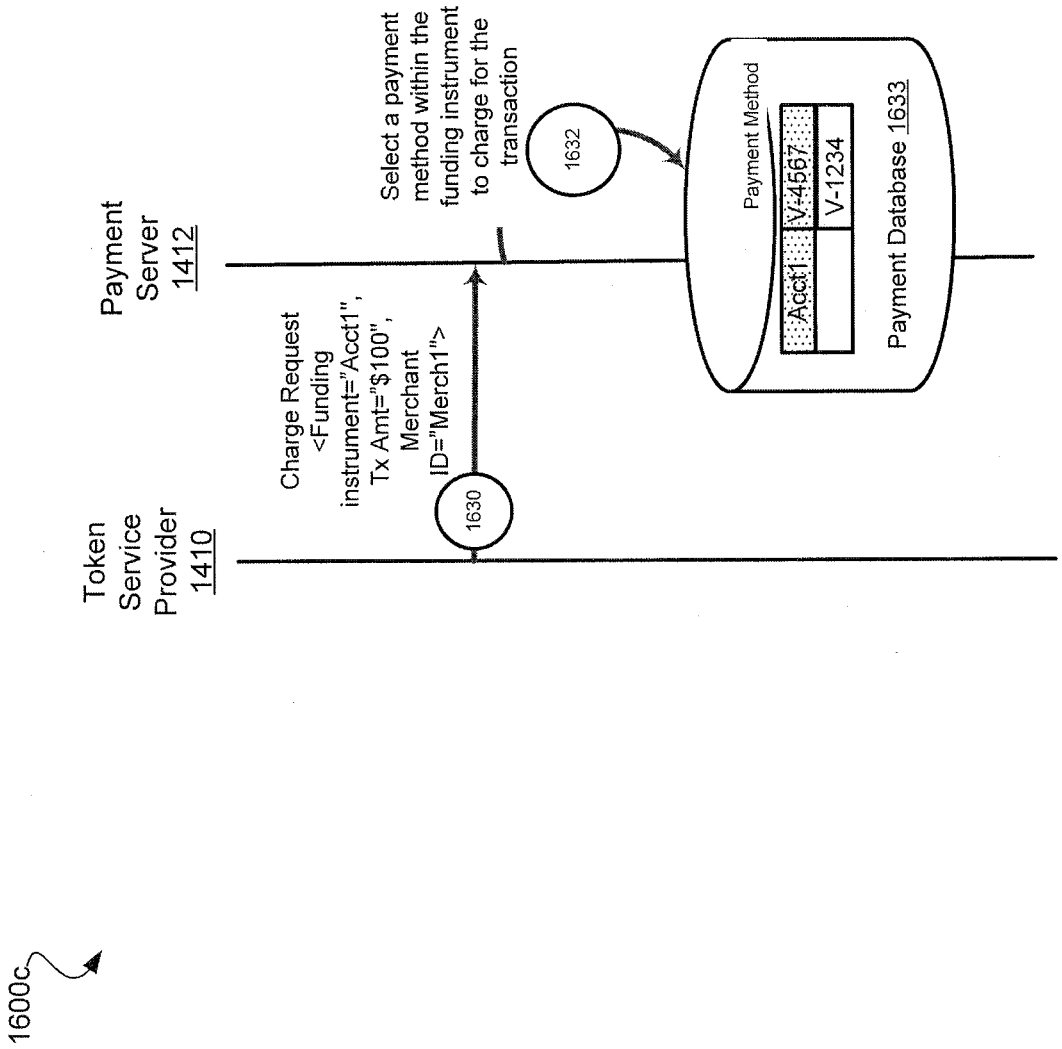

1600c
Token Service Provider 1410
Payment Server 1412
Charge Request <Funding instrument="Acct1", Tx Amt="$100", Merchant ID="Merch1">
1630
Select a payment method within the funding instrument to charge for the transaction
1632
Payment Method
Acct1
V-4567
V-1234
Payment Database 1633

Fig. 16C

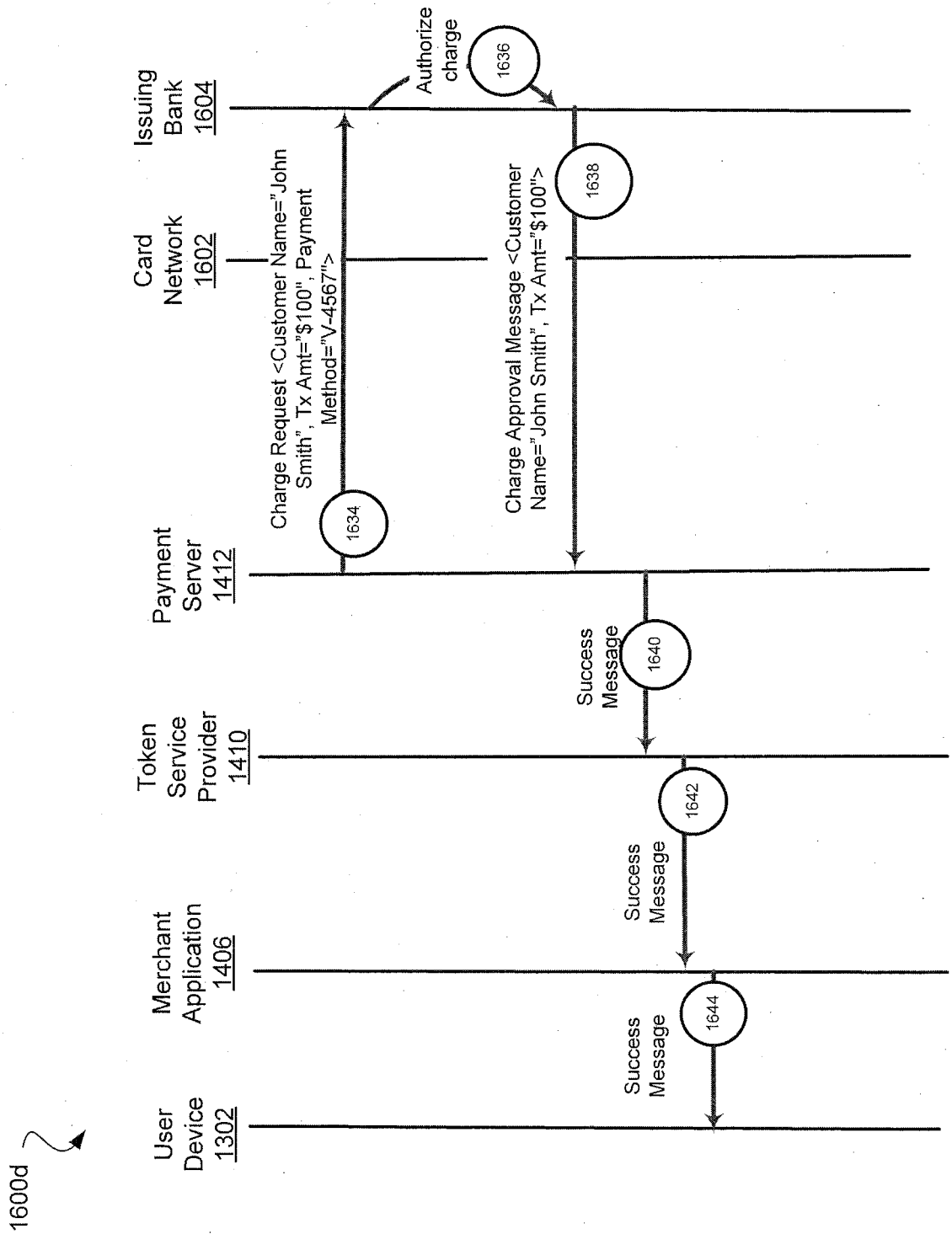

1600d
User Device 1302
Merchant Application 1406
Token Service Provider 1410
Payment Server 1412
Card Network 1602
Issuing Bank 1604
Charge Request <Customer Name="John Smith", Tx Amt="$100", Payment Method="V-4567">
1634
Authorize charge
1636
Charge Approval Message <Customer Name="John Smith", Tx Amt="$100">
1638
Success Message
1640
Success Message
1642
Success Message
1644

Fig. 16D

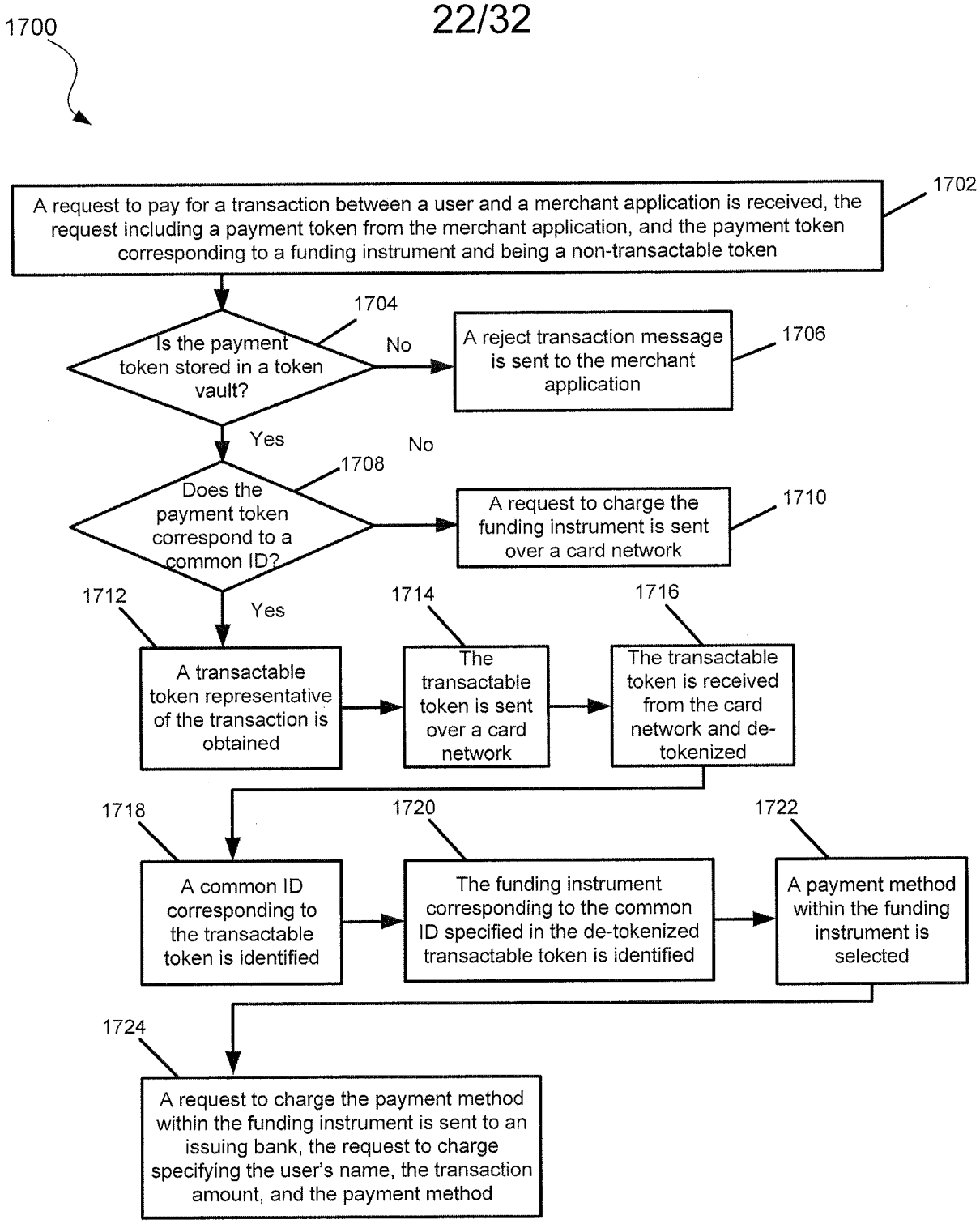

1700
A request to pay for a transaction between a user and a merchant application is received, the request including a payment token from the merchant application, and the payment token corresponding to a funding instrument and being a non-transactable token
1702
1704
Is the payment token stored in a token vault?
No
A reject transaction message is sent to the merchant application
1706
Yes
No
1708
Does the payment token correspond to a common ID?
A request to charge the funding instrument is sent over a card network
1710
Yes
1712
1714
1716
A transactable token representative of the transaction is obtained
The transactable token is sent over a card network
The transactable token is received from the card network and de-tokenized
1718
1720
1722
A common ID corresponding to the transactable token is identified
The funding instrument corresponding to the common ID specified in the de-tokenized transactable token is identified
A payment method within the funding instrument is selected
1724
A request to charge the payment method within the funding instrument is sent to an issuing bank, the request to charge specifying the user's name, the transaction amount, and the payment method

Fig. 17

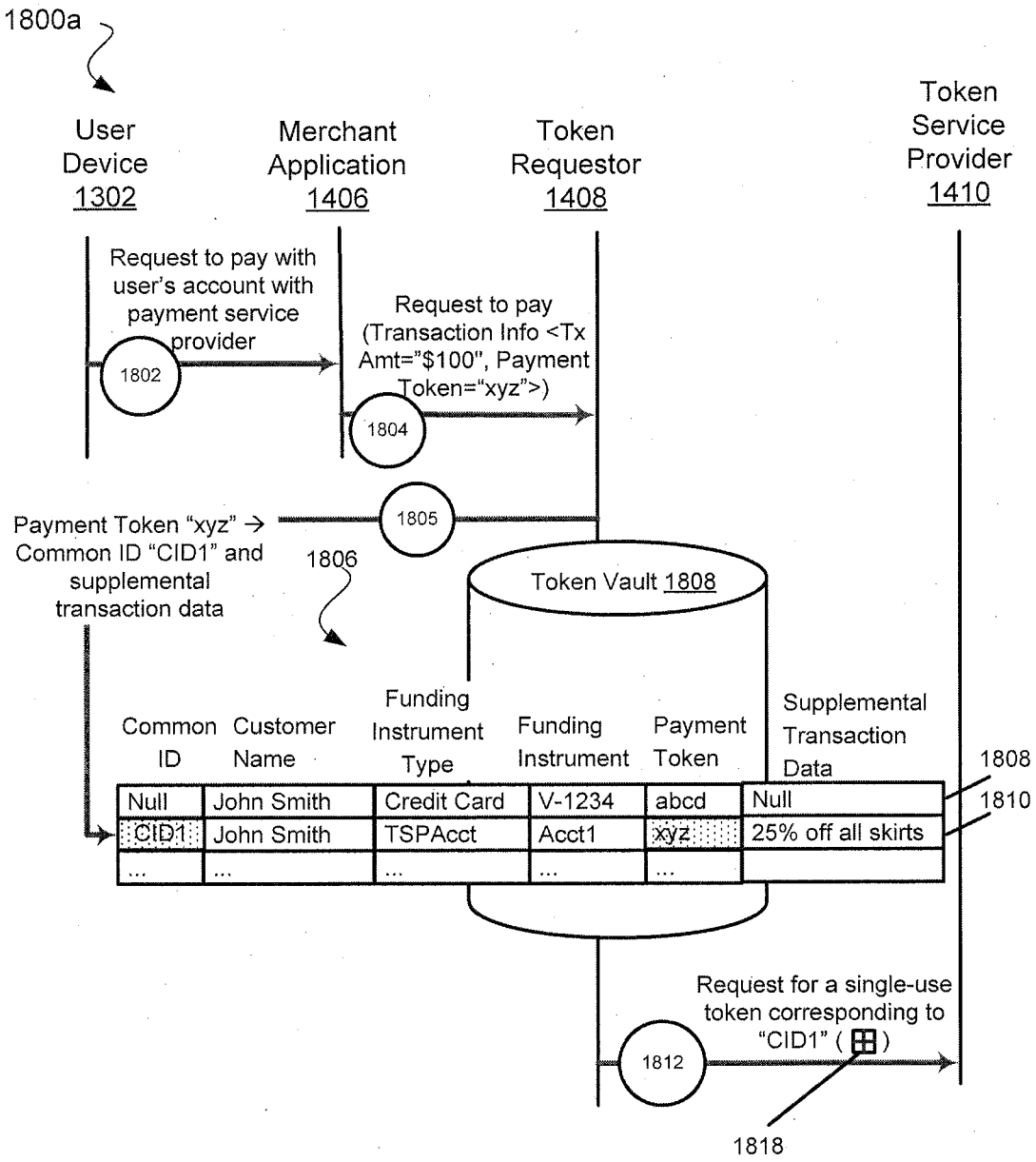

1800a
User Device 1302
Merchant Application 1406
Token Requestor 1408
Token Service Provider 1410
Request to pay with user's account with payment service provider
1802
Request to pay (Transaction Info <Tx Amt="$100", Payment Token="xyz">)
1804
1805
Payment Token "xyz" → Common ID "CID1" and supplemental transaction data
1806
Token Vault 1808
Common ID
Customer Name
Funding Instrument Type
Funding Instrument
Payment Token
Supplemental Transaction Data
1808
1810
Null
John Smith
Credit Card
V-1234
abcd
Null
CID1
John Smith
TSPAcct
Acct1
xyz
25% off all skirts
...
...
...
...
...
Request for a single-use token corresponding to "CID1" ( )
1812
1818

Fig. 18A

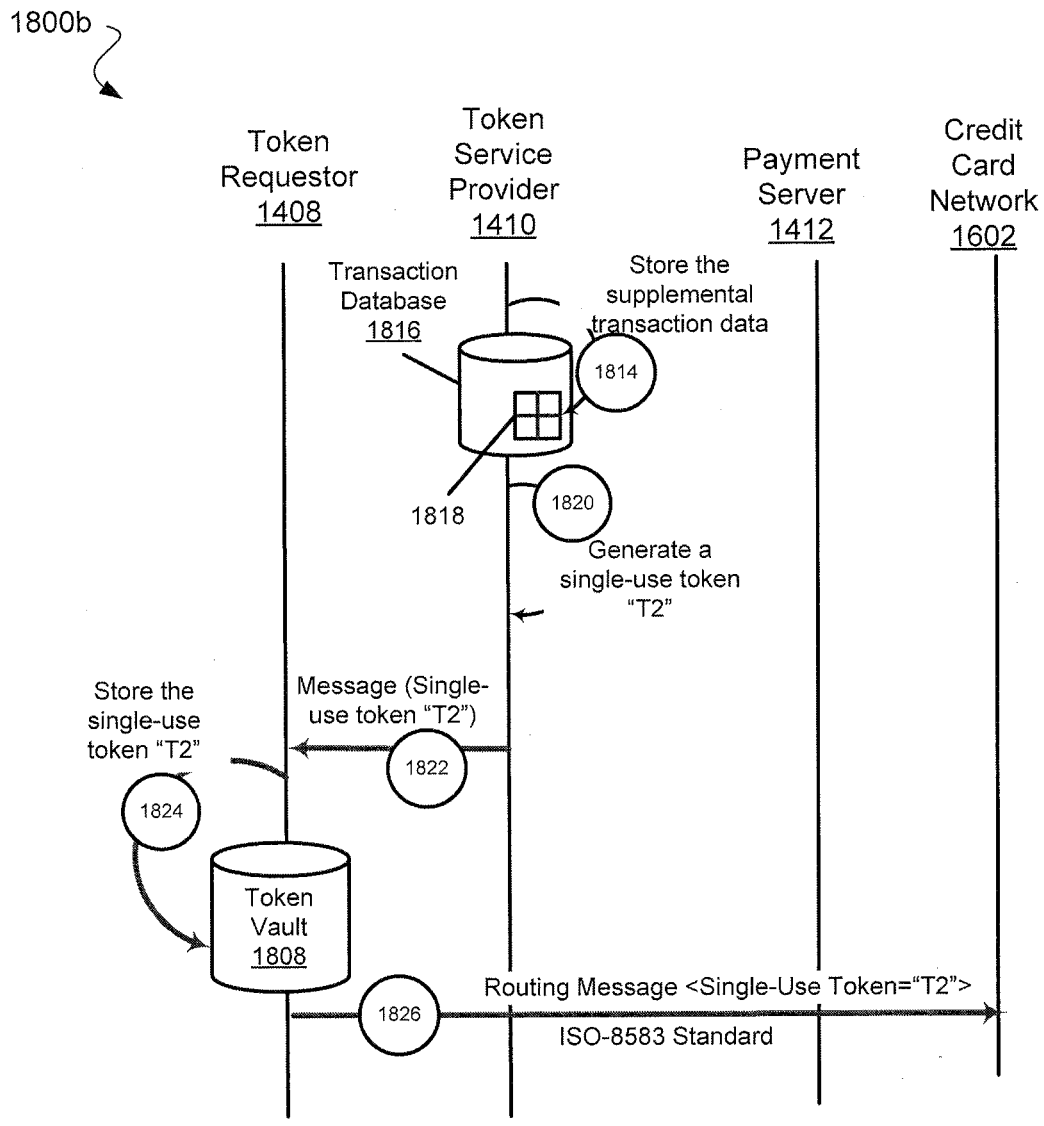

1800b
Token Requestor 1408
Token Service Provider 1410
Payment Server 1412
Credit Card Network 1602
Transaction Database 1816
Store the supplemental transaction data
1814
1818
1820
Generate a single-use token "T2"
Store the single-use token "T2"
Message (Single-use token "T2")
1822
1824
Token Vault 1808
Routing Message <Single-Use Token="T2">
1826
ISO-8583 Standard

Fig. 18B

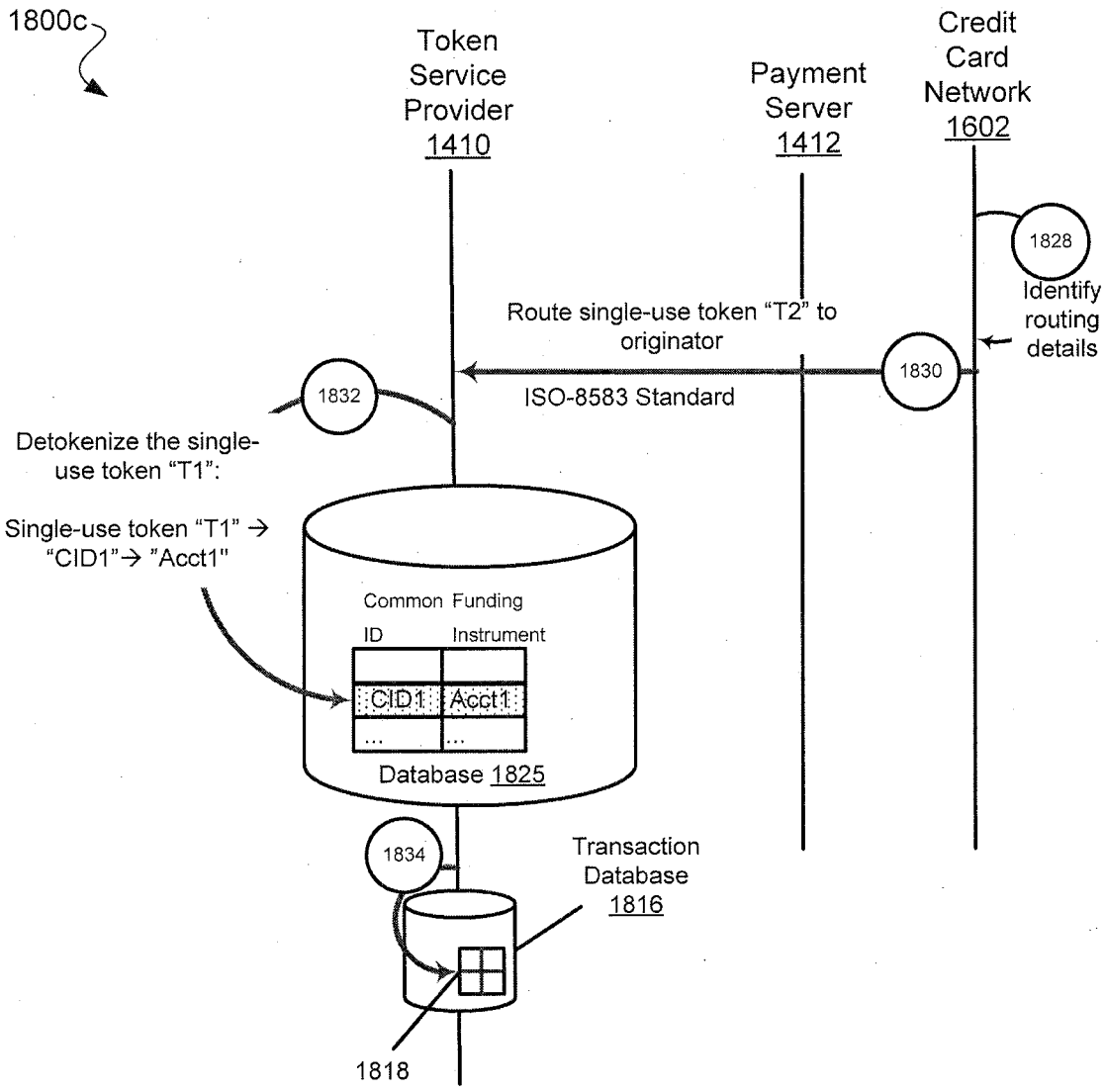

1800c
Token Service Provider 1410
Payment Server 1412
Credit Card Network 1602
1828
Identify routing details
Route single-use token "T2" to originator
1830
ISO-8583 Standard
1832
Detokenize the single-use token "T1":
Single-use token "T1" → "CID1"→ "Acct1"
Common Funding ID
Instrument
CID1
Acct1
Database 1825
1834
Transaction Database 1816
1818

Fig. 18C

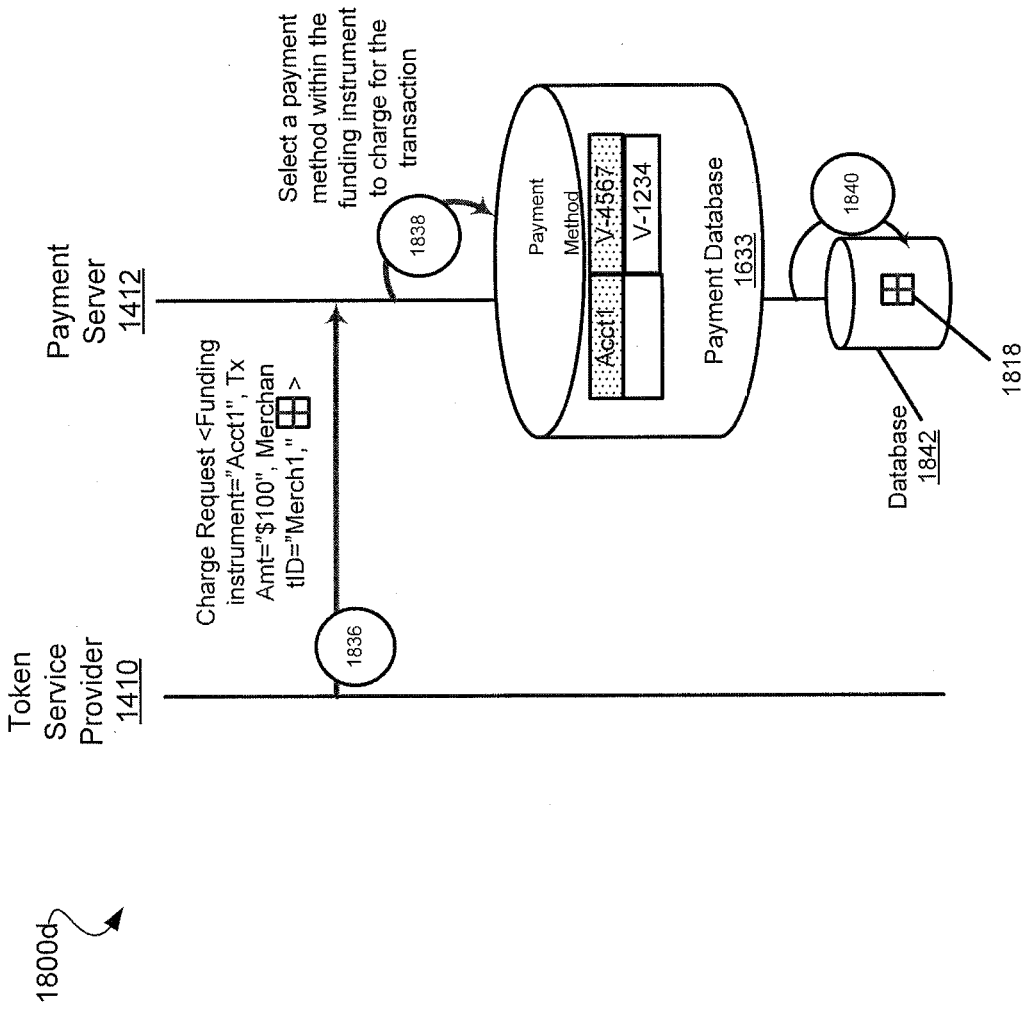

1800d
Token Service Provider 1410
Payment Server 1412
Charge Request <Funding instrument="Acct1", Tx Amt="$100", Merchan tID="Merch1,"
1836
Select a payment method within the funding instrument to charge for the transaction
1838
Payment Method
V-4567
V-1234
Acct1
Payment Database 1633
1840
Database 1842
1818

Fig. 18D

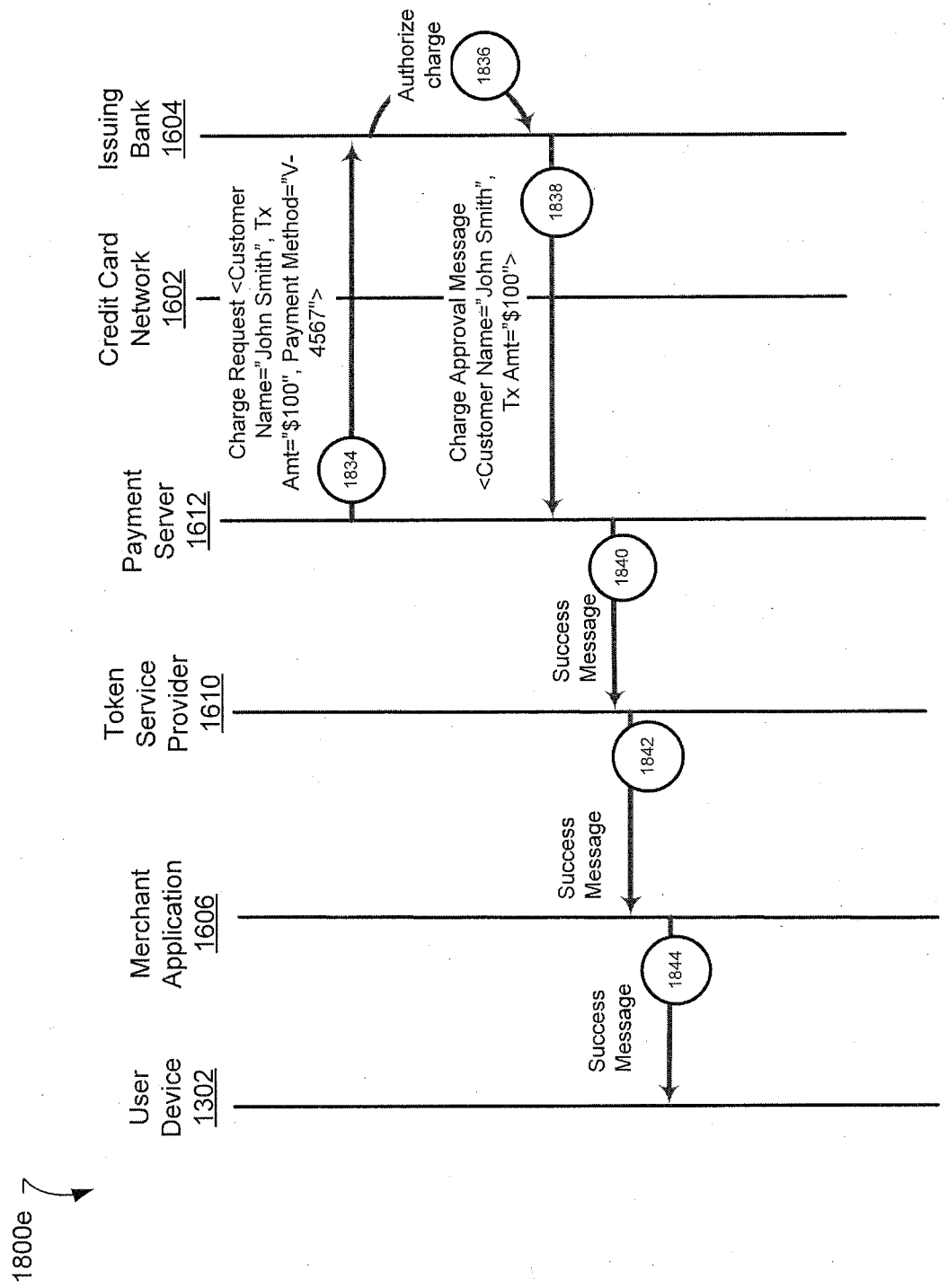

1800e
User Device 1302
Merchant Application 1606
Token Service Provider 1610
Payment Server 1612
Credit Card Network 1602
Issuing Bank 1604
Charge Request <Customer Name="John Smith", Tx Amt="$100", Payment Method="V-4567">
1834
Authorize charge
1836
Charge Approval Message <Customer Name="John Smith", Tx Amt="$100">
1838
Success Message
1840
Success Message
1842
Success Message
1844

Fig. 18E

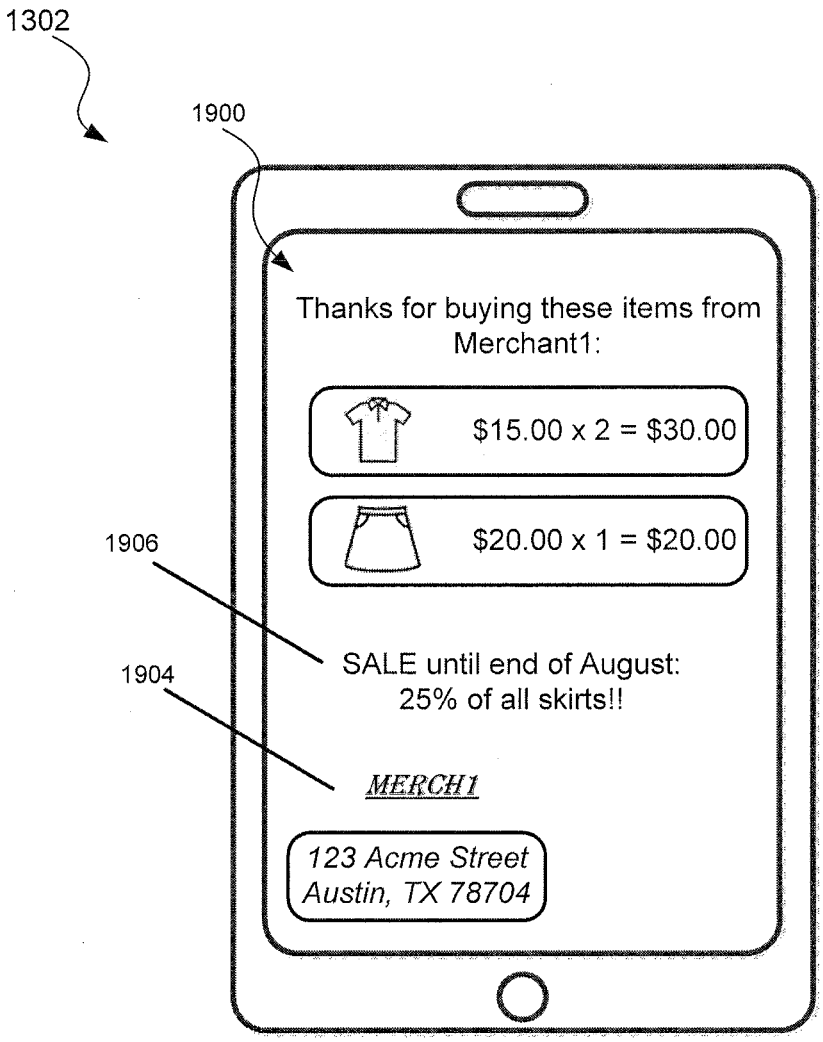

1302
1900
Thanks for buying these items from Merchant1:
$15.00 x 2 = $30.00
$20.00 x 1 = $20.00
1906
SALE until end of August:
25% of all skirts!!
1904
MERCH1
123 Acme Street
Austin, TX 78704

Fig. 19

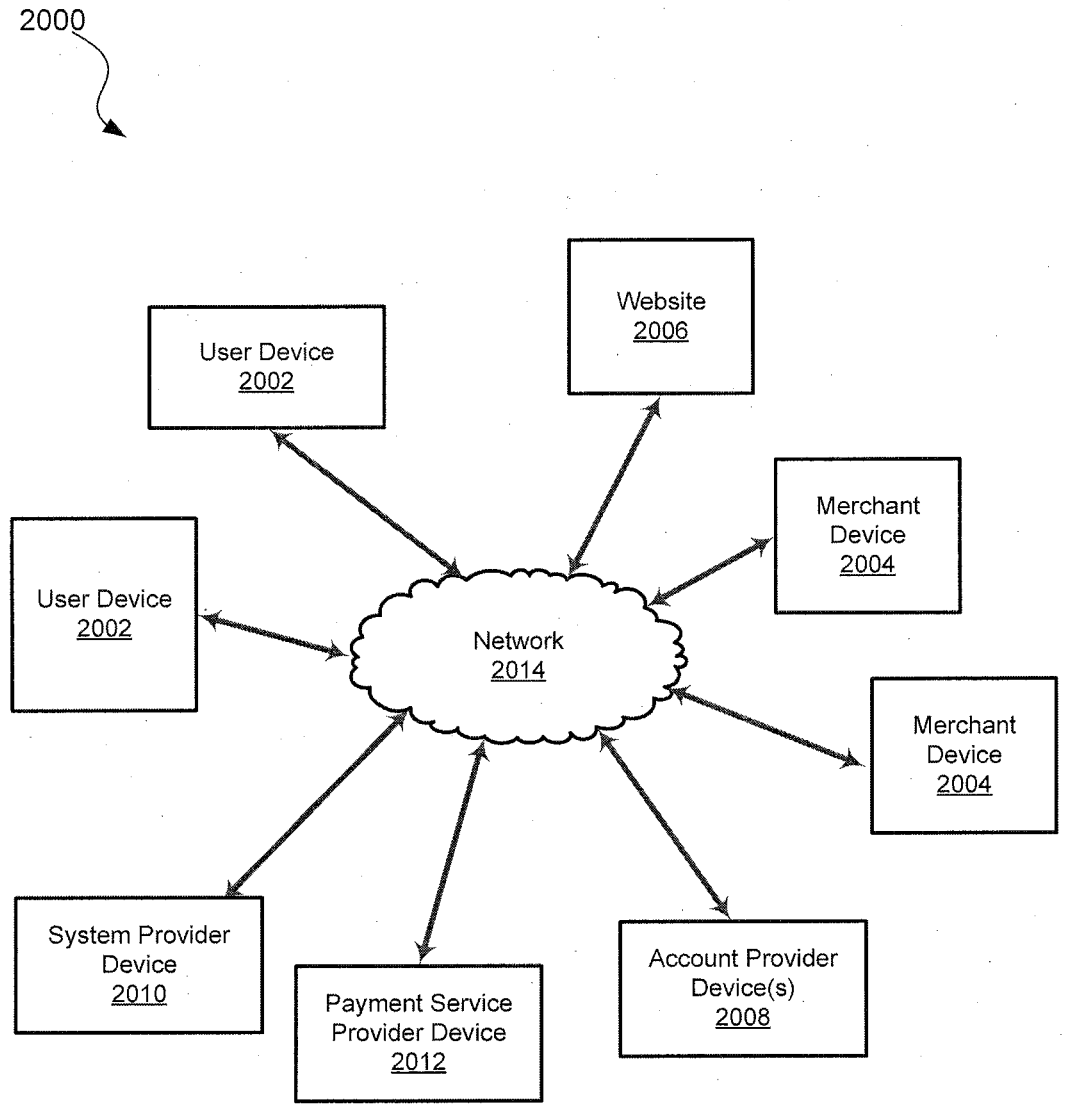

2000
Website
2006
User Device
2002
Merchant
Device
2004
User Device
2002
Network
2014
Merchant
Device
2004
System Provider
Device
2010
Payment Service
Provider Device
2012
Account Provider
Device(s)
2008

Fig. 20

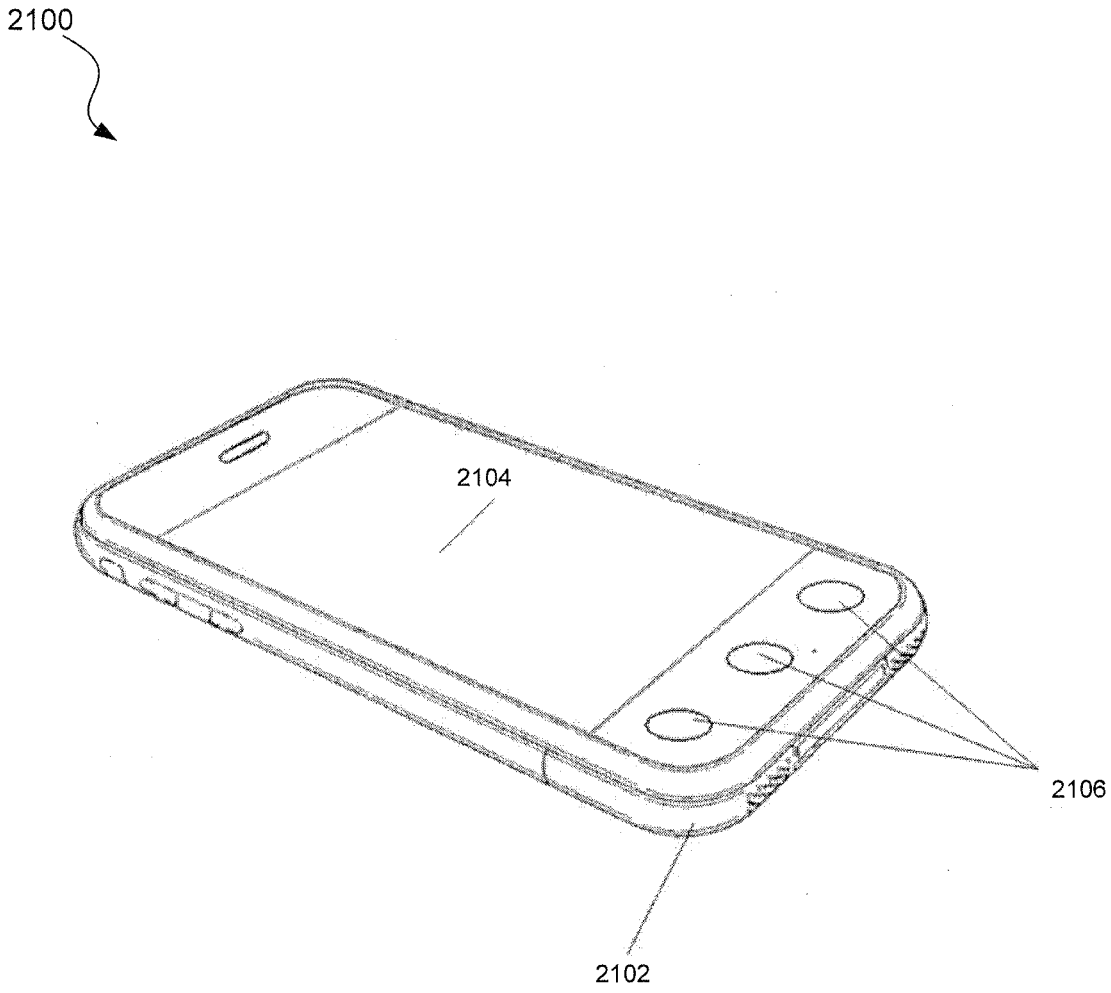


Fig. 21

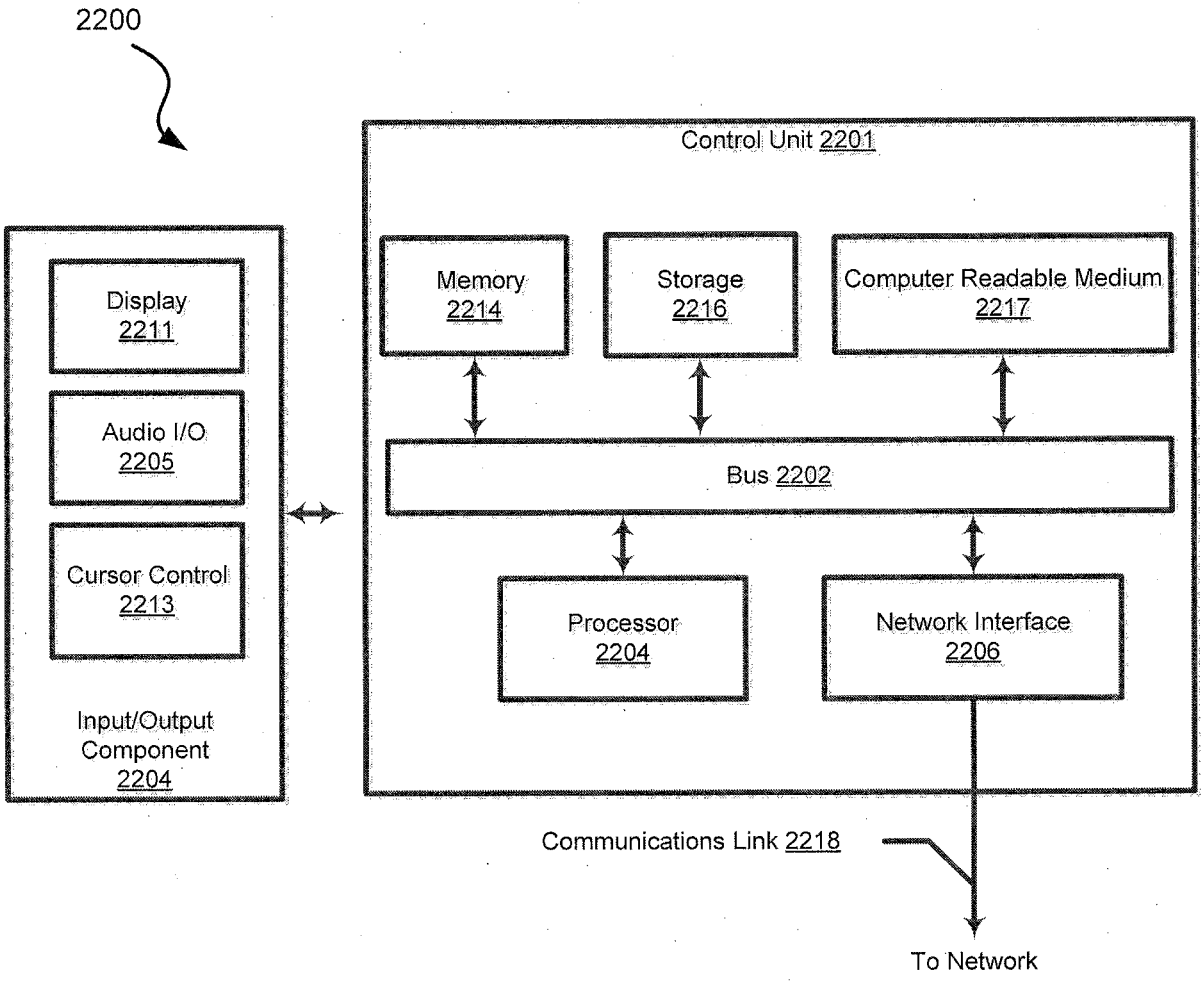

2200
Control Unit 2201
Memory 2214
Storage 2216
Computer Readable Medium 2217
Bus 2202
Processor 2204
Network Interface 2206
Display 2211
Audio I/O 2205
Cursor Control 2213
Input/Output Component 2204
Communications Link 2218
To Network

Fig. 22

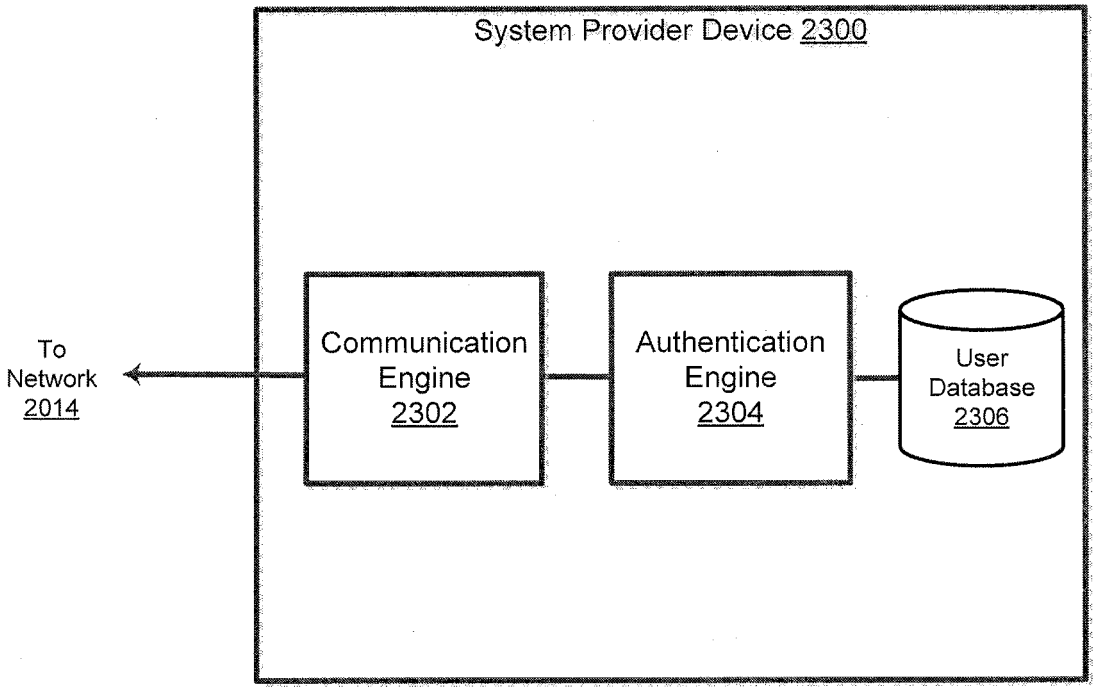

System Provider Device 2300
Communication Engine 2302
Authentication Engine 2304
User Database 2306
To Network 2014

Fig. 23