US 20200184558A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2020/0184558 A1**

Crumb et al. (43) **Pub. Date: Jun. 11, 2020**

(54) **SYSTEM AND COMPUTER METHOD FOR TRADING A COMMODITY WITH CARRY COSTS**

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(21) Appl. No.: **16/703,726**

(22) Filed: **Dec. 4, 2019**

Related U.S. Application Data

(60) Provisional application No. 62/775,778, filed on Dec. 5, 2018.

Publication Classification

(51) **Int. Cl.**

G06Q 40/04	(2012.01)
G06F 16/23	(2019.01)
G06Q 10/10	(2012.01)
G06Q 20/36	(2012.01)
G06Q 10/08	(2012.01)
G06Q 20/38	(2012.01)
H04L 9/06	(2006.01)
H04L 9/30	(2006.01)
G06F 16/27	(2019.01)
G06F 21/60	(2013.01)
G06Q 20/42	(2012.01)
G06Q 20/10	(2012.01)
G06Q 40/02	(2012.01)
G06Q 30/02	(2012.01)

(52) **U.S. Cl.**

CPC ***G06Q 40/04*** (2013.01); *G06Q 2220/00* (2013.01); ***G06Q 10/10*** (2013.01); ***G06Q 20/3678*** (2013.01); ***G06Q 10/083*** (2013.01); ***G06Q 20/3829*** (2013.01); ***H04L 9/0637*** (2013.01); ***H04L 9/30*** (2013.01); ***G06F 16/27*** (2019.01); ***G06F 21/602*** (2013.01); ***G06Q 20/42*** (2013.01); ***G06Q 20/108*** (2013.01); ***G06Q 40/02*** (2013.01); ***G06Q 30/0206*** (2013.01); *H04L 2209/38* (2013.01); ***G06F 16/2379*** (2019.01)

(57) **ABSTRACT**

A distributed ledger-based commodity trading method and graphical user interface (GUI) includes creating and using a smart contract that specifies variable or unknown carry costs, and covering actual carry costs with a reserve account of a cryptographic currency or cryptographic token.

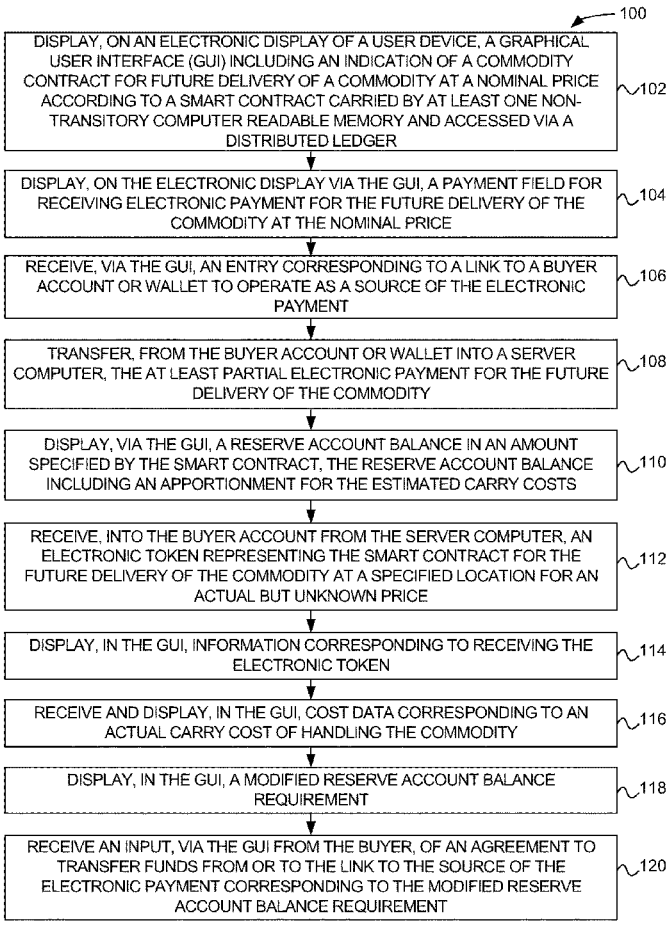


FIG. 1

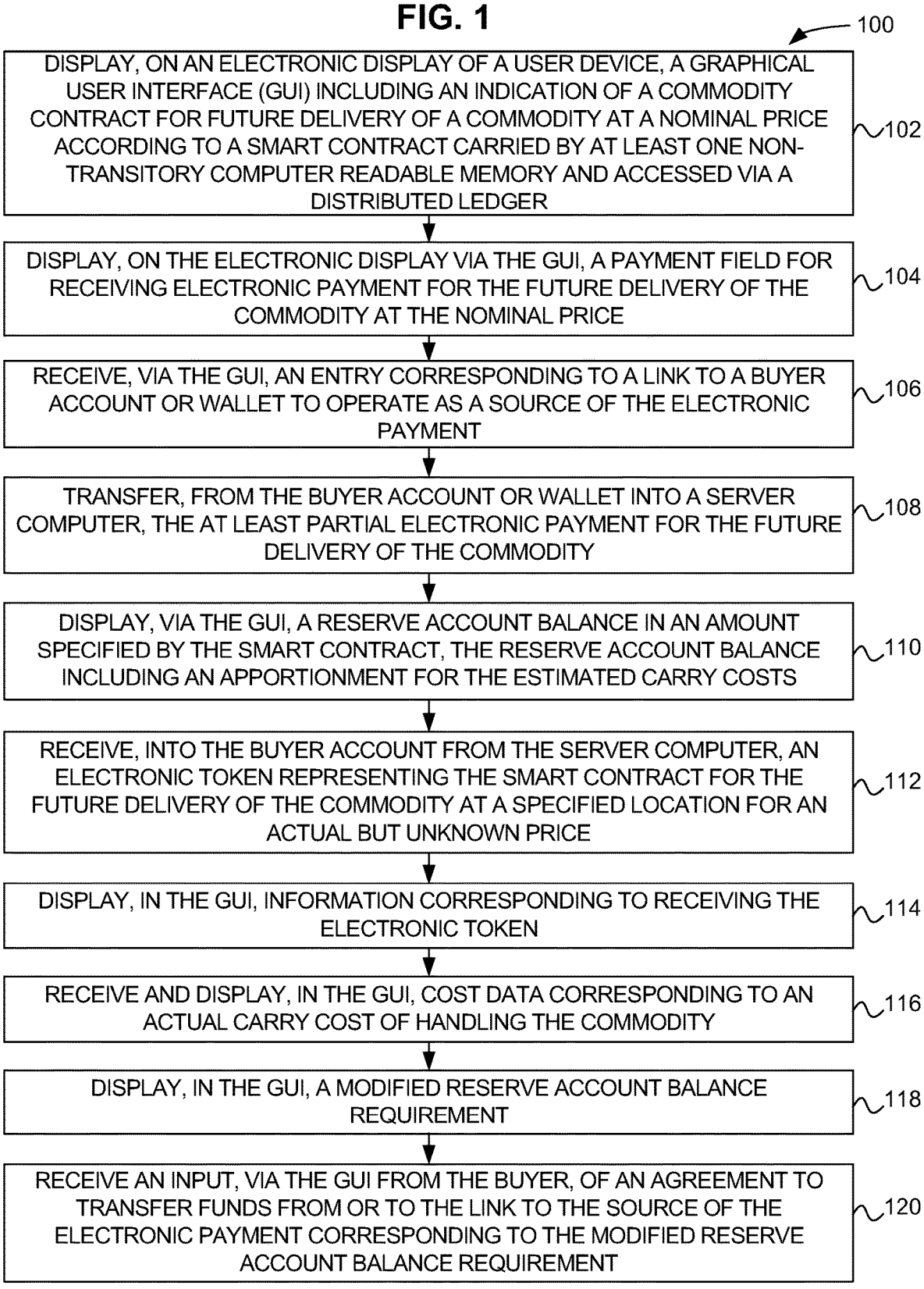

100
DISPLAY, ON AN ELECTRONIC DISPLAY OF A USER DEVICE, A GRAPHICAL USER INTERFACE (GUI) INCLUDING AN INDICATION OF A COMMODITY CONTRACT FOR FUTURE DELIVERY OF A COMMODITY AT A NOMINAL PRICE ACCORDING TO A SMART CONTRACT CARRIED BY AT LEAST ONE NON-TRANSITORY COMPUTER READABLE MEMORY AND ACCESSED VIA A DISTRIBUTED LEDGER
102
DISPLAY, ON THE ELECTRONIC DISPLAY VIA THE GUI, A PAYMENT FIELD FOR RECEIVING ELECTRONIC PAYMENT FOR THE FUTURE DELIVERY OF THE COMMODITY AT THE NOMINAL PRICE
104
RECEIVE, VIA THE GUI, AN ENTRY CORRESPONDING TO A LINK TO A BUYER ACCOUNT OR WALLET TO OPERATE AS A SOURCE OF THE ELECTRONIC PAYMENT
106
TRANSFER, FROM THE BUYER ACCOUNT OR WALLET INTO A SERVER COMPUTER, THE AT LEAST PARTIAL ELECTRONIC PAYMENT FOR THE FUTURE DELIVERY OF THE COMMODITY
108
DISPLAY, VIA THE GUI, A RESERVE ACCOUNT BALANCE IN AN AMOUNT SPECIFIED BY THE SMART CONTRACT, THE RESERVE ACCOUNT BALANCE INCLUDING AN APPORTIONMENT FOR THE ESTIMATED CARRY COSTS
110
RECEIVE, INTO THE BUYER ACCOUNT FROM THE SERVER COMPUTER, AN ELECTRONIC TOKEN REPRESENTING THE SMART CONTRACT FOR THE FUTURE DELIVERY OF THE COMMODITY AT A SPECIFIED LOCATION FOR AN ACTUAL BUT UNKNOWN PRICE
112
DISPLAY, IN THE GUI, INFORMATION CORRESPONDING TO RECEIVING THE ELECTRONIC TOKEN
114
RECEIVE AND DISPLAY, IN THE GUI, COST DATA CORRESPONDING TO AN ACTUAL CARRY COST OF HANDLING THE COMMODITY
116
DISPLAY, IN THE GUI, A MODIFIED RESERVE ACCOUNT BALANCE REQUIREMENT
118
RECEIVE AN INPUT, VIA THE GUI FROM THE BUYER, OF AN AGREEMENT TO TRANSFER FUNDS FROM OR TO THE LINK TO THE SOURCE OF THE ELECTRONIC PAYMENT CORRESPONDING TO THE MODIFIED RESERVE ACCOUNT BALANCE REQUIREMENT
120

FIG. 2

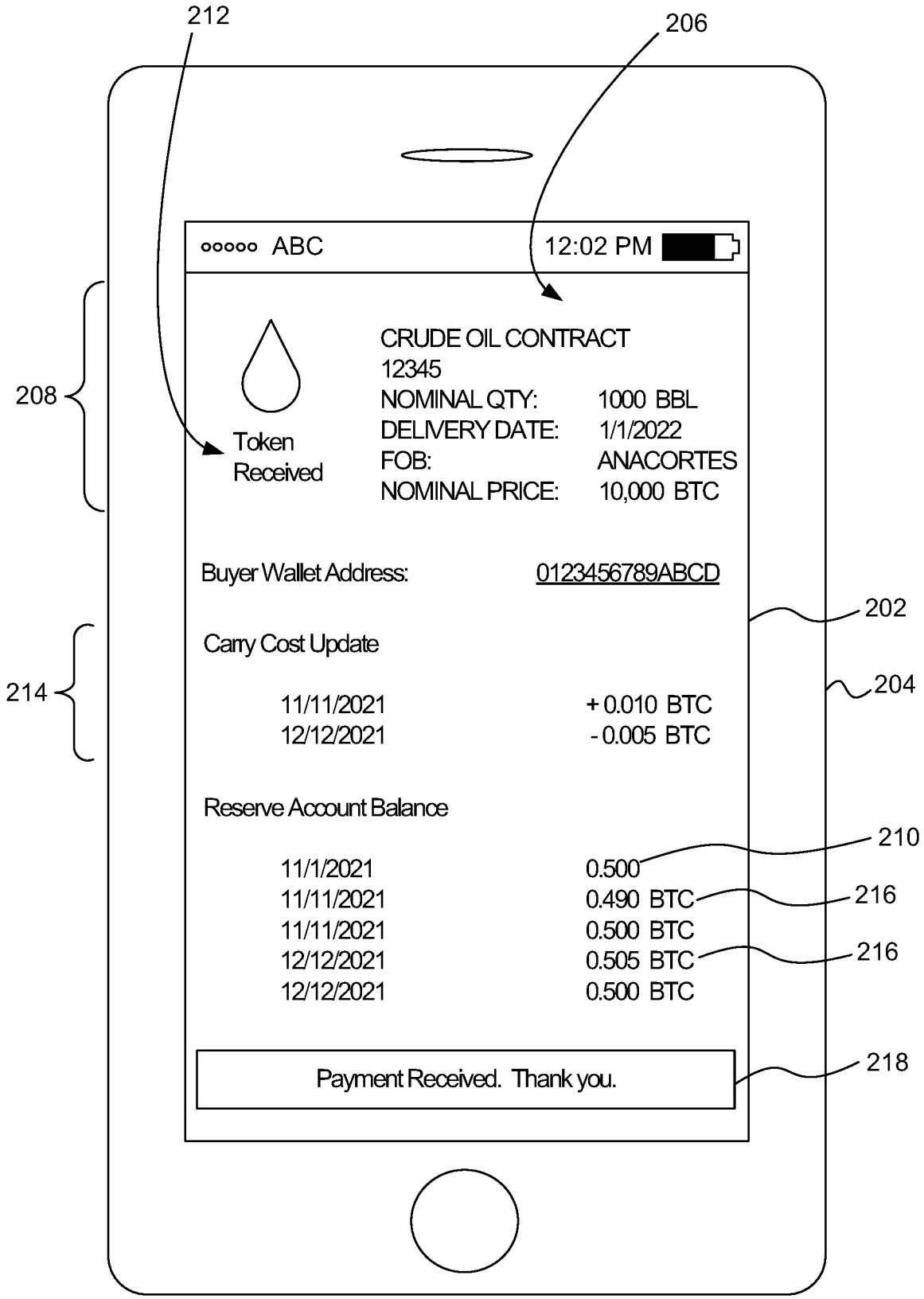
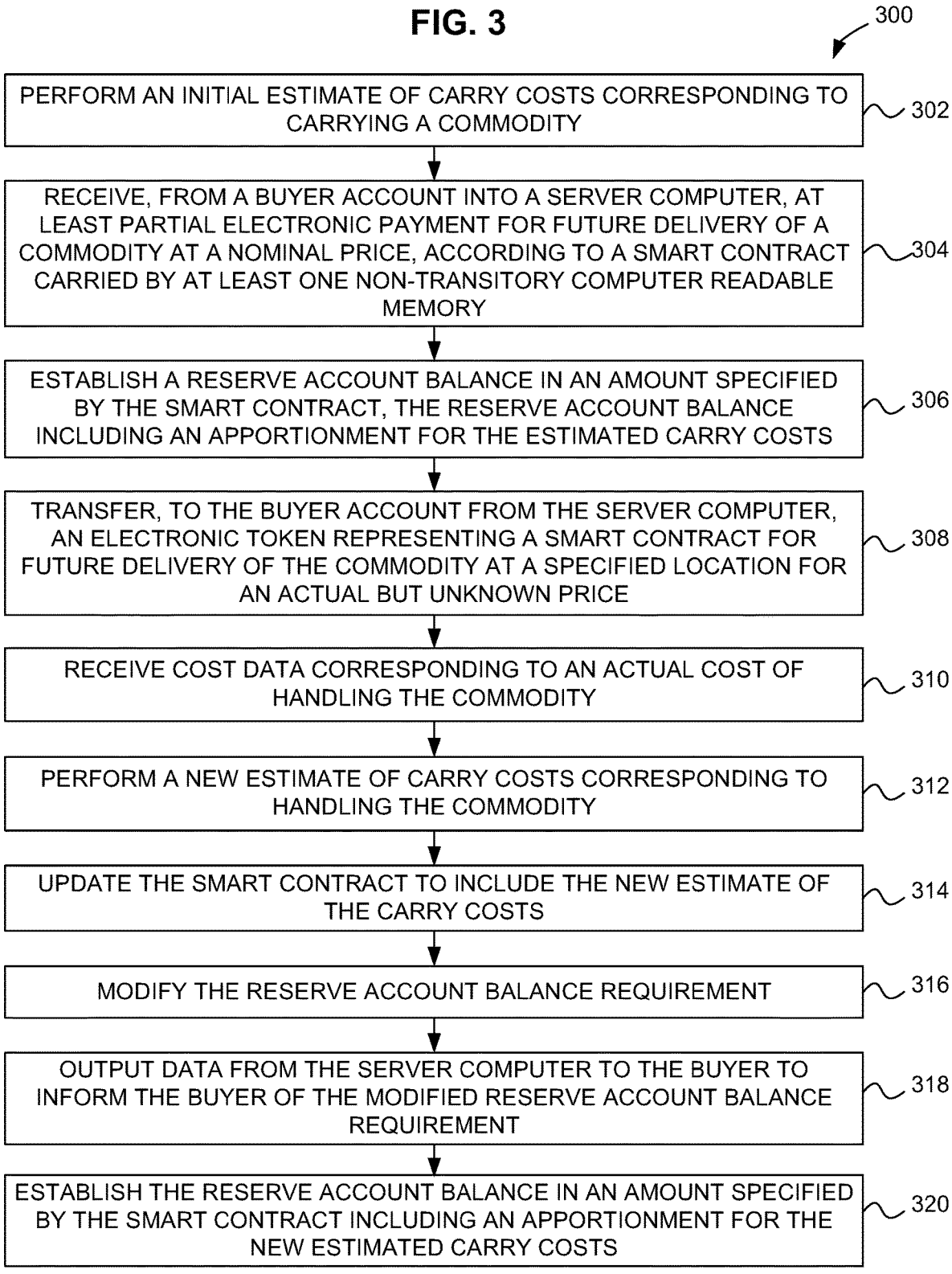

212
206
ooooo ABC
12:02 PM
208
Token Received
CRUDE OIL CONTRACT
12345
NOMINAL QTY: 1000 BBL
DELIVERY DATE: 1/1/2022
FOB: ANACORTES
NOMINAL PRICE: 10,000 BTC
Buyer Wallet Address: 0123456789ABCD
202
Carry Cost Update
214
204
11/11/2021 +0.010 BTC
12/12/2021 -0.005 BTC
Reserve Account Balance
210
11/1/2021 0.500
11/11/2021 0.490 BTC
216
11/11/2021 0.500 BTC
12/12/2021 0.505 BTC
216
12/12/2021 0.500 BTC
Payment Received. Thank you.
218

FIG. 3


300
PERFORM AN INITIAL ESTIMATE OF CARRY COSTS CORRESPONDING TO CARRYING A COMMODITY
302
RECEIVE, FROM A BUYER ACCOUNT INTO A SERVER COMPUTER, AT LEAST PARTIAL ELECTRONIC PAYMENT FOR FUTURE DELIVERY OF A COMMODITY AT A NOMINAL PRICE, ACCORDING TO A SMART CONTRACT CARRIED BY AT LEAST ONE NON-TRANSITORY COMPUTER READABLE MEMORY
304
ESTABLISH A RESERVE ACCOUNT BALANCE IN AN AMOUNT SPECIFIED BY THE SMART CONTRACT, THE RESERVE ACCOUNT BALANCE INCLUDING AN APPORTIONMENT FOR THE ESTIMATED CARRY COSTS
306
TRANSFER, TO THE BUYER ACCOUNT FROM THE SERVER COMPUTER, AN ELECTRONIC TOKEN REPRESENTING A SMART CONTRACT FOR FUTURE DELIVERY OF THE COMMODITY AT A SPECIFIED LOCATION FOR AN ACTUAL BUT UNKNOWN PRICE
308
RECEIVE COST DATA CORRESPONDING TO AN ACTUAL COST OF HANDLING THE COMMODITY
310
PERFORM A NEW ESTIMATE OF CARRY COSTS CORRESPONDING TO HANDLING THE COMMODITY
312
UPDATE THE SMART CONTRACT TO INCLUDE THE NEW ESTIMATE OF THE CARRY COSTS
314
MODIFY THE RESERVE ACCOUNT BALANCE REQUIREMENT
316
OUTPUT DATA FROM THE SERVER COMPUTER TO THE BUYER TO INFORM THE BUYER OF THE MODIFIED RESERVE ACCOUNT BALANCE REQUIREMENT
318
ESTABLISH THE RESERVE ACCOUNT BALANCE IN AN AMOUNT SPECIFIED BY THE SMART CONTRACT INCLUDING AN APPORTIONMENT FOR THE NEW ESTIMATED CARRY COSTS
320

SYSTEM AND COMPUTER METHOD FOR TRADING A COMMODITY WITH CARRY COSTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority benefit from co-pending U.S. Provisional Patent Application No. 62/775,778, entitled "SYSTEM AND COMPUTER METHOD FOR TRADING A COMMODITY WITH CARRY COSTS," filed Dec. 5, 2018 (docket number 3058-005-02), which application, to the extent not inconsistent with the disclosure herein, is incorporated herein by reference.

SUMMARY

[0002] According to an embodiment, a computer method and graphical user interface (GUI) for executing a smart commodity contract includes displaying, on an electronic display of a user device, a GUI including an indication of a commodity contract for future delivery of a commodity at a nominal price, the nominal price including estimated carry costs, according to a smart contract carried by at least one non-transitory computer readable memory and accessed via a distributed ledger. The computer method and GUI for executing a smart commodity contract includes displaying, on the electronic display via the GUI, a payment field for receiving electronic payment for the future delivery of the commodity at the nominal price; and receiving, via the GUI, an entry corresponding to a link to a buyer account or wallet to operate as a source of the electronic payment. The computer method and GUI for executing a smart commodity contract includes transferring, from the buyer account or wallet into a server computer, the at least partial electronic payment for the future delivery of the commodity; and displaying, via the GUI, a reserve account balance in an amount specified by the smart contract, the reserve account balance including an apportionment for the estimated carry costs. The computer method and GUI for executing a smart commodity contract includes receiving, into the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price; displaying, in the GUI, information corresponding to receiving the electronic token; and receiving and displaying, in the GUI, cost data corresponding to an actual carry cost of handling the commodity. The computer method and GUI for executing a smart commodity contract includes displaying, in the GUI, a modified reserve account balance requirement; receiving an input, via the GUI from the buyer, of an agreement to transfer funds from or to the link to the source of the electronic payment corresponding to the modified reserve account balance requirement. The computer method and GUI for executing a smart commodity contract includes displaying, in the GUI, an acknowledgement of electronic payment receipt.

[0003] According to an embodiment, a computer method for executing a smart commodity contract includes receiving, from a buyer account into a server computer, at least partial electronic payment for future delivery of a commodity at a nominal price, according to a smart contract carried by at least one non-transitory computer readable memory. The smart contract specifies the nominal price including estimated carry costs corresponding to delivering the commodity. The computer method includes establishing, and displaying via a GUI, a reserve account balance in an amount specified by the smart contract. The reserve account balance includes an apportionment for the estimated carry costs. The computer method includes transferring, to the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price, and receiving cost data corresponding to an actual cost of handling the commodity.

[0004] The computer method includes performing a new estimate of carry costs corresponding to handling the commodity, updating the smart contract to include the new estimate of the carry costs, modifying the reserve account balance requirement, and outputting data from the server computer to the buyer to inform the buyer of the modified reserve account balance requirement.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. **1** is a flow chart of a computer method and graphical user interface (GUI) for executing a smart commodity contract, according to an embodiment.

[0006] FIG. **2** is a diagram of the GUI for executing a smart commodity contract of FIG. **1**, according to an embodiment.

[0007] FIG. **3** is a flow chart of a computer method for executing a smart commodity contract, according to an embodiment.

DETAILED DESCRIPTION

[0008] In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. Other embodiments may be used and/or other changes may be made without departing from the spirit or scope of the disclosure.

[0009] FIG. **1** is a flow chart of a computer method **100** and graphical user interface (GUI) **206** for executing a smart commodity contract, according to an embodiment. FIG. **2** is a diagram of the GUI **206** for executing a smart commodity contract of FIG. **1**, according to an embodiment.

[0010] According to an embodiment, referring to FIGS. **1** and **2**, a computer method and graphical user interface (GUI) **100** for executing a smart commodity contract includes, in step **102**, displaying, on an electronic display **202** of a user device **204**, a GUI **206** including an indication **208** of a commodity contract for future delivery of a commodity at a nominal price, the nominal price including estimated carry costs, according to a smart contract carried by at least one non-transitory computer readable memory and accessed via a distributed ledger. Step **104** includes displaying, on the electronic display **202** via the GUI **206**, a payment field (not shown) for receiving electronic payment for the future delivery of the commodity at the nominal price. Step **106** includes receiving, via the GUI **206**, an entry corresponding to a link to a buyer account or wallet to operate as a source of the electronic payment. Step **108** includes transferring, from the buyer account or wallet into a server computer, the at least partial electronic payment for the future delivery of the commodity. Step **110** includes displaying, via the GUI **206**, a reserve account balance **210** in an amount specified

by the smart contract, the reserve account balance **210** including an apportionment for the estimated carry costs. Step **112** includes receiving, into the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price. Step **114** includes displaying, in the GUI **206**, information **212** corresponding to receiving the electronic token in step **112**. Step **116** includes receiving and displaying, in the GUI **206**, cost data **214** corresponding to an actual carry cost of handling the commodity. Step **118** includes displaying, in the GUI **206**, a modified reserve account balance requirement **216**. Step **120** includes receiving an input, via the GUI **206** from the buyer, of an agreement to transfer funds from or to the link to the source of the electronic payment corresponding to the modified reserve account balance requirement **216**. The computer method **100** and the GUI **206** for executing a smart commodity contract includes displaying, in the GUI **206**, an acknowledgement **218** of electronic payment receipt.

[0011] According to an embodiment, the commodity includes a physical commodity. According to an embodiment, the carry costs include a physical commodity transportation cost. In one embodiment, the carry costs include a physical commodity storage cost. In another embodiment, the carry costs include a physical commodity quantity reduction related to loss to evaporation, sublimation, leakage, spillage, compression, temperature change, or chemical reaction (such as oxidation).

[0012] According to an embodiment, the computer method **100** and GUI **206** for executing a smart commodity contract may further include (not shown) receiving and displaying, in the GUI **206** from the server computer, a new estimate of carry costs corresponding to handling the commodity. According to an embodiment, the computer method **100** and GUI **206** for executing a smart commodity contract may further include (not illustrated) displaying, in the GUI **206**, information regarding updating the smart contract to include the new estimate of the carry costs. In an embodiment, receiving the new estimate of carry costs includes receiving an update of the prior estimate to include actual carry costs.

[0013] According to an embodiment, the computer method **100** and GUI **206** for executing a smart commodity contract further include establishing and displaying, via the GUI **206**, information corresponding to the reserve account balance **210** in an amount specified by the smart contract including an apportionment for the new estimated carry costs in step **110**.

[0014] According to an embodiment, the establishing and displaying, via the GUI **206**, of the information corresponding to establishing the reserve account balance **210**, in step **110**, includes (not separately illustrated) displaying a notice of automatic transferring of electronic funds to or from the reserve account. The receiving of the input, via the GUI **206** from the buyer, of the agreement to transfer the funds from or to the link to the source of the at least partial electronic payment, in step **120**, may include receiving a pre-authorization agreement or acknowledgement at a time prior to the transfer.

[0015] According to an embodiment, establishing and displaying, via the GUI **206**, the reserve account balance **210**, in step **110**, includes (not separately illustrated) receiving a transfer of electronic funds from the buyer wallet into the server computer. According to another embodiment, establishing and displaying, via the GUI **206**, the reserve account balance **210**, in step **110**, includes (not separately illustrated) receiving an electronic withdrawal of funds from the buyer wallet, and transferring the withdrawn funds to a buyer trust account as a blockchain currency transaction.

[0016] According to an embodiment, the computer method **100** and GUI **206** for executing a smart commodity contract further performing, with the server computer, an initial estimate of carry costs corresponding to carrying the commodity. In an embodiment, performing the initial estimate of carry costs corresponding to carrying the commodity includes performing an initial estimate of carry costs corresponding to at least one of handling, storing, analyzing, certifying, exchanging, swapping, capitalizing, franchising, optioning, delivering, sublimating, melting, freezing, cooling, heating, hardening, boiling, transporting, pumping, producing, injecting, evacuating, spewing, and showing a physical commodity.

[0017] According to an embodiment, the smart contract is carried by a distributed ledger carried by a plurality of non-transitory computer readable media. The distributed ledger may include a blockchain. In an embodiment, the blockchain includes a public blockchain. In another embodiment, the blockchain includes a private blockchain. Additionally and/or alternatively, the blockchain includes a permissioned blockchain.

[0018] According to an alternate embodiment, the smart contract is added to the distributed ledger as a transaction. In an embodiment, adding the smart contract to the distributed ledger includes encrypting the smart contract. In another embodiment, adding the smart contract to the distributed ledger includes storing the smart contract at one or more cloud locations, encrypting the one or more cloud locations, and entering the encrypted one or more cloud locations onto the distributed ledger as a transaction.

[0019] FIG. **3** is a flow chart of a computer method **300** for executing a smart commodity contract, according to an embodiment.

[0020] According to an embodiment, the computer method **300** for executing a smart commodity contract includes, in step **304**, receiving, from a buyer account into a server computer, at least partial electronic payment for future delivery of a commodity at a nominal price, according to a smart contract carried by at least one non-transitory computer readable memory. In an embodiment, the smart contract specifies the nominal price including estimated carry costs corresponding to delivering the commodity. For example, delivering the commodity may include handling, storing, analyzing, certifying, exchanging, swapping, capitalizing, franchising, optioning, delivering, sublimating, melting, freezing, cooling, heating, hardening, boiling, transporting, pumping, producing, injecting, evacuating, spewing, or showing a physical commodity. Step **306** includes establishing a reserve account balance in an amount specified by the smart contract, the reserve account balance including an apportionment for the estimated carry costs. Step **308** includes transferring, to the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price. Step **310** includes receiving cost data corresponding to an actual cost of handling the commodity. Step **312** includes performing a new estimate of carry costs (e.g., and/or revising the estimated carry costs) corresponding to handling the commod-

ity. Step **314** includes updating the smart contract to include the new estimate of the carry costs. Step **316** includes modifying the reserve account balance requirement. Step **318** includes outputting data from the server computer to the buyer to inform the buyer of the modified reserve account balance requirement.

[0021] According to an embodiment, the commodity may include a physical commodity.

[0022] According to an embodiment, in step **312**, performing a new estimate of carry costs includes updating the prior estimate to include actual carry costs.

[0023] According to an embodiment, the computer method **300** further includes, in step **320**, establishing the reserve account balance in an amount specified by the smart contract including an apportionment for the new estimated carry costs. In one embodiment, establishing the reserve account balance includes automatically transferring electronic funds to or from the reserve account. In another embodiment, establishing the reserve account balance includes receiving a transfer of electronic funds from the buyer into the server computer. In another embodiment, establishing the reserve account balance includes receiving an electronic withdrawal of funds from the buyer, and transferring the withdrawn funds to a buyer account as a blockchain currency transaction. In another embodiment, establishing the reserve account balance includes issuing or receiving a transaction including a transfer of a distributed ledger hold value as a contractual encumbrance on a balance held at a specified exchange address. In another embodiment, establishing the reserve account balance includes establishing a reserve account balance including an apportionment for the estimated carry costs.

[0024] According to an embodiment, the computer method **300** further includes, in step **302**, performing an initial estimate of carry costs corresponding to carrying the commodity. In an embodiment, performing the initial estimate of carry costs corresponding to carrying the commodity includes estimating carry costs corresponding to carry costs of a physical commodity. In another embodiment, performing an initial estimate of carry costs corresponding to carrying the commodity includes performing an initial estimate of carry costs corresponding to processing a physical commodity. In another embodiment, performing an initial estimate of carry costs corresponding to carrying the commodity includes performing an initial estimate of carry costs corresponding to at least one of handling, storing, analyzing, certifying, exchanging, swapping, capitalizing, franchising, optioning, delivering, sublimating, melting, freezing, cooling, heating, hardening, boiling, transporting, pumping, producing, injecting, evacuating, spewing, and showing a physical commodity.

[0025] According to an embodiment, in step **304**, receiving, from the buyer account into the server computer, at least partial electronic payment for future delivery of the commodity at the nominal price according to the smart contract includes receiving a distributed ledger source address, an amount transferred, and a distributed ledger transfer history or transfer histories of the amount transferred. In an embodiment, receiving, from the buyer account into the server computer, at least partial electronic payment for future delivery of the commodity at the nominal price according to the smart contract further includes receiving a public key and a defined but anonymous identity associated with the distributed ledger transfer history. In an embodiment, receiving the public key and the known but anonymous identity associated with the distributed ledger transfer history further includes reporting aggregate transactions to/for each anonymous identity in a plurality of anonymous identities.

[0026] According to an embodiment, in step **304**, receiving, from the buyer account into the server computer, at least partial electronic payment for future delivery of the commodity at the nominal price according to the smart contract includes receiving at least partial electronic payment for future delivery of a physical commodity at the nominal price according to a smart contract carried by a distributed ledger.

[0027] According to an embodiment, the nominal price includes estimated carry costs corresponding to carry costs of a physical commodity.

[0028] According to an embodiment, in step **308**, transferring, to the buyer account from the server computer, an electronic token representing a smart contract for future delivery of the commodity at a specified location for an actual but unknown price includes transferring, to the buyer account from the server computer, an electronic bearer token representing a smart contract for future delivery of a physical commodity at a specified location for an actual but unknown price.

[0029] According to an embodiment, in step **312**, performing a new estimate of carry costs corresponding to handling the commodity includes revising the estimated total carry costs to include changes in market pricing of the carry costs.

[0030] According to an embodiment, the smart contract is carried by a distributed ledger carried by a plurality of non-transitory computer readable media. In an embodiment, the distributed ledger includes a blockchain. In one embodiment, the blockchain includes a public blockchain. In another embodiment, the blockchain includes a private blockchain. In another embodiment, the blockchain includes a permissioned blockchain. In an embodiment, the smart contract is added to the distributed ledger as a transaction. In one embodiment, adding the smart contract to the distributed ledger includes encrypting the smart contract. In another embodiment, adding the smart contract to the distributed ledger includes storing the smart contract at one or more cloud locations, encrypting the one or more cloud locations, and entering the encrypted one or more cloud locations onto the distributed ledger as a transaction.

[0031] While various aspects and embodiments have been disclosed herein, other aspects and embodiments are contemplated. The various aspects and embodiments disclosed herein are for purposes of illustration and are not intended to be limiting, with the true scope and spirit being indicated by the following claims.

What is claimed is:

1. A computer method and graphical user interface (GUI) for executing a smart commodity contract, comprising:

displaying, on an electronic display of a user device, a GUI including an indication of a commodity contract for future delivery of a commodity at a nominal price, the nominal price including estimated carry costs, according to a smart contract carried by at least one non-transitory computer readable memory and accessed via a distributed ledger;

displaying, on the electronic display via the GUI, a payment field for receiving electronic payment for the future delivery of the commodity at the nominal price;

receiving, via the GUI, an entry corresponding to a link to a buyer account or wallet to operate as a source of the electronic payment;

transferring, from the buyer account or wallet into a server computer, the at least partial electronic payment for the future delivery of the commodity;

displaying, via the GUI, a reserve account balance in an amount specified by the smart contract, the reserve account balance including an apportionment for the estimated carry costs;

receiving, into the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price;

displaying, in the GUI, information corresponding to receiving the electronic token;

receiving and displaying, in the GUI, cost data corresponding to an actual carry cost of handling the commodity;

displaying, in the GUI, a modified reserve account balance requirement; and

receiving an input, via the GUI from the buyer, of an agreement to transfer funds from or to the link to the source of the electronic payment corresponding to the modified reserve account balance requirement.

2. The computer method and GUI for executing a smart commodity contract of claim **1**, wherein the commodity comprises a physical commodity.

3. The computer method and GUI for executing a smart commodity contract of claim **2**, wherein the carry costs include a physical commodity transportation cost.

4. The computer method and GUI for executing a smart commodity contract of claim **2**, wherein the carry costs include a physical commodity storage cost.

5. The computer method and GUI for executing a smart commodity contract of claim **2**, wherein the carry costs include a physical commodity quantity reduction related to loss to evaporation, sublimation, leakage, spillage, compression, temperature change, or chemical reaction.

6. The computer method and GUI for executing a smart commodity contract of claim **1**, further comprising receiving and displaying, in the GUI from the server computer, a new estimate of carry costs corresponding to handling the commodity.

7. The computer method and GUI for executing a smart commodity contract of claim **6**, further comprising displaying, in the GUI, information regarding updating the smart contract to include the new estimate of the carry costs.

8. The computer method and GUI for executing a smart commodity contract of claim **6**, wherein receiving the new estimate of carry costs includes receiving an update of the prior estimate to include actual carry costs.

9. The computer method and GUI for executing a smart commodity contract of claim **1**, further comprising:

establishing, and displaying via the GUI, information corresponding to the reserve account balance in an amount specified by the smart contract including an apportionment for the new estimated carry costs.

10. The computer method and GUI for executing a smart commodity contract of claim **9**, wherein establishing and displaying, via the GUI, information corresponding to the reserve account balance comprises:

displaying a notice of automatic transferring of electronic funds to or from the reserve account; and

wherein receiving the input, via the GUI from the buyer, of the agreement to transfer the funds from or to the link to the source of the at least partial electronic payment includes receiving a pre-authorization agreement or acknowledgement at a time prior to the transfer.

11. The computer method and GUI for executing a smart commodity contract of claim **9**, wherein establishing and displaying, via the GUI, information corresponding to the reserve account balance comprises:

receiving a transfer of electronic funds from the buyer wallet into the server computer.

12. The computer method and GUI for executing a smart commodity contract of claim **9**, wherein establishing and displaying, via the GUI, information corresponding to the reserve account balance comprises:

receiving an electronic withdrawal of funds from the buyer wallet; and

transferring the withdrawn funds to a buyer trust account as a blockchain currency transaction.

13. The computer method and GUI for executing a smart commodity contract of claim **1**, further comprising:

performing, with the server computer, an initial estimate of carry costs corresponding to carrying the commodity.

14. The computer method and GUI for executing a smart commodity contract of claim **13**, wherein performing the initial estimate of carry costs corresponding to carrying the commodity comprises:

performing an initial estimate of carry costs corresponding to at least one of handling, storing, analyzing, certifying, exchanging, swapping, capitalizing, franchising, optioning, delivering, sublimating, melting, freezing, cooling, heating, hardening, boiling, transporting, pumping, producing, injecting, evacuating, spewing, and showing a physical commodity.

15. The computer method and GUI for executing a smart commodity contract of claim **1**, wherein the smart contract is carried by a distributed ledger carried by a plurality of non-transitory computer readable media.

16. The computer method and GUI for executing a smart commodity contract of claim **15**, wherein the distributed ledger comprises a blockchain.

17. The computer method and GUI for executing a smart commodity contract of claim **16**, wherein the blockchain comprises a public blockchain.

18. The computer method and GUI for executing a smart commodity contract of claim **16**, wherein the blockchain comprises a private blockchain.

19. The computer method and GUI for executing a smart commodity contract of claim **16**, wherein the blockchain comprises a permissioned blockchain.

20. The computer method and GUI for executing a smart commodity contract of claim **15**, wherein the smart contract is added to the distributed ledger as a transaction.

21. The computer method and GUI for executing a smart commodity contract of claim **20**, wherein adding the smart contract to the distributed ledger comprises encrypting the smart contract.

22. The computer method and GUI for executing a smart commodity contract of claim **20**, wherein adding the smart contract to the distributed ledger comprises:

storing the smart contract at one or more cloud locations;

encrypting the one or more cloud locations; and

entering the encrypted one or more cloud locations onto the distributed ledger as a transaction.

23. A computer method for executing a smart commodity contract, comprising:

receiving, from a buyer account into a server computer, at least partial electronic payment for future delivery of a commodity at a nominal price, according to a smart contract carried by at least one non-transitory computer readable memory;

wherein the smart contract specifies the nominal price including estimated carry costs corresponding to delivering the commodity;

establishing a reserve account balance in an amount specified by the smart contract, the reserve account balance including an apportionment for the estimated carry costs;

transferring, to the buyer account from the server computer, an electronic token representing the smart contract for future delivery of the commodity at a specified location for an actual but unknown price;

receiving cost data corresponding to an actual cost of handling the commodity;

performing a new estimate of carry costs corresponding to handling the commodity;

updating the smart contract to include the new estimate of the carry costs;

modifying the reserve account balance requirement; and

outputting data from the server computer to the buyer to inform the buyer of the modified reserve account balance requirement.

24. The computer method for executing a smart commodity contract of claim **23**, wherein the commodity comprises a physical commodity.

25. The computer method for executing a smart commodity contract of claim **23**, wherein performing a new estimate of carry costs includes updating the prior estimate to include actual carry costs.

26. The computer method for executing a smart commodity contract of claim **23**, further comprising:

establishing the reserve account balance in an amount specified by the smart contract including an apportionment for the new estimated carry costs.

27. The computer method for executing a smart commodity contract of claim **26**, wherein establishing the reserve account balance comprises:

automatically transferring electronic funds to or from the reserve account.

28. The computer method for executing a smart commodity contract of claim **26**, wherein establishing the reserve account balance comprises:

receiving a transfer of electronic funds from the buyer into the server computer.

29. The computer method for executing a smart commodity contract of claim **26**, wherein establishing the reserve account balance comprises:

receiving an electronic withdrawal of funds from the buyer; and

transferring the withdrawn funds to a buyer account as a blockchain currency transaction.

30. The computer method for executing a smart commodity contract of claim **26**, wherein establishing the reserve account balance comprises:

issuing or receiving a transaction including a transfer of a distributed ledger hold value as a contractual encumbrance on a balance held at a specified exchange address.

31. The computer method for executing a smart commodity contract of claim **26**, wherein establishing the reserve account balance comprises:

establishing a reserve account balance including an apportionment for the estimated carry costs.

32. The computer method for executing a smart commodity contract of claim **23**, further comprising:

performing an initial estimate of carry costs corresponding to carrying the commodity.

33. The computer method for executing a smart commodity contract of claim **32**, wherein performing the initial estimate of carry costs corresponding to carrying the commodity includes estimating carry costs corresponding to carry costs of a physical commodity.

34. The computer method for executing a smart commodity contract of claim **32**, wherein performing an initial estimate of carry costs corresponding to carrying the commodity comprises:

performing an initial estimate of carry costs corresponding to processing a physical commodity.

35. The computer method for executing a smart commodity contract of claim **32**, wherein performing an initial estimate of carry costs corresponding to carrying the commodity comprises:

performing an initial estimate of carry costs corresponding to at least one of handling, storing, analyzing, certifying, exchanging, swapping, capitalizing, franchising, optioning, delivering, sublimating, melting, freezing, cooling, heating, hardening, boiling, transporting, pumping, producing, injecting, evacuating, spewing, and showing a physical commodity.

36. The computer method for executing a smart commodity contract of claim **23**, wherein receiving, from the buyer account into the server computer, at least partial electronic payment for future delivery of the commodity at the nominal price according to the smart contract comprises:

receiving a distributed ledger source address, an amount transferred, and a distributed ledger transfer history or transfer histories of the amount transferred.

37. The computer method for executing a smart commodity contract of claim **36**, further comprising:

receiving a public key and a defined but anonymous identity associated with the distributed ledger transfer history.

38. The computer method for executing a smart commodity contract of claim **37**, wherein:

receiving the public key and the anonymous identity includes reporting aggregate transactions to/for each anonymous identity in a plurality of anonymous identities.

39. The computer method for executing a smart commodity contract of claim **23**, wherein receiving, from the buyer account into the server computer, at least partial electronic payment for future delivery of the commodity at the nominal price according to the smart contract comprises:

receiving at least partial electronic payment for future delivery of a physical commodity at the nominal price according to a smart contract carried by a distributed ledger.

40. The computer method for executing a smart commodity contract of claim **23**, wherein the nominal price includes estimated carry costs corresponding to carry costs of a physical commodity.

41. The computer method for executing a smart commodity contract of claim **23**, wherein transferring, to the buyer account from the server computer, an electronic token representing a smart contract for future delivery of the commodity at a specified location for an actual but unknown price comprises:

transferring, to the buyer account from the server computer, an electronic bearer token representing a smart contract for future delivery of a physical commodity at a specified location for an actual but unknown price;

42. The computer method for executing a smart commodity contract of claim **23**, wherein performing a new estimate of carry costs corresponding to handling the commodity comprises:

revising the estimated total carry costs to include changes in market pricing of the carry costs.

43. The computer method for executing a smart commodity contract of claim **23**, wherein the smart contract is carried by a distributed ledger carried by a plurality of non-transitory computer readable media.

44. The computer method for executing a smart commodity contract of claim **43**, wherein the distributed ledger comprises a blockchain.

45. The computer method for executing a smart commodity contract of claim **44**, wherein the blockchain comprises a public blockchain.

46. The computer method for executing a smart commodity contract of claim **44**, wherein the blockchain comprises a private blockchain.

47. The computer method for executing a smart commodity contract of claim **44**, wherein the blockchain comprises a permissioned blockchain.

48. The computer method for executing a smart commodity contract of claim **43**, wherein the smart contract is added to the distributed ledger as a transaction.

49. The computer method for executing a smart commodity contract of claim **48**, wherein adding the smart contract to the distributed ledger comprises encrypting the smart contract.

50. The computer method for executing a smart commodity contract of claim **48**, wherein adding the smart contract to the distributed ledger comprises:

storing the smart contract at one or more cloud locations;

encrypting the one or more cloud locations; and

entering the encrypted one or more cloud locations onto the distributed ledger as a transaction.

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