

WHAT IS CLAIMED IS:

1. A method comprising:
communicating data from a browser to an electronic shopping cart during a
5 transaction;
receiving user-authenticating data from a user interface of the browser;
decrypting secure user data stored on a computing device executing at least part of the
browser;
authenticating a user based on the user-authenticating data and the decrypted secure
10 user data;
in response to authenticating the user, transmitting an indication of a payment from
the browser to the electronic shopping cart;
processing the transaction after transmitting the indication of payment; and
recording the transaction in a blockchain stored on the computing device.
- 15 2. The method of claim 1, wherein communicating from the browser to the
electronic shopping cart comprises:
initiating the transaction using a protocol-based handshake that identifies the browser
and the electronic shopping cart.
3. The method of claim 1, further comprising storing, by the browser, the secure
20 user data on the computing device encrypted by the user-authenticating data.
4. The method of claim 3, wherein the secure user data is stored in a block of the
blockchain.
5. The method of claim 1, wherein recording the transaction in the blockchain
comprises:
25 generating a block of the blockchain, including an identification of the transaction
and an identification of the electronic shopping cart; and
encrypting the block using a key associated with the browser.

6. The method of claim 1, wherein receiving the user-authenticating data comprises:

receiving biometric data and a personal identification number (PIN) from a human user via the user interface.

5 7. The method of claim 1, wherein processing the transaction comprises: transmitting an identification of the transaction and at least a portion of the secure user data to a financial entity.

8. The method of claim 1, wherein transmitting the indication of the payment includes causing to be displayed on the computing device an interface to allow the user to
10 select a payment option while omitting entry of user account information into the electronic shopping cart.

9. The method of claim 1, wherein recording the transaction in the blockchain comprises:
recording the transaction in a side chain of the blockchain during the transaction; and
15 adding the side chain to the blockchain in response to a completion of the transaction.

10. A non-transitory machine-readable medium having stored thereon machine-readable instructions executable to cause a machine to perform operations comprising:
identifying a browser is associated with an electronic shopping cart during a transaction;
20 receiving user-authenticating data from the browser; authenticating a user, including decrypting secure user data with the user-authenticating data;
in response to authenticating the user, transmitting an indication of payment from the browser to the electronic shopping cart; and
recording the transaction in a blockchain.

25 11. The non-transitory machine-readable medium of claim 10, wherein the operations further comprise:
processing the transaction after transmitting the indication of payment.

12. The non-transitory machine-readable medium of claim 10, wherein identifying the browser comprises:

initiating the transaction using a protocol-based handshake between the browser and the electronic shopping cart.

5 13. The non-transitory machine-readable medium of claim 10, wherein the operations further comprise:

storing the secure user data on the computing device and encrypted by the user-authenticating data.

10 14. The non-transitory machine-readable medium of claim 13, wherein the secure user data is stored in a block of the blockchain.

15 15. The non-transitory machine-readable medium of claim 10, wherein recording the transaction in the blockchain comprises the operations:

generating a block of the blockchain, including an identification of the transaction and an identification of the electronic shopping cart; and

encrypting the block using a key associated with the browser.

16. The non-transitory machine-readable medium of claim 10, wherein receiving user-authenticating data comprises the operations:

receiving biometric data and a personal identification number (PIN) from a human user via the user interface.

20 17. A system, comprising:
a non-transitory memory; and

one or more hardware processors coupled to the non-transitory memory and configured to read instructions from the non-transitory memory to cause the system to perform operations comprising:

25 performing a handshake between a browser and an electronic shopping cart during an electronic transaction;

authenticating a user in response to decrypting secure user data with received user-authenticating data;

after authenticating the user, transmitting an indication of payment from the browser to the electronic shopping cart; and
recording the transaction in a blockchain stored on a computing device executing at least part of the browser.

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18. The system of claim 17, wherein authenticating the user comprises the operations:

receiving biometric data and a personal identification number (PIN) from a human user via the user interface.

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19. The system of claim 17, wherein recording the transaction in the blockchain comprises the operations:

generating a block of the blockchain, including an identification of the transaction and an identification of the electronic shopping cart; and
encrypting the block using a key associated with the browser.

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20. The system of claim 17, wherein the secure user data is stored in a block of the blockchain.