Ethereum (ETH), the third-party service provider may receive 1 ETH. The third-party service provider may then determine an original transaction amount in fiat currency (e.g., $170) deduct a fee from the original transaction amount and transmit the deducted transaction amount (e.g., such as $168 if there is a $2 fee) in fiat currency to transport computer 130. Transport computer 130 may then transmit the transaction amount in fiat currency ($168) to the resource provider.

[0109] In some embodiments where a user may conduct the transaction by transmitting a cryptocurrency transaction payment greater than the transaction amount provided by the resource provider, the blockchain network will transmit the difference back to the user. For example, if a user has 1 BTC and chooses to conduct a transaction with a resource provider for 0.25 BTC, the resource provider will receive 0.25 BTC and the remaining 0.75BTC will be transmitted to another cryptocurrency address of the user.

[0110] As discussed above, the transaction processing system may utilize a blockchain network 160 comprising a blockchain. FIG. 5 shows block entries of an exemplary blockchain within the blockchain network 160, in accordance with one embodiment of the invention.

[0111] In particular, FIG. 5 shows a blockchain comprising block entries for at least a block A, a block B, and a block C. The blockchain may also include additional block entries before a block A and/or after a block C, which are not depicted in the figure. For example, the blockchain can include block entries for a block D, a block E, a block F, etc..

[0112] Each block entry may comprise a header, a digital signature, a nonce, and information about a set of transactions. In some embodiments, each block entry may additionally include information from a previous block entry and/or be appended to a hash of a previous block entry, such that each block entry is connected with a plurality of previous block entries.

[0113] Referring to block A, header 501 may include a hash value that is unique to the block A, such that neither block B nor block C share a same header as block A. In some embodiments, header 501 include a hash of information from block A, information from a previous block (e.g., a hash of the previous block), and/or any other suitable information (e.g., such as a timestamp, a Merkle tree root, etc.).