

## UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

Judge Berman

GM NETWORK LIMITED and  
NET TRANSACTIONS LIMITED,

Plaintiffs,

SUMMONS IN A CIVIL ACTION

CASE NUMBER:

v.

E-GOLD LTD., GOLD & SILVER RESERVE INC., DIGIGOLD LTD.,  
DOUGLAS JACKSON, BARRY K. DOWNEY, THE JACKSON FAMILY  
TRUST, THE DOWNEY FAMILY TRUST, BAXTER, BAKER, SIDLE, CONN.  
& JONES, P.A., HILDEBERTO S. DE FRIAS, MICHAEL J. MELLO and  
DOES 1-10, inclusive,

Defendants.

01 CV 9621

TO: (NAME AND ADDRESS OF DEFENDANTS)  
(see attached list of names and addresses)

YOU ARE HEREBY SUMMONED and required to file with the Clerk of this Court and serve upon

PLAINTIFFS' ATTORNEY (NAME AND ADDRESS)

Jonathan A. Marshall, Esq.  
PENNIE & EDMONDS LLP  
1155 Avenue of the Americas  
New York, NY 10036an answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the day of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in the complaint.

JAMES M. PARKISON

CLERK

DATE

OCT 31 2001

BY DEPUTY CLERK

**RETURN OF SERVICE**

Service of the Summons and Complaint was made by me:

DATE

NAME OF SERVER

TITLE

*Check one box below to indicate appropriate method of service*

- ☐ Served personally upon the defendant. Place where served: \_\_\_\_\_
- ☐ Left copies thereof at the defendant's dwelling house or usual place of abode with a person of suitable age and discretion then residing therein.  
Name of person with whom the summons and complaint were left: \_\_\_\_\_
- ☐ Returned unexecuted: \_\_\_\_\_
- ☐ Other (specify): \_\_\_\_\_

**STATEMENT OF SERVICE FEES**

TRAVEL

SERVICES

TOTAL

**DECLARATION OF SERVER**

I declare under penalty of perjury under the laws of the United States of America that the foregoing information contained in the Return of Service and Statement of Service Fees is true and correct.

Executed on

*Date**Signature of Server**Address of Server*

**Attachment to Summons**

**Defendants**

E-Gold Ltd.  
Global Corporate & Trust Management Ltd.  
Hun Kins Building  
Main Street, Charlestown  
Nevis

Gold & Silver Reserve Inc.  
103 Foulk Road - Suite 202  
Wilmington, Delaware 19803-3742

DigiGold Ltd.  
Global Corporate & Trust Management Ltd.  
Hun Kins Building  
Main Street, Charlestown  
Nevis

Douglas Jackson  
Chairman  
OmniPay  
175 East Nasa Blvd., Suite 300  
Melbourne, Florida 32901

Barry K. Downey  
One W. Pennsylvania Avenue, Suite 950  
Baltimore, Maryland 21204

The Jackson Family Trust  
c/o Hildeberto S. De Frias and Michael J. Mello  
Mello Jones & Martin  
Reid House, 31 Church St.  
Hamilton, HM 12, Bermuda

The Downey Family Trust  
c/o Hildeberto S. De Frias and Michael J. Mello  
Mello Jones & Martin  
Reid House, 31 Church Street  
Hamilton, HM 12, Bermuda

Baxter, Baker, Sidle, Conn & Jones, P.A.  
120 East Baltimore Street  
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Michael J. Mello  
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Reid House, 31 Church St.  
Hamilton, HM 12, Bermuda

01 CV 9691

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

GM NETWORK LIMITED and  
NET TRANSACTIONS LIMITED,

Plaintiffs,

v.

E-GOLD LTD., GOLD & SILVER  
RESERVE INC., DIGIGOLD LTD.,  
DOUGLAS JACKSON, BARRY K.  
DOWNEY, THE JACKSON FAMILY  
TRUST, THE DOWNEY FAMILY TRUST,  
BAXTER, BAKER, SIDLE, CONN &  
JONES, P.A., HILDEBERTO S. DE FRIAS,  
MICHAEL J. MELLO, and DOES 1-10,  
inclusive,

Defendants.

Civil Action No.

**COMPLAINT**

Plaintiffs, GM Network Limited ("GM Network") and Net Transactions Limited ("Net Transactions") (collectively, "Plaintiffs"), for their complaint against defendants, e-gold Ltd. ("e-gold"), Gold & Silver Reserve Inc. ("G&SR"), DigiGold Ltd. ("DigiGold"), Douglas Jackson, Barry K. Downey, the Jackson Family Trust, the Downey Family Trust, Baxter, Baker, Sidle, Conn & Jones, P.A. ("Baxter Baker"), Hildeberto S. De Frias and Michael J. Mello (collectively, "Defendants"), allege:

**The Parties**

1. Plaintiff GM Network is a corporation organized and existing under the laws of the Isle of Man and having a place of business in the Isle of Man.

2. Plaintiff Net Transactions is a corporation organized and existing under the laws of the Bahamas and having a place of business in Jersey, Channel Islands.
3. Upon information and belief, e-gold is a corporation organized and existing under the laws of Saint Kitts and Nevis and having a place of business in Nevis.
4. Upon information and belief, G&SR is a corporation organized and existing under the laws of Delaware and having a place of business in Wilmington, Delaware.
5. Upon information and belief, DigiGold is a corporation organized and existing under the laws of Saint Kitts and Nevis and having a place of business in Nevis.
6. Upon information and belief, Douglas Jackson is a resident of Melbourne, Florida.
7. Upon information and belief, Barry Downey is a resident of Baltimore, Maryland.
8. Upon information and belief, the Jackson Family Trust is a Bermuda trust having a trustee residing in Bermuda.
9. Upon information and belief, the Downey Family Trust is a Bermuda trust having a trustee residing in Bermuda.
10. Upon information and belief, Baxter Baker is a professional association organized and existing under the laws of Maryland and having a place of business in Baltimore, Maryland.
11. Upon information and belief, Hildeberto S. De Frias and Michael J. Mello are residents of Bermuda.
12. The true names and capacities, whether individual, corporate, associate, partnership, or otherwise, of defendants Does 1-10 are unknown to Plaintiffs, who therefore sue said defendants by such fictitious names and will ask leave to amend this Complaint to show their true names and capacities when the same have been ascertained. Plaintiffs allege on

information and belief that each of the fictitiously named defendants is responsible in some manner for the wrongful conduct herein alleged, and that such wrongful conduct caused harm to Plaintiffs.

### **Jurisdiction and Venue**

13. This is an action arising under the Patent Laws of the United States, Title 35, United States Code and under the Federal Declaratory Judgment Act. This Court has jurisdiction of the subject matter hereof pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201 and 2202.

14. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391 and 1400(b).

### **COUNT I**

15. Plaintiffs hereby incorporate by reference all averments made in paragraphs 1-14 above.

16. On September 23, 1997, United States Patent No. 5,671,364 ("the '364 patent"), entitled "Method And System For Commodity-Based Currency For Payment Of Accounts And Elimination Of Payment Risk," was duly and legally issued to James Turk. James Turk subsequently assigned his rights in the '364 patent to GM Network. GM Network is the owner of the entire right, title and interest in and to the '364 patent. Net Transactions is a subsidiary of GM Network and currently the sole licensee of the '364 patent. Net Transactions operates a commercial embodiment of the '364 patent, accessible via the Internet at <http://www.goldmoney.com>. A copy of the '364 patent is attached hereto as Exhibit A.

17. Upon information and belief, e-gold has and continues to directly infringe, contributorily infringe and/or actively induce infringement of the '364 patent in this judicial district and elsewhere in the United States by operating the e-gold electronic payment system

("the e-gold system"), which is accessible via the Internet at <http://www.e-gold.com> ("the e-gold Web site").

18. Upon information and belief, G&SR, DigiGold, Barry Downey, Douglas Jackson, the Jackson Family Trust, the Downey Family Trust, Baxter Baker, Hildeberto S. De Frias and Michael J. Mello have and continue to directly infringe, contributorily infringe and/or actively induce infringement of the '364 patent by controlling, facilitating and/or assisting in the operation of the e-gold system.

19. Upon information and belief, Defendants' infringement of the '364 patent has been and continues to be willful, wanton and deliberate, without license and with full knowledge and awareness of Plaintiffs' patent rights.

20. Plaintiffs have given Defendants actual notice of the '364 patent by letter dated October 29, 1997, and have complied with the statutory notice requirements of 35 U.S.C. § 287(a).

21. Unless enjoined by this Court, Defendants will continue their acts of infringement to Plaintiffs' substantial and irreparable harm.

## **COUNT II**

22. Plaintiffs hereby incorporate by reference all averments made in paragraphs 1-14 above.

23. On September 23, 1997, United States Patent No. 5,983,207 ("the '207 patent"), entitled "Electronic Cash Eliminating Payment Risk," was duly and legally issued to James Turk and Geoffrey Turk. James Turk and Geoffrey Turk subsequently assigned their rights in the '207



patent to GM Network. GM Network is the owner of the entire right, title and interest in and to the '207 patent. A copy of the '207 patent is attached hereto as Exhibit B.

24. Upon information and belief, DigiGold has and continues to and/or will continue to directly infringe, contributorily infringe and/or actively induce infringement of the '207 patent in this judicial district and elsewhere in the United States by operating the DigiGold electronic payment system ("the DigiGold system"), which is accessible via the Internet at <http://www.digigold.net> ("the DigiGold Web site").

25. Upon information and belief, e-gold, G&SR, Barry Downey, Douglas Jackson, the Jackson Family Trust, the Downey Family Trust, Baxter Baker, Hildeberto S. De Frias and Michael J. Mello have and continue to and/or will continue to directly infringe, contributorily infringe and/or actively induce infringement of the '207 patent by controlling, facilitating and/or assisting in the operation of the DigiGold system.

26. Upon information and belief, Defendants' infringement of the '207 patent has been and continues to be willful, wanton and deliberate, without license and with full knowledge and awareness of GM Network's patent rights.

27. GM Network has given Defendants actual notice of the '207 patent by letter dated May 16, 2000, and in subsequent meetings, but Defendants have continued their infringing conduct.

28. Unless enjoined by this Court, Defendants will continue their acts of infringement to GM Network's substantial and irreparable harm.

**WHEREFORE, Plaintiffs pray that:**

A. This Court declare that Defendants have infringed United States Patent No. 5,671,364;

B. This Court declare that Defendants have infringed and/or will infringe United States Patent No. 5,983,207;

C. Defendants, their parents, affiliates, subsidiaries, officers, directors, agents, servants, employees, attorneys, successors and assigns, and all persons in active concert, privity or participation with them be preliminarily and permanently enjoined and restrained from further infringement of United States Patent Nos. 5,671,364 and 5,983,207;

D. All software, including source code, used in the operation of the e-gold and DigiGold Web sites to infringe United States Patent Nos. 5,671,364 and 5,983,207 be delivered to Plaintiffs for destruction;

E. Damages, including interest, be assessed against Defendants and awarded to Plaintiffs adequate to compensate for Defendants' infringement of said patents, and that this Court conduct an accounting to determine said damages;

F. Said damages be increased to three times the amount found or assessed;

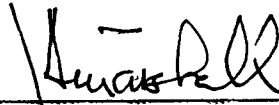
G. Plaintiffs be awarded their reasonable attorney's fees and their costs and disbursements in this action; and

H. Plaintiffs be awarded such other and further relief as this Court may deem just and proper.

**Jury Trial Demand**

Plaintiffs hereby demand a trial by jury on all issues so triable herein.

Dated: October 31, 2001



Jonathan A. Marshall (JM 7664)

Timothy E. DeMasi (TD 7852)

Thomas P. Scully (TS 8561)

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GM Network Limited and  
Net Transactions Limited





US005671364A

# United States Patent [19]

Turk

[11] Patent Number: 5,671,364  
[45] Date of Patent: Sep. 23, 1997

[54] METHOD AND SYSTEM FOR COMMODITY-BASED CURRENCY FOR PAYMENT OF ACCOUNTS AND ELIMINATION OF PAYMENT RISK

[76] Inventor: James J. Turk, P.O. Box 4682, Greenwich, Conn. 06830

[21] Appl. No.: 465,430

[22] Filed: Jun. 5, 1995

## Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 15,588, Feb. 10, 1993, abandoned.

[51] Int. Cl.<sup>6</sup> G06F 15/30; G06F 15/00

[52] U.S. Cl. 395/239; 395/201; 395/235; 340/825.35

[58] Field of Search 395/149, 600, 395/239, 201, 235; 364/408, 403, 401 R, 464.01; 340/825.35

[56] References Cited

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## OTHER PUBLICATIONS

Lee, P. and Ghosh, S.; "NOVAHID: A Novel Architecture for Asynchronous, Hierarchical, International, Distributed, Real-Time Payments Processing," *IEEE Journal on Selected Areas in Communications*, v12, n6, pp. 1072-1087. Aug. 1994.

Primary Examiner—Willington Chin

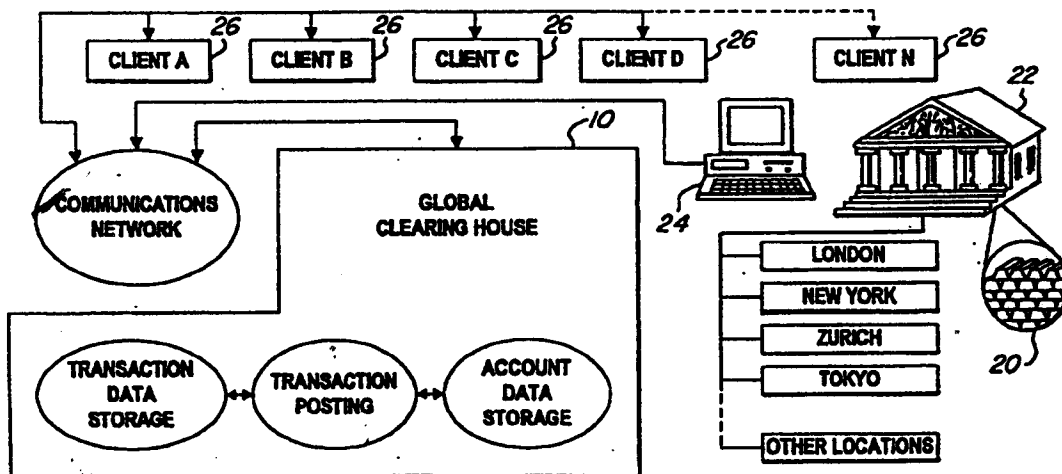
Assistant Examiner—Melissa Kay Carman

Attorney, Agent, or Firm—St. Onge Steward Johnston & Recons

## [57] ABSTRACT

A system and method for permitting gold or other commodities to circulate as currency requires a network of system users that participate in financial transactions where payment is made in units of gold. The gold is kept in secure storage at a deposit site for the benefit of the users. The payments in gold are effected through a computer system having data storage and transaction processing programs that credit or debit the units of account of gold held for the account of each system user.

16 Claims, 1 Drawing Sheet



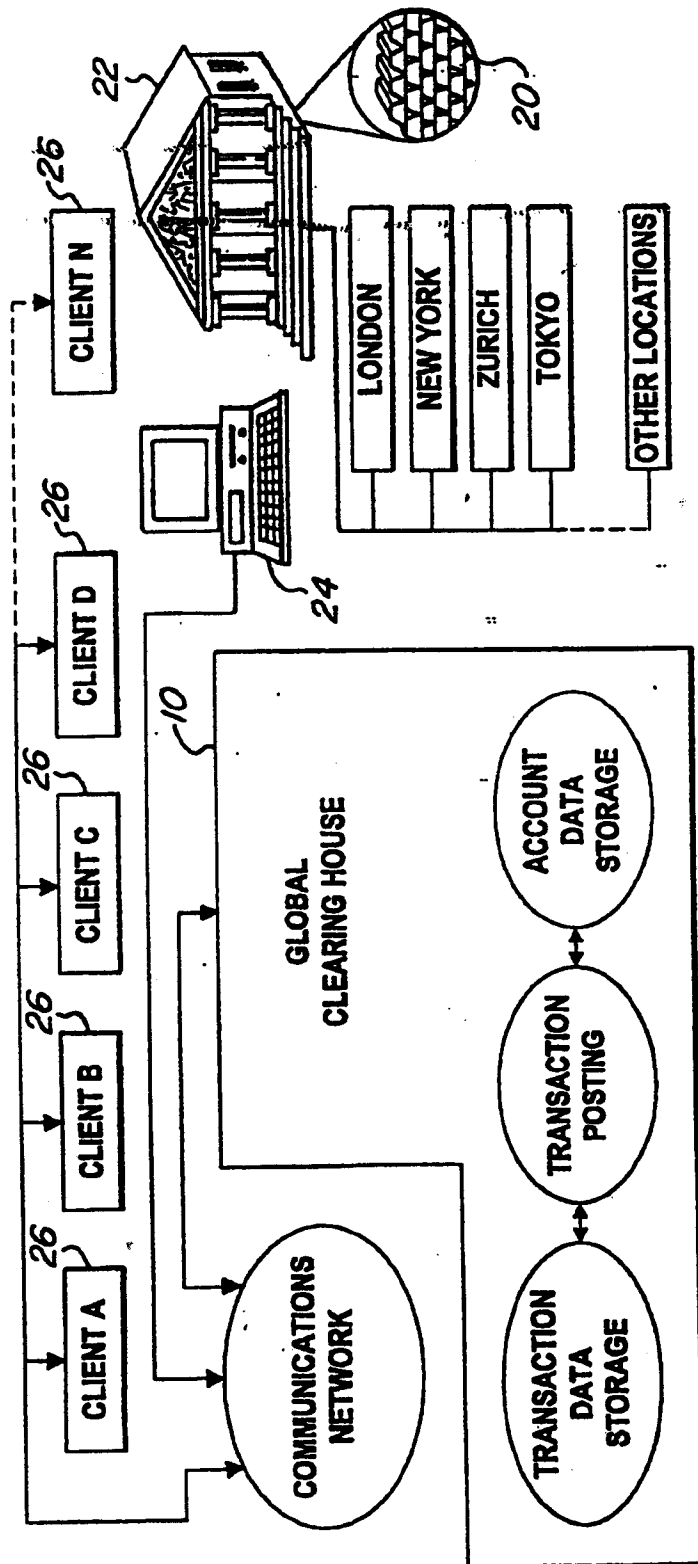


FIG. 1

# METHOD AND SYSTEM FOR COMMODITY-BASED CURRENCY FOR PAYMENT OF ACCOUNTS AND ELIMINATION OF PAYMENT RISK

This is a Continuation-In-Part of application Ser. No. 08/015,588, filed Feb. 10, 1993; abandoned Jun. 6, 1995.

## FIELD OF THE INVENTION

The present invention relates to the field of computerized systems for settlement of financial transactions.

## BACKGROUND OF THE INVENTION

In the historic past, precious metals circulated as currency. The metals circulated mainly in the form of coins, and over time improvements were made to coins to improve their reliability. These improvements included, for example, detailed engraving on the face and obverse of the coin, and milling of edges. These improvements were intended to prevent the clipping of coins, which was a process that lightened the weight of the coin. When this practice occurred, the coin was debased, i.e., it lost purchasing power because the coin no longer constituted the weight of gold it was purported to constitute. Each debasement interfered with normal trade and commerce, and these interferences impeded economic activity in general. Subsequently, debasement of coin became subtler, and frequently included substitution of a base metal for the gold.

The circulation of precious metals coins was in time supplanted by certificates during the period from 1680-1840. By this method of currency, the coins of precious metal remained in safe and secure storage, typically a vault facility maintained by a bank or warehouse company. A certificate of deposit, a paper document, was issued by the bank or warehouse company and evidenced the deposit of coin that had been made into the facility, and the certificate of deposit began circulating as a substitute for the coin. Circulation of the certificate, in lieu of the coins, offered numerous advantages. Paper was easier to transport, and a relatively small amount of certificates could be used to complete transactions of high value. There was less risk of debasement of the coin that was stored. However, while these advantages significantly improved the circulating medium, there were also disadvantages. These included forgery of paper certificates, fraud and bankruptcy of the bank or warehouse company.

As a result, another improvement to currency soon emerged. This improvement in the nature of currency was the creation of deposit currency. Deposit currency is a process that enables paper money and/or coin to circulate as currency. By this method of currency, the coins of precious metal and/or the paper currency that represented a claim to those coins, remained in safe and secure storage, typically a vault facility maintained by a bank. Circa 1840 to the present, the circulation of coin and paper money for commercial transaction was supplanted by deposit currency, i.e., money is now moved around mainly by checks and wire transfers.

The creation of deposit currency significantly improved the circulating medium. It was no longer necessary to extensively rely on coins, which could be clipped, debased, etc., nor on paper money, which could be counterfeited. By moving monetary units of account on deposit in one bank to another bank, the process of payments was significantly enhanced.

However, in time unforeseen problems have appeared which detract from the use of deposit currency as a medium

of exchange. The institutions in which clients lodge their money and deposit currency sometimes are unable to meet their commitment to their clients to return the clients' coin or paper money. The institutions, typically banks, which accept the deposits of coin and paper money from their client, loan the coin and paper money to other clients. Occasionally these borrowers failed to repay their loans, causing the bank to take a loss. Cumulatively these losses can be large enough to cause the bank to fail. A bank in that case no longer has sufficient coin or paper money to repay its liabilities to its clients.

Because bank failures have caused great harm, much effort has been expended to prevent bank failures where possible and to limit the adverse impact on economic activity should a bank fail. For example, government programs have been implemented to insure depositors that their money will be returned, or that they will otherwise still be able to have access to the value of their deposit currency. The deposit insurance programs are limited to some maximum amount, presently \$100,000, so bank clients with deposits greater than the insured amount are at risk for the amount of their deposit currency above the insured limit.

## SUMMARY OF THE INVENTION

It is an object of the invention to provide a method and system for a commodity-based currency for payment of accounts that avoids the problems of prior art and deposit currency account systems. It is an object of the invention to provide such a system and method which is independent of external events that cause fluctuations in value of national currencies. It is an object of the invention to provide such a system and method that permits gold and other commodities to circulate as deposit currency.

In accordance with one embodiment of the invention, a commodity based currency system for paying accounts comprises: at least one deposit site having secure facilities for storage of a valuable commodity; an amount of a commodity stored at the deposit site; and a computer system for implementing and recording transactions defined in units of the commodity. The accounting of the transactions is denominated in units of the commodity. The computer system includes: an account data storage device, a transaction data storage means, and a transaction posting means. The account data storage device is capable of recording data identifying persons and a number of units of the commodity credited to each of the persons and held in the deposit site for the account of the persons. The transaction data storage device receives records of transactions denominated in units of the commodity. These records of transactions include an identification of a person who will receive a debit, a person who will receive a credit, the amount of such debit, the amount of such credit, and the identity of the deposit site. The transaction posting means extracts data from the records of transactions and posts debits and credits to the account data storage device to update the data identifying the number of units of the commodity held for the account of each person involved in the transaction.

The system preferably permits remote access to submit transaction records, and provides verification means for verifying the bona fides of the person seeking to submit transaction records. A remote terminal is provided at the deposit site to enter information regarding the commodity held at the deposit site for the account of a person.

In a preferred embodiment, the commodity comprises a precious metal, such as silver, or most preferably, gold of a specified purity.

Other objects, aspects and features of the present invention in addition to those mentioned above will be pointed out in or will be understood from the following detailed description provided in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic illustration of the operation of the invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

A glossary of the terms used in the present application is provided hereafter.

As used herein, a "computer system" comprises at least the following components: a central processing unit (CPU), a display device, a data storage device, and a printing capability.

As used herein, "money" is a tool that enables the participants in an exchange of goods and services to define value of the exchange.

As used herein, "currency" means the physical representation of money. Currency is the medium of exchange enabling producers and consumers to exchange goods and services indirectly for other goods and services. Currency is denominated into units of account, which permits economic calculation by the participants in the exchange. Currency also is a means of payment which enables the participants in an exchange to settle their respective obligation.

As used herein, "cash currency" is the paper notes issued by a country's central bank. Each note is denominated in terms of a fixed number of units of account.

As used herein, "deposit currency" is the liability of the banks that accept deposits of a country's national currency.

As used herein, a "clearing house" is a center for processing transactions to credit and debit accounts held by parties to the transaction.

This invention relates to a system and method for payment and receipt of monetary units of account. More specifically, it relates to a clearing house 10 that is the center of an interactive communications network that will enable gold and/or other commodities to be used and freely exchanged as a means of payment, i.e., to be used as currency.

The clearing house is intended to develop an extensive user base located within the United States and globally that will use gold and/or other commodities as a currency for effecting payments in cross-border as well as intra-country commercial transactions. Since this currency is preferably a defined weight of gold or other commodity, the currency of the clearing house will be non-national.

Each system user individually establishes a depository account with the clearing house either by storing gold or other commodity at an affiliated deposit site 22 or by purchasing gold or other commodity already stored at such a deposit site. The deposit site will confirm the deposit of the commodity to the clearing house and transmit the information via remote terminal 24 to the computer system 26 described hereafter. Each account will be denominated in the currency of the clearing house, which is a defined quantity of gold or other commodity (for example, ounces, or kilograms of gold, barrels of oil, etc.). Every system user that establishes an account relationship with the clearing house will become a participant in the network of system users using the payment processing capability provided by the clearing house.

The network of individuals, corporations and other entities that are clients of the clearing house will use communications and information processing technology made available to them by the clearing house to effect transactions in the commodity denominated currency of the clearing house. They will (1) make payments to other members of the network, generally their suppliers; and (2) collect payments from other members of the network, generally their customers.

Though it is envisioned that the clearing house will initially establish working relationships with corporations involved in international trade and commerce, the economics of scale that will be generated by an increasing number of transactions completed through the clearing house means that in time the scope of the clearing house activities can be broadened to include transactions by individuals. The high volumes of payments and receipts now undertaken daily in the course of normal economic activity indicate that the potential opportunities for the application of this invention are very significant.

This invention therefore provides a system and method of settling of payments for transactions through a clearing house with a global scope of operation (hereafter referred to as "Global Clearing House" or "GCH").

The advantages that GCH will offer system users, which differentiates its services from other payments mechanisms now available, include (1) the ability to complete a payment without incurring the risk now inherent in existing mechanisms used to complete payment transactions, (i.e., possible loss of funds deposited in a bank which is seized or which is insolvent), (2) the ability for a client to receive immediate credit and to be immediately informed that monetary units of account have been added to the account kept by the client at GCH, (3) the ability for a client to make immediate payment and to be immediately informed that monetary units of account have been deducted from the account kept by the client at GCH, (4) the ability of a client to maintain monetary units of account on deposit without being exposed to the practice of fractional reserve banking (wherein banks do not keep as a reserve assets equal to the amount and identity of their liabilities) and thereby avoid the risks of partial or total loss of the deposit as a result of the overissue of the currency (where banks create liabilities for currency based on assets which they do not have on hand), (5) the ability of a client to maintain monetary units of account on deposit without being exposed to the risk that those monetary units of account will be loaned by the institution, and (6) the ability to use gold and/or other commodities as currency.

Gold is the preferred commodity as it is a low-risk medium of payment and it has a known value. Gold extinguishes the obligation arising from a transaction in trade and commerce. When the seller receives gold, there is no further obligation because the product sold has been exchanged for a tangible asset. However, a national currency does not necessarily extinguish the obligation incurred when the buyer acquires a product. The seller does not receive a tangible asset. When the seller instead receives a national currency, the seller receives a promise to pay, which is principally dependent upon the central bank which issues the national currency. The obligation can be further at risk if the payment clearing bank is unable to meet its obligations to deliver the currency specified in a transaction.

Using gold as currency also permits the creation of financial instruments and futures contracts denominated in terms of a stated weight of gold. For example, a futures contract for delivery of soybeans could be designated pay-



able in gold units of account instead of in U.S. Dollars. Other commonly traded commodities, i.e., crude oil, agricultural products, etc., could be similarly designated in gold units of account. The transactions would then be processed and cleared through GCH.

The above advantages differentiate the commodity currency processed by GCH from any deposit currency now in use.

Referring now to FIG. 1, a commodity based currency system for paying accounts in accordance with the invention comprises: at least one deposit site; an amount of a commodity stored at the deposit site; and a computer system for implementing and recording transactions defined in units of the commodity.

#### The Deposit Sites

Preferably there are several deposit sites for storing the commodity. The deposit sites are preferably located in countries having secure and stable political systems where there is minimal risk of misappropriation of the asset by the government or private persons. The deposit sites will typically be a bank; however, other secure vault facilities could also serve as the deposit site. Typical site locations would be London, New York, Zurich and Tokyo, as well as other locations.

The deposit site provides facilities for safe and secure storage of the commodity to be used for currency. Typically such deposit site consists of a protected vault. The bank or protected vault that is servicing the GCH system users will have the ability to (1) receive the commodity from a client, (2) return the commodity to a client, (3) test the purity of the commodity, (4) measure the weight and/or other physical properties of the commodity, (5) provide identifying information for each parcel of the commodity placed within the deposit site in order to distinguish between the different parcels belonging to the different clients of the deposit site, (6) report to the client the quantity of the commodity stored by the client at the deposit site, and (7) provide identifying information and the capability to physically separate from the total quantity of the commodity stored in the deposit site those parcels of the commodity to be designated for use as currency.

#### The Commodity

The commodity must be non-perishable, and most preferably has a high ratio of value to weight and volume. In a preferred embodiment, the commodity comprises a precious metal, such as silver, or most preferably, gold of a specified purity. However, several other commodities, notably crude oil and other petroleum products may also serve as the commodity used to designate units of account in the system.

Gold has three unique advantages as money. Each of these are inherent to gold, and they are not advantages available to any national currency.

When defined to a precise weight, gold is a consistent and unvarying unit of account. An ounce of gold is knowable and unvarying. An ounce today is the same as an ounce yesterday or an ounce twenty years ago. However, a national currency does not have these characteristics. A U.S. Dollar or a Deutschemark or a Swiss Franc on deposit in Bank AAA is not the same as the same currency on deposit at Bank CCC because these two banks have different levels of capital and a different mix of assets. Therefore, Dollars or other currencies on deposit in these unrelated institutions have entirely different levels of risk, so the national currency is not a consistent and unvarying unit of account.

Gold is non-national money, which means that it is outside the scope of government. Therefore, gold is not subject to the political process because it is beyond the control of governments, their central banks and monetary authorities. The result is that gold over long periods of time tends to hold its purchasing power better than any national currency. And as set forth above, gold extinguishes an obligation on delivery.

#### Opening of an Account

The system and process of the invention require system users to establish account relationships with GCH. The account relationship is confirmed when a system user deposits gold with GCH in one or more of GCH's approved depositories. A system user makes a gold deposit or purchases another person's gold deposit and does so at a specific site. The deposit site then notifies the GCH by data transmission of the identity of a person and units of gold held for the account of that person that gold is available for settling transactions for the benefit of that user.

In particular, additions of currency to the system will be made in the following way: (1) the system user transfers a quantity of the commodity to be used as currency to a deposit site; or (2) the system user notifies the deposit site to earmark all or part of the quantity of the commodity stored at the deposit site by the user. In the first case, the deposit site verifies the receipt of the commodity and provides confirmation to the system user and GCH specifying the quantity and/or other physical attributes of the commodity. In the second case, the deposit site separates the earmarked parcels of the commodity to be used as currency in a separate area of the deposit site designated solely for use of storing earmarked parcels of the commodity comprising the currency of the GCH. Once the physical transfer is completed, the deposit site notifies the GCH that the commodity has been established as currency by the system user.

The GCH then credits the account previously established by the system user at the GCH with the quantity of the commodity specified by the system user which has been established as currency and has been credited to the account of the system user. Once established in this way, the commodity earmarked at the deposit site becomes eligible for use as currency, and the system user may transfer all or part of the commodity units of account to another account within the system.

The balance sheet of GCH reflects (1) the cumulative deposits of its system users, which are liabilities of GCH, and (2) the identical amount of gold as its assets. GCH's financial position is presented in Table No. 1.

TABLE No. 1

GCH Balance Sheet Before Transaction			
ASSETS		LIABILITIES	
Gold Stored in London	100 oz.	Client A	100 oz. London
Gold Stored in Zurich	100 oz.	Client A	100 oz. Zurich
Gold Stored in New York	175 oz.	Client B	175 oz. New York
	375 oz.		375 oz.

#### The Computer System

Once a system user establishes an account relationship with GCH, the user has access to an interactive communications network giving access to a computer system. When

two system users enter into a trade transaction between themselves, they effect payment through this network.

The GCH computer system is adapted for storing of data and entering the accounts and the transactions affecting the accounts of the participants in the system. Each GCH system user is provided with the means to conduct transactions in the user's account maintained with the GCH. Each account typically includes the name, address and other identifying information of the account holder, a unique account number assigned to each account, an inventory of transactions conducted through each account, and the means to verify the accuracy and authenticity of each transaction conducted for an account when instructed by the account holder.

The computer system thus includes an account data storage device, a transaction data storage means, and a transaction posting means.

The account data storage device is capable of recording data identifying the system user and a number of units of the commodity credited to the user and held in the deposit site for the account of the user.

The transaction data storage means receives and stores records of transactions which are denominated in units of the commodity. These records of transactions include an identification of a system user who will receive a debit, a system user who will receive a credit, the amount of such debit, the amount of such credit, and the identity of the deposit site.

The transaction posting means extracts data from the records of transactions and posts debits and credits to the account data storage device to instantly update the data identifying the number of units of the commodity held for the account of each person involved in the transaction.

The system includes a remote terminal 24 at the deposit site 22 for receiving and sending data to the computer system upon opening or closing of an account and/or when there is a transfer of units of gold. The data is transmitted from the deposit site to the transaction data storage device and includes an identification of units of the commodity 20 held at the site for the account of such person.

The system preferably permits remote access from client terminals 26 to submit transaction records to the system 10, and provides verification means for verifying the bona fides of the person seeking to submit transaction records. This permits the user access to the computer system through an interactive communications network from a location remote from either the GCH or the deposit site.

Typically, the account holder will use a computer which instructs a modem which provides access to the computer system by dialing telephone numbers available to the GCH system users. Once the centralized computer of the GCH 10 is accessed in this way and once entry is made by providing a series of security codes to prevent unwarranted and unwanted access, the GCH client has access to the chosen account to which it is the account holder. Once access has been granted, the account holder may review the account, conduct transactions for the account, review past transactions or other data stored by the centralized computer for the account.

Access to the centralized computer of the GCH permits real time, instantaneous transfers of units of account. To transfer units of account of the commodity in order to complete a financial obligation, the system user (hereafter the "paying client") instructs the GCH (1) to debit from the paying client's account a specified quantity of the commodity, (2) the day and time the specified quantity of the commodity is to be transferred, (3) the account number and other verifying information to specify the identity of the

client (hereafter the "receiving client") to whom the payment will be made, and (4) a prearranged series of security codes maintained between the paying client and the GCH in order to provide security and protection from unauthorized transactions.

The centralized computer of the GCH collects the transfer instructions provided by the paying client and enters those instructions into a transaction file maintained to record the authorized transactions for all paying clients. When the appointed day and time is reached, the centralized computer of the GCH completes the transaction by debiting the account of the paying client for the quantity of the commodity instructed by the paying client, and simultaneously credits the account of the receiving client instructed by the paying client. The credit made to the account of the receiving client is made simultaneously as a debit of the account of the paying client. Once the credit of the commodity units of account is made to the designated account of the receiving client, the receiving client has immediate access to those commodity units of account, thereby extinguishing the obligation of the paying client to the receiving client.

For example, A and B enter into a transaction in which A agrees to purchase from B a specific good/service. The price is agreed between them to be 25 ounces of Zurich gold. GCH is then instructed by A to debit A's account for 25,0000 Zurich ounces and pay this amount to B's account. Accounting of gold in ounces should be to at least four decimal points, though five or more decimal points could be used if greater precision in the measurement of value in the exchange is required.

GCH confirms immediate payment to both A and B. The gold is not moved from the storage facility. It remains in the same Zurich location, but it is now stored there by GCH for the account of B instead of A. This changed position is presented in Table No. 2.

The total assets and liabilities of GCH remain unchanged. Only the composition of the liabilities changes, and it only changes after GCH performs its payments function.

The net result of this transaction is that gold is circulating as currency. Gold is used as a monetary unit of account in a transaction of trade and commerce entered into between A and B, and it therefore is circulating as currency even though it remains in safe and secure storage.

TABLE No. 2

GCH Balance Sheet After Transaction			
ASSETS		LIABILITIES	
Gold Stored in London	100 oz.	Client A	100 oz. London
Gold Stored in Zurich	100 oz.	Client A	75 oz. Zurich
		Client B	25 oz. Zurich
Gold Stored in New York	175 oz.	Client B	175 oz. New York
	375 oz.		375 oz.

GCH uses a tangible asset (i.e., a defined weight of gold) as the basic monetary unit of account. GCH is a clearing house with assets that are identical to its liabilities. In other words, GCH does not monetize debts and thereby turn the debt obligations of borrowers into currency. GCH will have on hand as an asset the total weight of gold it owes to its depository clients. The Monetary Balance Sheet of GCH is substantially different than that of the Dollar, any national currency, or any existent bank as shown in Table 3.

TABLE No. 3

Monetary Balance Sheet of Global Clearing House (Denominated in Units of Account Called Ounces)			
"Quality of Money" ASSETS		"Quantity of Money" LIABILITIES	
Gold in Secure Storage	\$75 oz.	Client Deposits	\$75 oz.
	\$75 oz.		\$75 oz.

In contrast to any national currency, the "quality of money" is identical to the "quantity of money" on the balance sheet of GCH. This common identity of assets and liabilities illustrates a unique advantage available to users of the invention. Identical assets and liabilities provides certainty that payments will be made as directed and without risk.

#### Closing of an Account

A system user can subsequently "cash out" of the GCH system by either (1) selling his gold interest to another; (2) withdrawing the user's gold deposited at a deposit site. At this point, the deposit site will notify the GCH that the system user's gold units of account are no longer available to the system, for example, by entering information in the remote terminal at the deposit site.

It is to be appreciated that the foregoing is illustrative and not limiting of the invention, and that various changes and modifications to the preferred embodiments described above will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present invention, and it is therefore intended that such changes and modifications be covered by the following claims.

What is claimed is:

1. An electronic commodity based system for conducting financial transactions, comprising:

at least one deposit site having secure facilities for storage of a commodity;

an inventory of a valuable commodity stored in said secure facilities at a said deposit site, said inventory including a quantity of units of said valuable commodity held at said deposit site for an account of at least one identified person;

a computer system for processing data for accounting transactions denominated in said units of said commodity, having

(a) an account data storage device for recording data comprising an identification of persons and a quantity of units of said commodity credited to said account of each of said persons and an identification of said deposit site where said units of commodity are held,

(b) a transaction data storage device for receiving records of transactions denominated in units of said commodity from a said person identified as having a quantity of said units of said commodity credited to said account of said person, said records of transactions including at least an identification of a person who will receive a debit, a person who will receive a credit, an amount of a debit of a quantity of said units of said commodity held at a deposit site, an amount of a credit of a quantity of said units of said commodity held at a deposit site, and an identification of the deposit site where said quantity of said units of said commodity are held,

(c) a transaction posting device for posting said records of transactions to said account data storage device to update said data comprising an identification of persons and a quantity of units of said commodity credited to said account of said persons at an identified deposit site;

a remote terminal located at said deposit site for receiving and sending data to said computer system, said data identifying a person and a quantity of units of said commodity held at said deposit site for an account of said person;

said electronic commodity based system permitting persons to conduct financial transactions without reliance on national currencies in conducting said financial transactions whereby obligations, of a person receiving a said debit of said units of said commodity held at a deposit site, to another person receiving a said credit of said units of said commodity held at a said deposit site, are extinguished upon posting of said records of transactions, thereby eliminating payment risk.

2. A system in accordance with claim 1 wherein said commodity comprises a precious metal.

3. A system in accordance with claim 2 wherein said precious metal comprises gold.

4. A system in accordance with claim 2 wherein said precious metal comprises silver.

5. A system in accordance with claim 3 wherein said gold is specified to a selected purity.

6. A system in accordance with claim 2 further comprising means for remote access to submit records of transactions to instantly debit and credit a person's accounts.

7. A system in accordance with claim 6 further comprising verification means for verifying the identity of said person obtaining access to said computer system and for confirming that said person is authorized to submit records of transactions to said transaction storage device.

8. A system in accordance with claim 2 wherein said units of said commodity are designated as a payment for a futures contract of a different commodity.

9. An electronic gold based system for conducting financial transactions, comprising:

at least one deposit site having a protected vault;

an inventory of gold stored in said protected vault at a said deposit site, said inventory including a quantity of units of gold held at said deposit site for an account of at least one identified person;

a computer system for processing data for accounting transactions denominated in units of gold, having

(a) an inventory data storage device for recording data identifying an amount of gold stored at a said deposit site,

(b) an account data storage device for recording data comprising an identification of a person and a quantity of said units of gold stored at said deposit site credited to an account of said person,

(c) a verification means for verifying the identity of a person obtaining access to said computer system and for confirming that such person is authorized to submit records of transactions,

(d) a transaction data storage means for receiving, from a person obtaining access to said computer system, records of transactions denominated in said units of gold, said records of transactions including at least an identification of a person who will receive a debit, a person who will receive a credit, an amount of said debit in said units of gold, an amount of said credit

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in said units of gold, and an identification of the deposit site where said units of gold are located,

(e) a transaction posting means for posting said records of transactions to said account data storage device to update said data comprising an identification of a person and of a number of units of said gold held at a said deposit site for the account of the person;

a remote terminal located at said deposit site for receiving and sending data to said computer system, said data identifying a person and a quantity of units of gold held at said deposit site for an account of said person;

said electronic commodity based system permitting persons to conduct financial transactions without reliance on national currencies in conducting said financial transactions whereby obligations, of a person receiving a said debit of said units of said commodity held at a deposit site, to another person receiving a said credit of said units of said commodity held at a said deposit site, are extinguished upon posting of said records of transactions, thereby eliminating payment risk.

10. A system in accordance with claim 9 further comprising means for remote access to said computer system to submit and store records of transactions.

11. A system in accordance with claim 10 wherein said gold is of a selected purity.

12. A system in accordance with claim 9 wherein said gold units of account are designated as a required payment in a futures contract for a commodity other than gold.

13. A method of accounting, using a valuable commodity as a deposit currency, implemented by a computer system, comprising the steps of:

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creating a deposit account data file for each of a plurality of persons, each said deposit account data file identifying a person, and a number of units of commodity stored at a deposit site for the benefit of the person;

entering records of transactions denominated in units of said commodity, said records of transactions including at least an identification of a person who will receive a debit, a person who will receive a credit, the amount of such debit in units of said commodity, the amount of such credit in units of said commodity, and the identity of the deposit site,

posting said records of transactions to debit and credit the deposit account data files of said persons to update said data identifying a number of units of said commodity held for the account of each said person;

said method permitting persons to conduct financial transactions without reliance on national currencies in conducting said financial transactions whereby obligations, of a person receiving a said debit of said units of said commodity held at a deposit site, to another person receiving a said credit of said units of said commodity held at a said deposit site, are extinguished upon posting of said records of transactions, thereby eliminating payment risk.

14. A method in accordance with claim 13 wherein said commodity comprises a precious metal.

15. A method in accordance with claim 14 wherein said precious metal comprises gold.

16. A method in accordance with claim 14 wherein said precious metal comprises silver.

\* \* \* \* \*





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**United States Patent** [19]

Turk et al.

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[45] Date of Patent: Nov. 9, 1999

[54] **ELECTRONIC CASH ELIMINATING  
PAYMENT RISK**[76] Inventors: James J. Turk; Geoffrey Turk, both of  
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[21] Appl. No.: 08/921,760

[22] Filed: Aug. 26, 1997

**Related U.S. Application Data**[63] Continuation-in-part of application No. 08/465,430, Jun. 5,  
1995, Pat. No. 5,671,364, which is a continuation-in-part of  
application No. 08/015,588, Feb. 10, 1993, abandoned.[51] Int. Cl.<sup>6</sup> G06F 153/00[52] U.S. Cl. 705/39; 705/22; 705/26;  
705/41; 705/43[58] Field of Search 705/39, 22, 26,  
705/41, 43; 380/4, 30, 25, 24; 340/825.31,  
825.34[56] **References Cited****U.S. PATENT DOCUMENTS**

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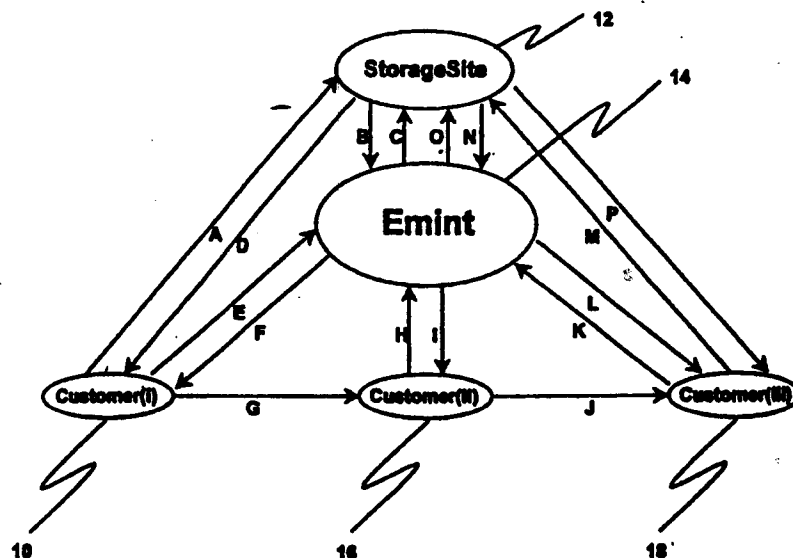
Primary Examiner—Allen R. MacDonald

Assistant Examiner—Romain Jeanty

[57] **ABSTRACT**

A system and method to allow gold to circulate as digital cash through the global computer network (Internet) and/or private communication networks much like cash currently circulates in the physical world. A computer system (emint) will create digital representations of gold (ecoins). Each ecoin will represent a weight of gold held at a participating secure storage facility (storage site), and each ecoin is given by the emint a unique Digital Hallmark™ by which it can be distinguished and identified. The sum total of all circulating ecoins (denominated in physical measures such as weights such as grams and/or ounces and fractions thereof) will equal the weight of all the gold held for safekeeping at the storage site(s) for the users of the emint. The ownership of gold is not transferred by a computer system executing debits and credits between individual accounts, but instead by individuals directly transferring ecoins amongst themselves (as is done in cash transactions, i.e., without double-entry bookkeeping).

11 Claims, 1 Drawing Sheet



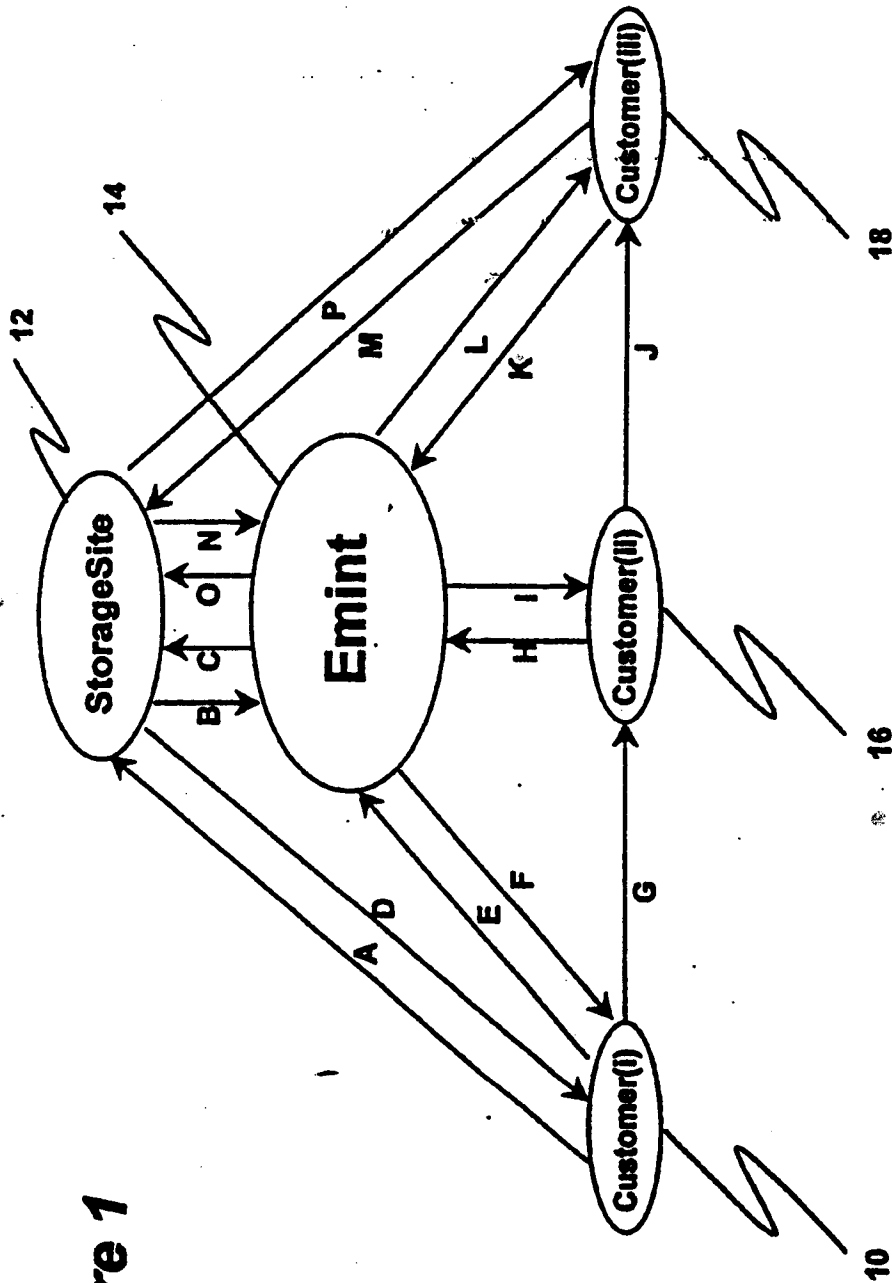


Figure 1

## ELECTRONIC CASH ELIMINATING PAYMENT RISK

This is a continuation in part of my application Ser. No. 08/465,430, filed Jun. 5, 1995 now Pat. No. 5,671,364; which is a continuation in part of application Ser. No. 08/015,588, filed Feb. 10, 1993, now abandoned.

### FIELD OF THE INVENTION

This invention relates to electronic transaction systems, and more specifically to a system using an asset-based electronic cash system, using public key digital signature systems, for settlement of payment obligations.

### BACKGROUND OF THE INVENTION

Recent advances in the field of cryptography have made possible the secure and privacy-protected transfer of digital information over insecure, open communication channels such as the global computer network known as the "Internet", by using public key encryption technologies.

Public key encryption methods have been developed for use in electronic cash. In one such method known as the RSA algorithm, encryption and decryption are accomplished by two mathematical equations which are related as inverses of each other. These equations are the private key, used by the issuing financial institution to digitally sign, or certify, a note, and the related public key, used by the recipient to determine and verify the existence of a valid signature on the note. Such protocols are known in the art and are described for example in Chaum, U.S. Pat. No. 4,759,063, the disclosure of which is hereby incorporated by reference.

In addition to such digital signature methods for certifying a digital note, a blind signature protocol has been developed so that the certifying financial institution cannot determine the note which it has certified, allowing the user to maintain his privacy. In such systems the user "blinds" the note he submits to the financial institution for its digital signature, the financial institution applies its digital signature to certify the note, and the user then unblinds the note and uses it to make a payment to a payee. A blind signature system is described in Chaum, U.S. Pat. No. 4,759,063 which has been incorporated by reference, and is in commercial use by DigiCash b.v. of the Netherlands.

In order to prevent a user from spending the note more than once, methods have been developed for testing the note to determine if it has already been spent. In one such system, if a note is spent twice, the identity of the user is revealed. Such a system is more suitable for lower value payments and is disclosed for example in Chaum, U.S. Pat. No. 4,914,698. For higher value payments, the payee will verify the status of the received note with the issuing financial institution, which will keep a database of issued and spent notes.

In still other methods, notes may be generated that can have plural currency values (like a wallet containing \$10, \$5, and \$1 bills) or which can have a variable value as portions of the note are spent. Such methods are disclosed in Chaum, U.S. Pat. No. 4,949,380, which is hereby incorporated by reference.

In summary, such public key signature systems allow an issuing financial institution to digitally sign an electronic note with its secret key such that the user, and the ultimate payee, can verify the authenticity of the note and the ability to make payment. The blinding protocol protects the user's privacy by preventing the financial institution from tracing a note subsequently presented to it for payment as cash.

In such systems, the electronic note signed by the issuing financial institution is denominated in a national currency. In my prior copending application Ser. No. 08/465,430, which is hereby incorporated by reference, I have described the problems associated with payment systems based on national currencies and the problems associated with common banking practices.

A particular problem is the payment risk now inherent in existing payment mechanisms, and the problem of "float." Payment risk arises in conventional banking systems where a financial institution accepts deposits, then in turn loans out that money to others. This is known as "fractional banking," in that the financial institution only keeps on hand a fraction of the actual assets it is holding for the account of its depositors. If the financial institution fails due to bad loans or fraud, the financial institution lacks sufficient assets to pay off its depositors. This practice has led to significant losses in connection with financial institution failures such as at the Herstatt Bank in Germany and the BCCI scandal. A related payment risk arises due to the fluctuating value of national currencies due to inflation and currency exchange rate variations dependent on the economy of the nation issuing the currency. Thus, there is a risk incurred by accepting national currencies.

"Float" is the amount of time a payee must wait for a transaction to be processed. This is considered an expense because of the unavailability of funds, which represents opportunity costs. In order to eliminate these payment risks and float, my invention disclosed in my copending parent application uses an asset (like gold) instead of a liability (national currency) for settling payments in a book-entry accounting system.

However, situations exist in which using a book-entry system for payments may be inexpedient or disadvantageous. In many cases, the payer and/or payee in a transaction may not want to be identified with a specific payment, preferring instead to remain anonymous. Currently, paper cash and metal coins provide such privacy in a transaction. Electronic cash also provides such privacy, although the payee can make himself known to the issuing financial institution as the recipient of anonymous funds when he redeems an electronic note for cash or other payment.

Also, smaller payments (generally considered to be amounts of less than U.S. \$10) may be uneconomical to process through a book-entry system, because double-entry bookkeeping generally involves relating particular credits and debits to particular accounts, i.e., correctly identifying the payer and the payee with each transaction and the amounts involved. The cost of knowing the identities of customers is high if it requires human operators to verify this information.

Accordingly, it would be desirable to provide a system that provides anonymity to one or more parties in a payment transaction, and provides the advantages of elimination of payment risk as described and claimed in my prior parent application.

### OBJECTS OF THE INVENTION

Accordingly, it is an object of the present invention to increase efficiency and surety of electronic cash payments by introducing a digital transaction system whose unit of account is an asset, as opposed to all other current electronic cash whose units of account are liabilities, thereby eliminating problems of payment risk inherent in current banking and electronic cash systems.

Another object is to increase security and privacy of said asset-based digital transaction system by using public key



encryption with digital signature methods preferably coupled with blind signature methods.

Other objects, aspects and features of the present invention in addition to those mentioned above will be pointed out in or will be understood from the following detailed description provided in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 shows a flowchart illustrating the operation of an asset-based electronic cash system in accordance with the invention.

#### DETAILED DESCRIPTION OF THE INVENTION

A glossary of the terms used in the present application is provided hereafter.

As used herein, a "book-entry system"—also called "double-entry bookkeeping," is a bookkeeping method of accounting in which a debit in one individual's account is also entered as an equivalent credit in another individual's account, and vice versa. All banks currently use this method of accounting when handling currency payments with other banks as well as between customers within the same financial institution.

As used herein, "client software" is a software application which runs on an individual's computer, allowing him to verify and exchange ecoins with the emint, to send and receive ecoins from other individuals, and to manage his ecoins stored in the memory of his computer.

As used herein, "Digital Hallmark™" is a digital signature or any other protocol for cryptographic authentication attached to each ecoin by the emint that certifies the genuineness of information embedded in the ecoin.

As used herein, "digital signature" is information generated by a private key applied and appended to electronic data. If the electronic data is not altered after the digital signature has been applied, the signature will verify the authenticity of the electronic data when checked with the corresponding public key.

As used herein, "ecoin" is the electronic representation of a valuable commodity, preferably, a precious metal such as gold, platinum, palladium, or silver, which is held for safekeeping at a storage site. Each ecoin comprises a unique serial number, a measure of the valuable commodity (for example, grams or ounces, and fractions thereof) that it represents, the name of a specific storage site where the valuable commodity is stored, and a date/time stamp of when the ecoin was created. Each ecoin may appear as a string of alphanumeric characters which may also be encrypted and/or digitally signed for security.

As used herein, "encrypt" is to scramble data so as to prevent unauthorized reading.

As used herein, "public key" is a mathematical key which is available publicly and which is used to verify digital signatures created with the matching private key, and in the context of encrypted communications is used to decrypt electronic data which can only be encrypted using the matched private key.

As used herein, "public key cryptography" is a technique for encrypting data by which the key used to decrypt the message is different from the key used to encrypt the message. The digital signature defined above is an application of public key cryptography in that the key used to verify the signature is different from the key used to sign the signature.

As used herein, "private key" is a mathematical key which is kept private to the owner and which is used to create digital signatures, and in the context of encrypted communications, is used to decrypt electronic data encrypted with the corresponding public key.

As used herein, "storage site" is a secure facility (e.g., a vault) in which the valuable commodity (e.g., gold) is held for safekeeping. Preferably there are several storage sites for storing the commodity. The storage sites are preferably located in countries having secure and stable political systems where there is minimal risk of misappropriation of the asset by the government or private persons. The storage sites will typically be a precious metal repository; however, other secure vault facilities could also serve as the storage site. Typical site locations would be London, New York, Zurich and Tokyo, as well as other locations.

The storage site provides facilities for safe and secure storage of the commodity to be used as the asset basis for the electronic cash. Typically such storage site consists of a protected vault. The precious metal repository or protected vault that is servicing the system users will have the ability to (1) receive the commodity from a client, (2) return the commodity to a client, (3) test the purity of the commodity, (4) measure the weight and/or other physical properties of the commodity, (5) provide identifying information for each parcel of the commodity placed within the storage site in order to distinguish between the different parcels belonging to the different clients of the storage site, (6) report to the emint and/or client the quantity of the commodity stored by the client at the storage site, and (7) provide identifying information and the capability to physically separate from the total quantity of the commodity stored in the storage site those parcels of the commodity to be designated for use as currency.

The valuable commodity stored at each storage site must be non-perishable, and most preferably has a high ratio of value to weight and volume. In a preferred embodiment, the commodity comprises a precious metal, such as platinum, palladium, or silver, or most preferably, gold of a specified purity. In the following discussion, gold is given as the example usage, but it is to be appreciated that other precious metals, tangible assets, and valuable commodities could also be used.

The "emint" is a computer and communications system which creates, distributes and verifies the authenticity of ecoins, and which receives information from the storage sites regarding gold held there for storage and specifically identified for use in the digital cash system.

The system of the invention requires some system users to establish a fiduciary relationship with a storage site. The relationship is confirmed when a system user either (1) stores gold with, or (2) purchases from another person gold already held at one or more storage sites. In the first case, the storage site verifies the receipt of the gold and provides confirmation to the system user specifying the pure weight and/or other physical attributes of the gold. In the second case, the storage site records the transfer of gold from one system user to the other.

Then the system user informs the storage site that he wishes to allocate some or all of his gold for use in the digital cash system. The storage site separates this specific weight of gold to be used as currency in a separate area of the vault, designated solely for storing gold in use as electronic cash issued by the emint. The storage site then notifies the emint by data transmission of the exact weight of gold to be created as ecoins.

The emint electronically creates ecoins in a variety of weights. Each ecoin includes information embedded in it comprising: a unique serial number, the weight (denominated in either grams or ounces or other physical measurement) of the gold that it represents, the name of the storage site where the gold is stored, and the date that the ecoin was created. The emint maintains a database of each ecoin it issues, identified by serial number. When anonymity to the users of the system is not assured, the database of the emint may also include the information embedded in the ecoin, such as the weight, identification of the storage site, and the date and time of issue.

Using public key cryptography the emint digitally signs each ecoin with its private key, thus providing each ecoin with a Digital Hallmark™. Blinding techniques may also be used to ensure the privacy of the user (the payer) of the ecoin. The Digital Hallmark™ allows an individual running the emint's client software to verify that an ecoin was in fact issued by the emint and is not a forgery.

Although the Digital Hallmark™ prevents an individual from creating fraudulent ecoins, it does not prevent him from duplicating real ecoins (which can be simply a string of text, and thus easily replicated) in an attempt to spend them twice. For instance, the emint may issue an ecoin to someone who then makes five copies and sends them to five different people.

To prevent multiple spending of the same ecoin, the emint maintains a database of serial numbers of every circulating ecoin so that a payee can contact the emint and confirm the value of each ecoin received (i.e., to make sure the serial number in the database is not recorded as already spent). Confirmation of value may be made nearly instantaneously.

A payee, who has confirmed the value of the ecoin, may then tender it to the emint. Upon tender, the emint will record the serial number of the tendered ecoin as a "spent" ecoin, so that it may not be subsequently reused by the user. The payee can request that the emint treat the tendered ecoin in different ways. The emint could be requested to credit the tendered ecoin to the payee's gold safekeeping account with the storage site; or the payee could request that the units of gold represented by the ecoin be converted to a national currency such as U.S. Dollars and that the U.S. Dollars be transferred by check, wire or other methods to another account; or the payee could request the issuance of a new ecoin to be delivered to the payee for use by the payee in other transactions.

It is to be appreciated that the emint will be responsible for collecting storage fees associated with the stored gold in the digital cash system held for the benefit of the system users. Usually such fees may be periodically charged against the amount of gold in a user's safekeeping account at the storage site. However, when an ecoin has been issued, the gold on account for a system user is treated as withdrawn from the user's safekeeping account in exchange for the ecoin. The emint will desirably recover the storage costs associated with the stored gold that has been converted to ecoins in some way. It is to be appreciated that it would not be feasible to simply charge the user to whom the ecoins were issued during the length of time between issuance and tendering of the ecoin, as this would permit an identification of the link between the user and the payee, since to charge the user for the storage costs that might be associated with an ecoin presented by a payee, the user-payer must necessarily be identified. This approach would compromise the desired privacy of the payment transaction.

One method to recover storage costs would be to simply charge a transaction charge associated with the issuance of

the ecoin, such that over time, and on an average basis the emint is able to recover the storage costs. A more sophisticated method would be to collect the storage costs from the tendered ecoin. Obviously, the payee may not wish to be responsible for the prior incurred storage costs of the user, and thus, as part of the confirmation process, the amount of the storage fee cost would need to be reported. This cost would be determined simply from the information embedded in the electronic coin, specifically, based on the date/time stamp showing the moment of issuance of the electronic coin, and the weight of gold involved.

The client software could be designed to calculate the storage fees associated with an ecoin upon its receipt. Alternatively, as part of the value confirmation process, a report to the payee could include both whether or not the ecoin was valid, and its net value after the storage costs are deducted, and any other costs that might appropriately be charged by the emint, as for example, a processing charge for the confirmation or for handling the tender of the ecoin. Thus, for example, if a payee receives several ecoins with a value of 1.237 grams of gold, this weight of gold may be reduced, for example, to 1.235 grams, upon confirmation at the emint because of the storage fee they have accumulated while being held by the payer.

The client software can be set up by a payee to define what is an acceptable net value of ecoins received from the user (payer). If the storage fee is sufficiently high such that the net value of the ecoins is less than the acceptable net value, the ecoins are returned by the payee to the payer with notification of their rejection by the payee. The payer may then choose to forgo the transaction, or he must provide the payee with additional or substitute ecoins.

In another embodiment, the client software can be set up by a payee to define what is an acceptable storage cost to accept, and if the storage fee exceeds the predefined amount, the same process of rejection will occur.

In one embodiment of the invention, the value confirmation and tendering steps are not permissible as separate transactions, but instead are always performed concurrently. In such case, the default mode of operation will have the emint issue new ecoins and transmit them to the party requesting confirmation of ecoins, less the appropriate fees, whenever an ecoin is submitted for confirmation.

The anonymity and privacy of the payee is particularly protected where the payee simply requests issuance of a new ecoin (instead of a deposit to an existing account or conversion to national currency). In this case, the emint's process includes the following steps: (1) the emint records the serial numbers of the received ecoins to designate them as spent, (2) computes a confirmation fee and, if appropriate, a storage fee, (3) creates new ecoins (with different serial numbers) that represent the value of the old ecoins less the confirmation fee and any storage fee, and (4) then electronically sends the new ecoins to the payee. This payee can then make further payment transactions in the same way as the original user. It is noted that in this type of transaction, in order to preserve the anonymity of the payee, the emint may choose not to take note of the identity of who is being issued the new ecoins. The emint operates solely as a database for outstanding and spent ecoins. Its only functions are to confirm ecoins at a payee's request, issue new ecoins, and collect the appropriate confirmation and storage fees. The emint may also incorporate blind signatures into its Digital Hallmark™ to further advance user privacy.

An example of an asset based electronic cash system in accordance with the invention is shown in FIG. 1. Customer (i) 10 stores gold at a storage site 12 and requests the storage site to send him ecoins (arrow A). The storage site contacts the emint 14 and informs it of the receipt of new gold (arrow B).

The emint creates ecoins (not shown) whose total sum represents the exact weight of new gold and transfers the newly created ecoins to the storage site, each ecoin containing a Digital Hallmark™ used for verification purposes (arrow C). After obtaining the client software, which is necessary in order to receive ecoins from others and to confirm with the emint the value of each ecoin received, Customer(i) contacts the storage site to receive the ecoins and the ecoins are transferred to him (arrow D). The customer may then verify the Digital Hallmark™ applied thereto using the emint's public key. Customer(i) can also send the ecoins to the emint for confirmation (arrow E). The emint then confirms the value of the ecoins. As noted above, the emint may be set up so that upon a request for confirmation, the emint automatically retires the ecoins, deducts the confirmation and storage fees, then creates and sends back new ecoins to Customer(i) (arrow F).

Alternatively, the emint could transmit the ecoins directly to Customer (i), who can verify the Digital Hallmark™ applied thereto using the emint's public key.

Once Customer(i) receives the ecoins, he can transfer the ecoins while online to Customer(ii) 16, who also has the client software, for the payment of goods or services (arrow G). Customer(ii) then can send the ecoins to the emint for confirmation (arrow H). The emint then confirms and retires the coins, deducts storage and confirmation fees, then creates and sends new ecoins back to Customer(ii) (arrow I). Customer(ii) need not have an account relationship with the storage site. Customer(ii) can then send the ecoins to Customer(iii) 18, who also has the client software, for the payment of goods or services (arrow J).

Customer(iii) can then send the ecoins to the emint for confirmation (arrow K). The emint confirms and retires the ecoins, deducts storage and confirmation fees, then creates and sends new ecoins back to Customer(iii) (arrow L).

Ecoins are taken out of circulation when a party, such as Customer(iii), sends ecoins to the storage site and requests redemption of them into gold bullion (arrow M). The storage site sends the ecoins to the emint for confirmation, along with a message saying that the gold is being redeemed (arrow N). The emint verifies the ecoins, deducts the appropriate storage and confirmation fees, and sends a message back to the storage site stating the exact weight of gold left over (i.e., the weight of gold originally represented by the ecoins less the storage/confirmation fees) for redemption (arrow O). The storage site then ships the specified weight of gold bullion to the individual who requested it (arrow P), or enters a credit for an amount of gold held for safekeeping for Customer (iii) at the storage site, or takes such other actions as instructed.

It is to be appreciated that the foregoing is illustrative and not limiting of the invention, and that various changes and modifications to the preferred embodiments described above will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit

and scope of the present invention, and it is therefore intended that such changes and modifications be covered by the following claims.

What is claimed is:

1. An asset based electronic cash system comprising:

at least one storage site having secure facilities for storage of a valuable commodity;

an inventory of a valuable commodity stored in said secure facilities at a said storage site;

a computer system having:

means for maintaining records of the amount of said inventory of a valuable commodity stored in said secure facility;

means for creating electronic coins, said electronic coins comprising electronic data identifying a unique serial number and a specified amount of said valuable commodity, and having a digital signature for verifying that the electronic coins were created by said computer system;

means for transmitting said electronic coins to a system user;

means for receiving said electronic coins from a payee of said system user;

means for confirming that said electronic coins have not been previously spent;

the total of the amounts of said electronic coins issued by said computer system being less than or equal to the amount of said inventory of a valuable commodity stored in said secure facility;

said asset based electronic cash system permitting entities to conduct financial transactions by transfer of said electronic coins, whereby payment risk is eliminated.

2. A system in accordance with claim 1 where said valuable commodity comprises a precious metal.

3. A system in accordance with claim 2 wherein said precious metal comprises gold.

4. A system in accordance with claims 1 wherein said electronic data of said electronic coins further comprise:

a name of said storage site where said valuable commodity is stored;

a date, wherein said date represents the date when said electronic coin was created.

5. A system in accordance with claim 4 wherein said system user may request issuance of blinded electronic coins such that a user who receives said electronic coins maintains his anonymity.

6. A system in accordance with claims 1, 2, 3, 4 or 5 wherein said confirming means comprises a database of said serial numbers of said electronic coins wherein a recipient of a first electronic coin may submit said first electronic coin to said computer system to determine if said first electronic coin has been previously spent.

7. A system in accordance with claim 6 wherein said computer system checks said database of said serial numbers to ensure that said first electronic coin has not been previously spent, and if said first electronic coin has not been previously spent then said computer system records said first electronic coin as spent, and creates a second electronic coin and transmits said second electronic coin to said recipient.

8. A system in accordance with claim 7 wherein said computer system subtracts an amount representing transactional costs from a specified amount of said valuable

commodity identified in said first electronic coin to determine a specified amount of said valuable commodity identified in said second electronic coin.

9. A system in accordance with claim 8 wherein said transactional costs include a storage fee, and wherein said storage fee is determined based on a period of time since the date when said electronic coin was created, said date when said electronic coin was created being contained in said electronic data contained in said electronic coin.

10. A system in accordance with claim 8 wherein said transactional costs include a fee for performing said

confirming that said electronic coin has not been previously spent.

11. A system in accordance with claim 6 wherein said recipient of a first electronic coin may request that said electronic coin be redeemed for one or more of the group consisting of a second electronic coin; a credit to an account of the recipient; and issuance of a funds transfer to an account of a third party.

\* \* \* \* \*

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

GM NETWORK LIMITED and  
NET TRANSACTIONS LIMITED,

Plaintiffs,

v.

E-GOLD LTD., GOLD & SILVER  
RESERVE INC., DIGIGOLD LTD.,  
DOUGLAS JACKSON, BARRY K.  
DOWNEY, THE JACKSON FAMILY  
TRUST, THE DOWNEY FAMILY TRUST,  
BAXTER, BAKER, SIDLE, CONN &  
JONES, P.A., HILDEBERTO S. DE FRIAS,  
MICHAEL J. MELLO and DOES 1-10,  
inclusive,

Defendants.

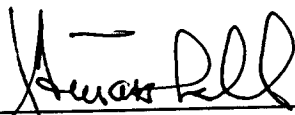
01 CV 9621

Civil Action No.

**DISCLOSURE OF INTERESTED PARTIES UNDER LOCAL RULE 1.9**

Pursuant to Rule 1.9 of the Local Rules of the United States District Court for the Southern District of New York and to enable judges and magistrate judges of the Court to evaluate possible disqualification or recusal, the undersigned counsel for Plaintiffs (private non-governmental parties) certifies that no corporate parents, affiliates and/or subsidiaries of said parties are publicly held.

Dated: October 31, 2001

  
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GM Network Limited and  
Net Transactions Limited



(PLACE AN x IN ONE BOX ONLY)

☒ 1 Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from (Specify District) ☐ 6 Multidistrict Litigation ☐ 7 Appeal to District Judge from Magistrate Judge Judgment

(PLACE AN x IN ONE BOX ONLY)

☐ 1 U.S. PLAINTIFF ☐ 2 U.S. DEFENDANT ☒ 3 FEDERAL QUESTION (U.S. NOT A PARTY) ☐ 4 DIVERSITY

IF DIVERSITY, INDICATE  
CITIZENSHIP BELOW.  
(28 USC 1322, 1441)

CITIZENSHIP OF PRINCIPAL PARTIES (FOR DIVERSITY CASES ONLY)

(Place an [X] in one box for Plaintiff and one box for Defendant)

CITIZEN OF THIS STATE	PTF DEF [ ] [ ]	CITIZEN OR SUBJECT OF A FOREIGN COUNTRY	PTF DEF [ ] [ ]	INCORPORATED and PRINCIPAL PLACE OF BUSINESS IN ANOTHER STATE	PTF DEF [ ] [ ]
CITIZEN OF ANOTHER STATE	[ ] [ ]	INCORPORATED or PRINCIPAL PLACE OF BUSINESS IN THIS STATE	[ ] [ ]	FOREIGN NATION	[ ] [ ]

PLAINTIFF(S) ADDRESS(ES) AND COUNTY(IES) (Calendar Rule 4(A))

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DEFENDANT(S) ADDRESS(ES) AND COUNTY(IES) (Calendar Rule 4(A))

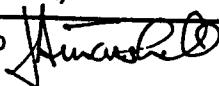
SEE ATTACHMENT

DEFENDANT(S) ADDRESS UNKNOWN

REPRESENTATION IS HEREBY MADE THAT, AT THIS TIME, I HAVE BEEN UNABLE, WITH REASONABLE DILIGENCE, TO ASCERTAIN THE RESIDENCE ADDRESSES OF THE FOLLOWING DEFENDANTS:

Check one: THIS ACTION SHOULD BE ASSIGNED TO: ☐ WHITE PLAINS ☒ FOLEY SQUARE  
(DO NOT check either box if this a PRISONER PETITION.)

DATE 31 Dec 01 SIGNATURE OF ATTORNEY OF RECORD



ADMITTED TO PRACTICE IN THIS DISTRICT

[ ] NO

☒ YES (DATE ADMITTED Mo. Aug Yr. 1967)

Attorney Bar Code # JM7664

RECEIPT #

Magistrate Judge is to be designated by the Clerk of the Court.

Magistrate Judge \_\_\_\_\_ is so Designated.

James M. Parkison, Clerk of Court by \_\_\_\_\_ Deputy Clerk, DATED \_\_\_\_\_

UNITED STATES DISTRICT COURT (NEW YORK SOUTHERN)

**Attachment to Civil Cover Sheet**

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