

microprinting is applied to print micro-text on a small space such as on a postage stamp or a credit card. Other examples include designating a special paper, or designating a hologram or watermark pattern impressed on a paper, or designating a high-resolution printing technique to print the hardcopy document thereon.

[0161] The invention provides a method for forming a new market by providing a server and a plurality of issuing machines connected to the server via a network.

[0162] The principles, preferred embodiments and modes of operation of the present invention have been described in the foregoing specification. However, the invention which is intended to be protected is not limited to the particular embodiments disclosed. The embodiments described herein are illustrative rather than restrictive. Variations and changes may be made by others, and equivalents employed, without departing from the spirit of the present invention. Accordingly, it is expressly intended that all such variations, changes and equivalents which fall within the spirit and scope of the present invention as defined in the claims, be embraced thereby.

1. An issuing machine for transacting a hardcopy certificate comprising:

receiving means for receiving an ID recording medium provided by a potential purchaser;

information retrieving means for retrieving identification recoded in the received ID recording medium;

input means for the potential purchaser to input request for a transaction of a security or fixed rate financing instrument;

transaction processing means for processing the requested transaction by retrieving information via a network from a server; and

printing means for printing out said hardcopy certificate as purchased by the potential purchaser and a cryptographic checksum thereon.

2. The issuing machine according to claim 1, further comprising scanning means for scanning a hardcopy document inserted by a holder, and determining means for determining whether the hardcopy document was issued by an issuing machine linked with the issuing machine according to at least a scanned cryptographic checksum.

3. The issuing machine according to claim 2, wherein said printing means further prints a random pattern on said hardcopy certificate, said scanning means scans said hardcopy certificate with the random pattern prior to providing said hardcopy certificate to the purchaser.

4. The issuing machine according to claim 2, wherein said scanning means scans a hardcopy document inserted by a holder, and said determining means determines the hardcopy document as not issued by an issuing machine linked with the issuing machine if the hardcopy document does not contain the random pattern.

5. The issuing machine according to claim 2, wherein said determining means determines the hardcopy document as issued by an issuing machine linked with the issuing machine, said transaction processing means purchases back the hardcopy document at a market price, or converts the hardcopy document into an electronic certificate for the holder.

6. The issuing machine according to claim 5, wherein said electronic certificate is sent to any e-mail account of a person or an institute as directed by the holder.

7. The issuing machine according to claim 6, wherein said institute is a securities depository or breakage.

8. The issuing machine according to claim 7, wherein the holder sets a limit or stop order to sell the electronic certificate via the securities breakage.

9. The issuing machine according to claim 2, wherein if said determining means determines the hardcopy document as not issued by an issuing machine linked with the issuing machine, said transaction processing means either returns the hardcopy certificate to the holder, or instructs said printing means to print "VOID" on the hardcopy certificate and stores it locally.

10. The issuing machine according to claim 1, wherein the hardcopy certificate is the security or fixed rate financing instrument.

11. The issuing machine according to claim 2, wherein said printing means further prints out said hardcopy certificate with a watermark or a hologram.

12. The issuing machine according to claim 2, wherein said printing means prints out said hardcopy certificate on a heavy paper, a colored paper, a forensic fiber paper, or a paper embedded with metallic or UV sensitive threads.

13. The issuing machine according to claim 2, wherein said printing means prints the cryptographic checksum on said hardcopy certificate in a microprinting font.

14. The issuing machine according to claim 1, wherein said cryptographic checksum is generated by using a cryptographic algorithm and information other than said cryptographic checksum to be printed on said hardcopy certificate.

15. The issuing machine according to claim 14, wherein the cryptographic algorithm is a keyed-hash function H.

16. The issuing machine according to claim 15, wherein K_B denotes a certificate key held by the server, Y denotes the information other than said cryptographic checksum to be printed on said hardcopy certificate, the cryptographic checksum is obtained by applying the keyed-hash function H to the key K_B and the information Y as $H(K_B, Y)$.

17. The issuing machine according to claim 16, wherein said transaction processing means uses a different certificate key K_A to communicate with the server.

18. The issuing machine according to claim 16, wherein the server uses different certificate keys K_B for different classes of hardcopy certificates.

19. An issuing system for a newly-issued security or fixed rate financing instrument comprising:

a server; and

a plurality of issuing machines connected to the server via a network, each of the issuing machines including:

receiving means for receiving an ID recording medium provided by a potential purchaser;

information retrieving means for retrieving identification recoded in the received ID recording medium;

input means for the potential purchaser to input request for a transaction of a security or fixed rate financing instrument;