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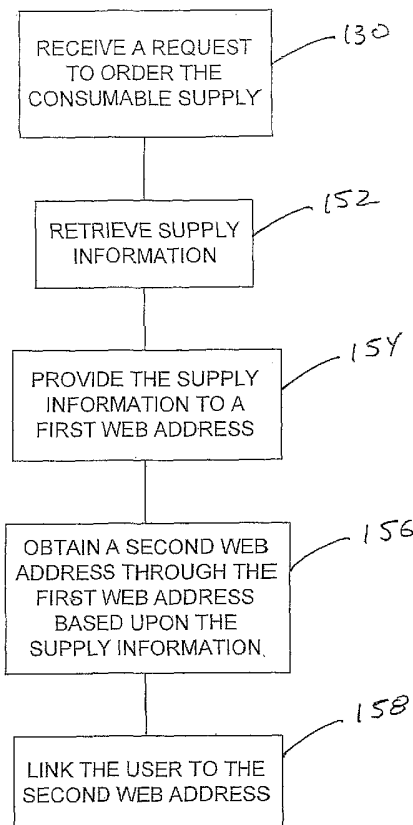
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(54) Title: IDENTIFICATION CARD MANUFACTURING SYSTEM SUPPLY ORDERING AND DIAGNOSTIC REPORT



(57) Abstract: In a method of ordering a consumable supply 108 produced by a card manufacturing device (102) of an identification card manufacturing system (100), a request to order the consumable supply is received from a user (step 130). Next, supply information (112) relating to the supply is retrieved (step 152) and the supply information is provided to a first web address (step 154). Finally, a second web address, which is different from the first web address and is associated with the supply, is retrieved through the first web address based upon the supply information (step 156). A diagnostic report (200) includes a list of current settings (212) including current default settings (214) that match default settings for the device. The current default settings also include modified settings (216) that are different from the default settings for the device, wherein the modified settings are highlighted to thereby visibly distinguish them from the current default settings.

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**IDENTIFICATION CARD MANUFACTURING SYSTEM
SUPPLY ORDERING AND DIAGNOSTIC REPORT**

FIELD OF THE INVENTION

The present invention generally relates to
5 identification card manufacturing systems and, more
particularly, to a diagnostic reports and supply
ordering method for said systems.

BACKGROUND OF THE INVENTION

Identification card manufacturing systems
10 generally include a computer, at least one card
manufacturing application running on the computer, and
at least one identification card manufacturing device
such as an identification card printer or laminator. In
the case of an identification card printer, the card
15 manufacturing application can combine textual and
graphical information to form a print job corresponding
to an image that is to be printed by the identification
card printer. The print job can then be processed by
the identification card printer by printing an image to
20 a card substrate fed from a card supply using a thermal
print mechanism or an ink jet print mechanism. The
thermal print mechanism utilizes a thermal print ribbon
supply, whereas the ink jet print mechanism utilizes an
ink cartridge supply. When the identification card
25 manufacturing device is a laminator, the card producing
application can control the operation of the
identification card laminator to laminate the printed
card using an overlamine supply. Other identification
card processing devices, such as data encoders and card

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flippers, can also be controlled by the identification card manufacturing application.

Such systems are typically shipped with the components configured in accordance with default
5 factory settings. The settings relate to driver settings for the card manufacturing device, component settings for the card manufacturing device (e.g., printer settings), and other default settings. The user of the system has the ability to modify some of the
10 default settings of the system to tailor the system to his or her needs. Unfortunately, modifications to the default settings can complicate troubleshooting efforts should problems arise. It would, therefore, be desirable to be able to quickly identify how the system
15 has been modified from the default settings to assist support personnel in the troubleshooting process.

In an effort to provide improved security from identification card counterfeiting, some consumable supplies are now customized for the user by providing
20 them with a memory containing supply information that can be used to limit the use of the supply with only the user's identification card manufacturing system. One purpose of such a practice is to prevent the generation of fraudulent cards through the unauthorized
25 use of the supplies with other card manufacturing systems.

The supplies and the card manufacturing systems are preferably customized for the user by a particular dealer. It is preferable for the user to contact the

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same dealer for submitting orders for new supplies as well as to receive support for the user's card manufacturing system.

There is a continuing need to make the use of
5 identification card manufacturing systems as convenient for the user as possible. For example, it would be desirable to improve the ordering process for the consumable supply through use of the supply information contained in the memory of the supply to direct the
10 user to their particular dealer.

SUMMARY OF THE INVENTION

One aspect of the present invention is generally directed to a method of ordering a consumable supply produced by a card manufacturing device of an
15 identification card manufacturing system. In the method, a request to order the consumable supply is received from a user. Next, supply information relating to the supply is retrieved and the supply information is provided to a first web address. Finally, a second
20 web address, which is different from the first web address and is associated with the supply, is retrieved through the first web address based upon the supply information.

Another aspect of the present invention is
25 directed to a diagnostic report for a card manufacturing system that includes a card manufacturing device. The diagnostic report includes a list of current settings including current default settings that match default settings for the device. The current

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default settings also includes modified settings that are different from the default settings for the device. The modified settings are highlighted to thereby visibly distinguish them from the current default
5 settings. Additional embodiments of the invention are directed to a method of generating the diagnostic report.

Other features and benefits that characterize embodiments of the present invention will be apparent
10 upon reading the following detailed description and review of the associated drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of an identification card manufacturing system in accordance with
15 embodiments of the invention.

FIG. 2 is a flow chart illustrating a method of ordering a consumable supply in accordance with embodiments of the invention.

FIGS. 3 and 4 are a screen shots of an interface
20 for an identification card manufacturing system in accordance with embodiments of the invention.

FIG. 5 is a screen shot of a supply information window in accordance with embodiments of the invention.

FIG. 6 is a screen shot of an exemplary web page
25 that is associated with a second web address in accordance with embodiments of the invention.

FIG. 7 is a diagnostic report in accordance with embodiments of the invention.

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FIG. 8 is a screen shot of a diagnostic window in accordance with embodiments of the invention.

FIG. 9 is a flowchart illustrating a method of generating a diagnostic report for a card manufacturing system in accordance with embodiments of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 is a block diagram of an identification card manufacturing system 100 in accordance with embodiments of the invention. The system 100 includes at least one card manufacturing device 102, which operates to process card substrates 104 to form identification cards. For example, the card manufacturing device 102 can be an identification card printer, an identification card laminator, or other card manufacturing device that includes at least one card processing device 106 that utilizes a consumable supply 108.

Identification card printers utilize card processing devices 106 in the form of thermal printheads that are configured to apply dye from a print ribbon supply 108 to a surface of the card substrate 104, or ink jet printheads that are configured to apply an ink supply 108 from an ink cartridge to the surface of the card substrate. Identification card laminators, on the other hand, typically utilize overlamine supplies 108 including those having security marks, such as holograms, that are applied to printed surfaces of the card substrate

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104 using a card processing device 106 in the form of a heated roller and platen.

The consumable supplies 108 preferably include a memory 110, in which supply information 112 is contained. The supply information 112 includes information that identifies the supply 108, such as a part number, dealer information, a default quantity (e.g., starting amounts) of the supply, a customer number, and a price for the supply 108, for example. Additionally, the consumable supply 108 can be a customized supply that includes security data, such as a customer specific security code, which is used to determine whether the supply is authorized for use with the card manufacturing device 102. Unlike traditional supplies, such customized supplies and systems are preferably sold to the user by a specific dealer, who the user must return to for additional customized supplies 108, new card manufacturing devices 102, and other products relating to the user's system 100. Additionally, support for the user's system is preferably provided by the user's dealer. Examples of such supplies 108 are described in U.S. Patent Application No. 10/372,011 and U.S. Patent Application No. 10/722,377, both of which are assigned to Fargo Electronics, Inc., and are incorporated herein by reference in their entirety.

Typical card manufacturing devices 102 operate to process a card processing job, such as a print job, that is produced by a card producing application 114

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stored in memory 116 that is accessible by a computer 118. Alternatively, memory 119 of the card manufacturing device 102 can include the card processing application 114. The user of the system 100
5 can view an application interface provided on a display 120 and operate the application 114 through an input device 122 of the computer 118, such as a keyboard, mouse, etc., to form the card processing job.

The card-processing job is presented to a
10 controller 124 of the card manufacturing device 102 through a suitable driver application stored in memory 114 of the computer 118 or memory 119 of the card manufacturing device 102. The controller 124 controls the card processing devices 106 of the card
15 manufacturing device 102 to perform the desired operation on the card substrate 104 and complete the processing of the card processing job, in accordance with conventional methods.

SUPPLY ORDERING

20 One aspect of the present invention is directed to a method of ordering the consumable supply 108 for the card manufacturing device 102. The method is generally implemented by a computer application or program, such as the card producing application 114, in combination
25 with a web browser 126. Those skilled in the art understand that other computer programs and applications including applications that may not directly relate to identification card production, such as a security application, could be executed to

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implement the supply ordering method of the present invention. Accordingly, the card producing application 114, as used herein, is not intended to describe only computer applications that are used to manufacture identification cards, but to also describe computer applications that may serve other purposes than card manufacture.

As with the application 114, the card manufacturing device 102 can include the web browser 126 in the memory 119, as shown in FIG. 1, and as described in U.S. Patent Application No. 09/739,080, which is assigned to Fargo Electronics, Inc. of Eden Prairie, Minnesota.

FIG. 2 is a flowchart illustrating the online ordering method in accordance with embodiments of the invention. At step 130, a request to order the consumable supply 108 of the card manufacturing device 102 is received from a user of the system 100. The request is provided by the user in response to the selection of an option, such as icon 132 as provided in a window 134, shown in FIG. 3, that is generated by the card producing application 114 or the driver software for the card manufacturing device 102.

In accordance with one embodiment of the invention, an authorization routine is triggered following the generation of the order request and a security check is made to determine whether the user is authorized to order the consumable supply 108. In accordance with one embodiment of the invention, the

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authorization routine includes prompting the user to enter an identification of the card manufacturing device 102 and/or a customer number, and a password, as shown in the screen shot of FIG. 4. Once the information has been entered by the user, the user continues by selecting button 140.

In accordance with another embodiment of the invention, a supply ordering option is provided to the user automatically when the amount of the consumable supply 108 is determined to be low. For instance, periodic checks of the supply 108 are made to determine whether the amount of remaining supply has dropped below a threshold level. This can be accomplished through decrementing an initial amount of the supply 108 that is stored in the memory 110 as the supply 108 is used, and notifying the user of the low supply amount once it has dropped below the threshold level. Alternatively, sensors can be used to measure a level of the consumable supply 108, such as ink, and notify the user that the supply 108 has dropped below a threshold level.

Upon detection of the low amount of the supply 108, the driver application or card producing application 114 can display a supply information window 142 to the user, such as that illustrated in FIG. 5. The displayed supply information preferably includes, for example, an identification of one or more of the supplies 108 (such as at 144), information regarding the amount of consumable supply remaining (e.g., a bar

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graph 146, a percentage, etc.), and dealer information 148. A button 150 or other option that can be selected by the user to generate the request to order more of the supply 108.

5 The supply information can also be displayed to the user prior to the remaining consumable supply 108 dropping below the threshold, through the selection of a print supplies option within the driver application or card producing application 114, the selection of
10 which can produce the window 142 of FIG. 5. As a result, the user can submit a request to order the supply 108 at any time.

 Referring again to the flowchart of FIG. 2, at least a portion of the supply information 112 is
15 retrieved, at step 152 of the method. As mentioned above, the supply information 112 can include information that is specific to the supply and/or to the customer or owner of the supply 108. In general, the retrieved supply information 112 can be used to
20 identify, or retrieve information (e.g., contact information) relating to, the customer or user of the system 100, the particular dealer of the user's system and supplies, and/or the card manufacturing device 102. Preferably, the retrieved supply information 112 only
25 provides a unique identifier (e.g., a customer number, dealer number, etc.) that is associated with the desired information such that it can be obtained from a relational database. For example, the supply information 112 can include a parts number for the

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supply, which may be unique for the particular customer, and/or a customer number that identifies the customer of the supply. Additionally, the supply information 112 can include dealer information for the
5 supply that identifies the user's particular dealer (i.e., one of many dealers), a default quantity of the supply, a price for the supply, customer contact information, and other information related to the supply and/or the customer.

10 In accordance with one embodiment of the invention, at least some of the supply information 112 is retrieved from the memory 110 that is attached to the supply 108. A discussion of such a supply and the methods of customizing card manufacturing devices 102
15 and supplies 108 for limited use is provided in U.S. Patent Application No. 10/372,011, which is assigned to Fargo Electronics, Inc. and is hereby incorporated herein by reference in its entirety. Additional supply information can be retrieved from other conventional
20 sources, such as memory 116 that is accessible by the computer 118, memory 119 of the device 102, and other sources.

At step 154 of the method, the retrieved supply information 112 is provided to a first web address. The
25 first web address generally corresponds to a master web site whose server has access to a preferably secure database that contains information that is associated with the retrieved supply information 112.

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At step 156, a second web address is obtained through the first web address based upon the retrieved supply information 112. The second web address is different from the first web address and generally corresponds to a dealer web site where the supply 108 can be ordered by the user in accordance with conventional methods. In accordance with one embodiment of the invention, the second web address is retrieved from the secure database and is associated with the retrieved supply information 112. In addition to the second web address, the secure database can also retrieve other information based upon the supply information 112, such as dealer contact information, order history, and other information relating to the supply 108 and/or the customer of the supply 108.

In accordance with one embodiment of the invention, the user is linked to the second web address, at step 158 of the method. An exemplary web page corresponding to the second web address is illustrated in FIG. 6, at which the user can preferably obtain information about the supply 108 and begin the ordering process for the supply 108. The steps 152, 154, 156 and 158 are preferably performed automatically upon receipt of the order request. However, the user may be prompted at times to enter a customer number or other identification and a password to prevent unauthorized people from ordering the supply 108.

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DIAGNOSTIC REPORT

Another aspect of the present invention relates to a diagnostic report 200 for the system 100, an exemplary display of which is provided in FIG. 7. The
5 diagnostic report 200 generally provides information about the system 100 including the card manufacturing device 102 and other components. This information can be divided into various categories such as, for example, driver settings 202, card manufacturing device
10 settings including printer or laminator settings 204, computer settings 206, and status information 208 (e.g., card manufacturing device states). Diagnostic report 200 can also include other types of information including card manufacturing device information such as
15 a model or serial number, customer information such as a customer number, and dealer information that includes the name of the dealer, contact information for the dealer, and other useful information. The diagnostic report 200 can be submitted to technical support, which
20 is preferably provided by the user's specific dealer, to assist in troubleshooting the system 100.

The information contained in the diagnostic report can be retrieved from the memory 119 of the device 102, the memory 110 of the supply 108, the memory 116 that
25 is accessible by the computer 118, provided to the user on a CD, or otherwise accessible by the system 100.

In accordance with one embodiment of the invention, an option, such as a button 209, for generating the diagnostic report 200 is provided in a

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diagnostics window 210 (FIG. 8) that is accessed by selecting the appropriate option 211 in the main device window 134 (FIG. 3). The diagnostics window 210 is generated by the card producing application 114 or the
5 driver software for the card manufacturing device 102. The diagnostic report 200 is preferably automatically generated in response to the selection of the button 209, or in response to another request for the generation of the diagnostic report 200.

10 One embodiment of the diagnostic report 200 includes a list of current settings, generally designated as 212, that includes current default settings 214 and modified settings 216 for the card manufacturing device 102. The current default settings
15 214 match the default settings for the card manufacturing device 102 that are set at the manufacturing facility or dealer. The modified settings 216 are different from the default settings for the card manufacturing device 102, including the current
20 default settings 214, and are highlighted in the diagnostic report 200 to thereby visibly distinguish them from the current default settings 214.

The highlighting of the modified settings 216 allows the reviewer of the diagnostic report 200 to
25 quickly assess where modifications have been made to the system 100 in order to speed up the troubleshooting process. Many different methods of highlighting the modified settings 216 can be used to visibly distinguish them from the current default settings 214.

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For example, the modified settings 216 can be presented in a different color (see e.g., the current "Die Sub Intensity" setting) as compared to the current default settings 214 (see e.g., the current "Temp" setting), or
5 the modified settings 216 can be presented in a different font or size (see e.g., the current "Overlay Print-Areal" setting) as compared to the current default settings 214.

Additional techniques that can be applied to
10 either the modified settings 216 or the current default settings 214 to highlight and visibly distinguish the modified settings 216 from the current default settings 214 include, for example, underlining (see e.g., the current "Image Darkness" setting), surrounding the
15 setting in a text box (see e.g., the current "Firmware Version" setting), or presenting the modified settings 216 with a different colored background than the current default settings 214 (see e.g., the current "Firmware Version" setting). It should be understood
20 that the present invention is not limited to the above list of highlighting techniques and that many other techniques can be used to provide the desired visibly distinguishing characteristic to the modified settings as compared to the current default setting.

25 Diagnostic report 200 can also include a list of the default settings 230 that were originally set at the factory. The default settings 230 are preferably positioned adjacent to the corresponding current

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setting 212. Alternatively, the default setting 230 can be provided adjacent to only the modified settings 216.

In accordance with another embodiment of the invention, additional troubleshooting assistance can be provided by listing a date 232 at which the modified settings 216 came into effect adjacent each modified setting 216.

One embodiment of the present invention is directed to a method of generating the diagnostic report 200, a flowchart of which is provided in FIG. 9. At step 240 of the method, the current print settings 212 for the card manufacturing device 102 are compared to the default settings 230 to determine which of the current print settings 212 are current default settings 214 that match the corresponding default settings 230, and which are modified settings 216 that do not match the corresponding default settings 230. Finally, at step 242, a diagnostic report 200 is generated including a list of the current default settings 214 and the modified settings 216 as described above. Accordingly, the modified settings 216 are highlighted to thereby visibly distinguish them from the current default settings 214.

Although the present invention has been described with reference to preferred embodiments, workers skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention.

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WHAT IS CLAIMED IS:

1. A method of ordering a consumable supply of a card manufacturing device comprising steps of:
receiving a request to order a consumable supply of the device from a user;
retrieving supply information relating to the supply;
providing the supply information to a first web address; and
retrieving a second web address through the first web address based upon the supply information, wherein the second web address is different from the first web address and is associated with the supply.
2. The method of claim 1, including steps of:
checking whether the consumable supply is low;
notifying a user of the device that the supply is low; and
providing supply ordering options to the user.
3. The method of claim 1 including linking the user to the second web address.
4. The method of claim 1, wherein the supply information is contained in a memory of the supply.
5. The method of claim 4, wherein the supply information includes information selected from a group consisting of a part number for the consumable supply, dealer information for the supply, a default quantity of the supply, a customer number, and a price for the supply.

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6. The method of claim 1, including providing ordering options to the user for the supply at the second web address.

7. A diagnostic report for a card manufacturing system that includes a card manufacturing device, the diagnostic report comprising:

a list of current settings including current default settings that match default settings for the device; and

modified settings that are different from the default settings for the device, wherein the modified settings are highlighted to thereby visibly distinguish them from the current default settings.

8. The report of claim 7, wherein the current settings are separated into one or more categories selected from a group consisting of driver settings, card manufacturing device settings, computer settings, and card manufacturing device states.

9. The report of claim 8, wherein the card manufacturing device settings include a model number and a serial number.

10. The report of claim 7, wherein the list includes dealer information.

11. The report of claim 7, wherein the list includes default settings.

12. The report of claim 11, wherein the default settings are presented adjacent the corresponding current settings.

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13. The report of claim 7, wherein the modified settings are presented in a different color than the current default settings.

14. The report of claim 7, wherein the modified settings are presented in a different font than the current default settings.

15. The report of claim 7, wherein the modified settings are presented in a different size than the current default settings.

16. The report of claim 7, wherein the modified settings are have a different background color than the current default settings.

17. A method of generating a diagnostic report for a card manufacturing system that includes a card manufacturing device, the method comprising steps of:

comparing current settings of the card manufacturing device to corresponding default settings for the card manufacturing device to determine which of the current settings are current default settings that match the corresponding default settings, and which of the current settings are modified settings that do not match the corresponding default settings; and

generating a diagnostic report including a list of the current default settings and the modified settings, wherein the modified settings are highlighted to thereby visibly

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distinguish them from the current default settings.

18. The method of claim 17, wherein the generating step includes grouping related current default settings and modified settings into categories in the list.

19. The method of claim 18, wherein the categories are selected from a group consisting of driver settings, card manufacturing device settings, computer settings, and card manufacturing device states.

20. The method of claim 18, wherein the card manufacturing device settings include a model number and a serial number.

21. The method of claim 17, wherein the report includes dealer information.

22. The method of claim 17, wherein the default settings are presented in the report adjacent corresponding current settings.

23. The method of claim 17, wherein the modified settings are presented in the report in a different color than the current default settings.

24. The method of claim 17, wherein the modified settings are presented in the report in a different font than the current default settings.

25. The method of claim 17, wherein the modified settings are presented in the report in a different size than the current default settings.

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26. The method of claim 17, wherein the modified settings are presented in the report with a different background color than the current default settings.

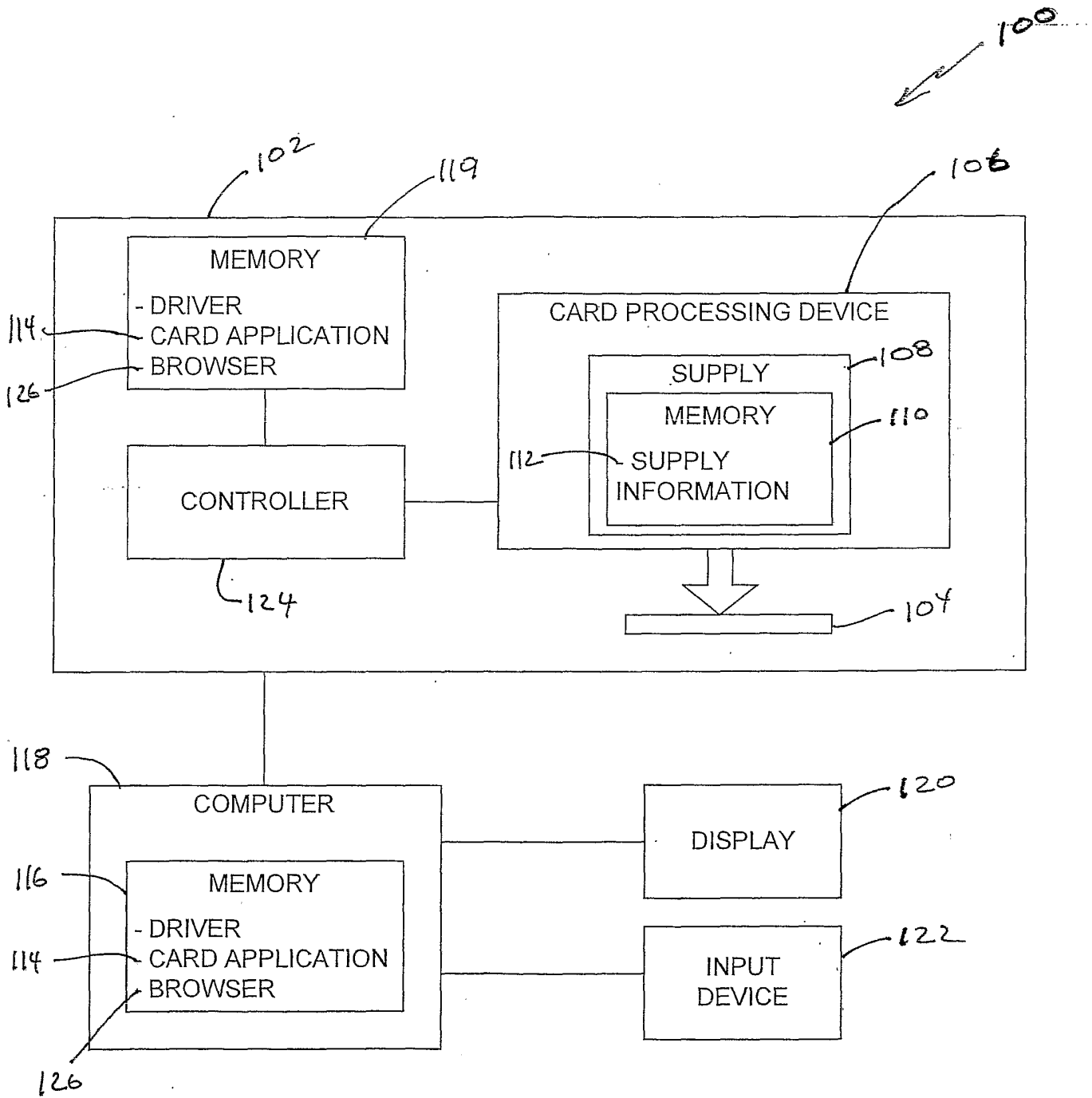


FIG. 1

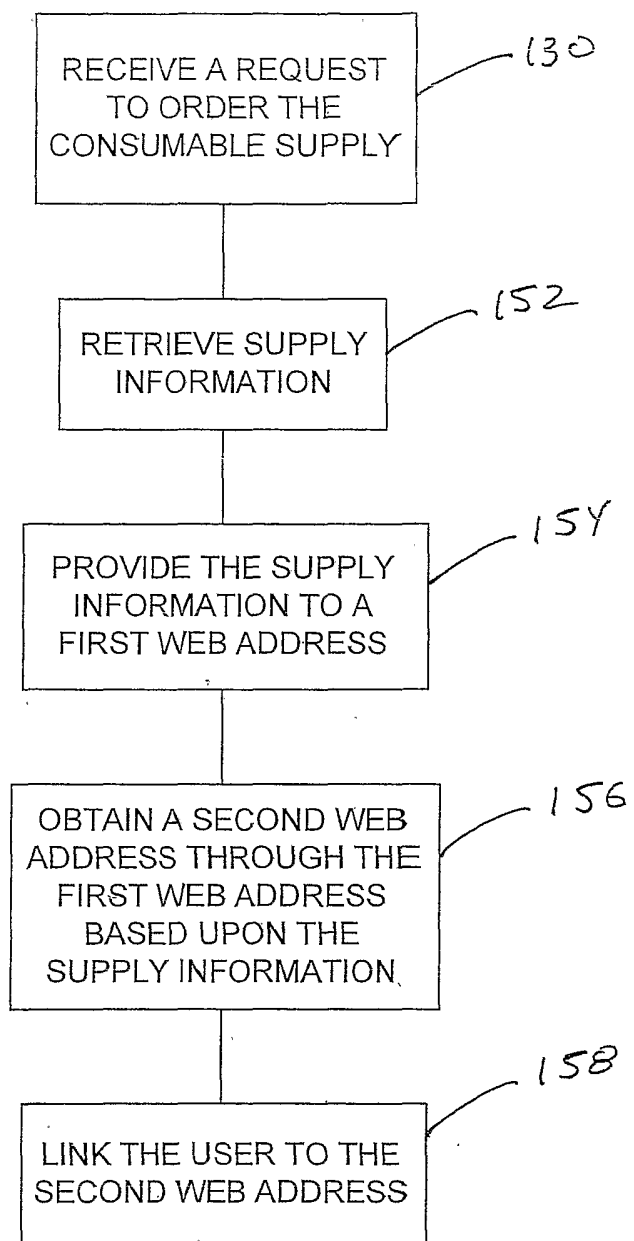


FIG. 2

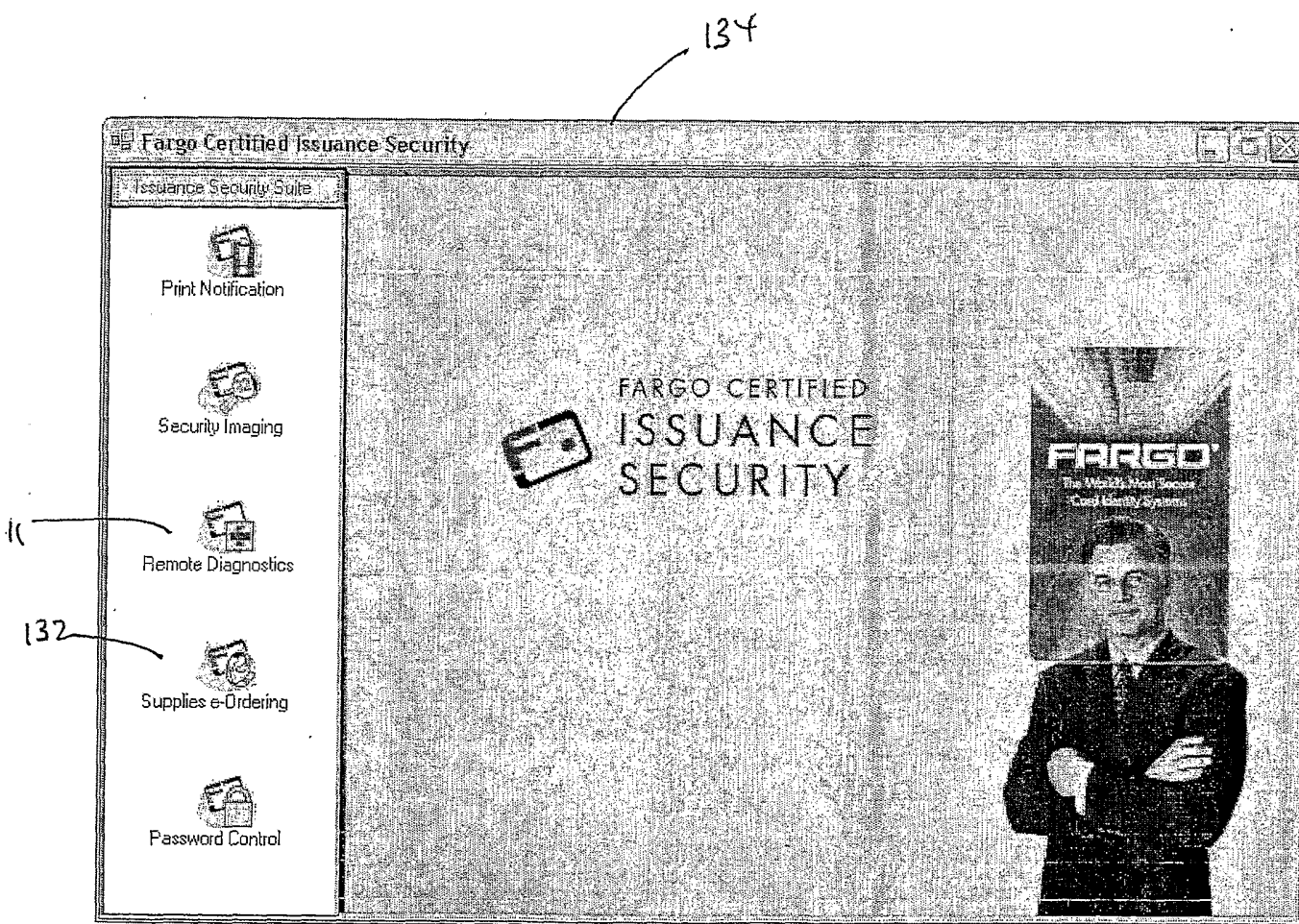


FIG. 3

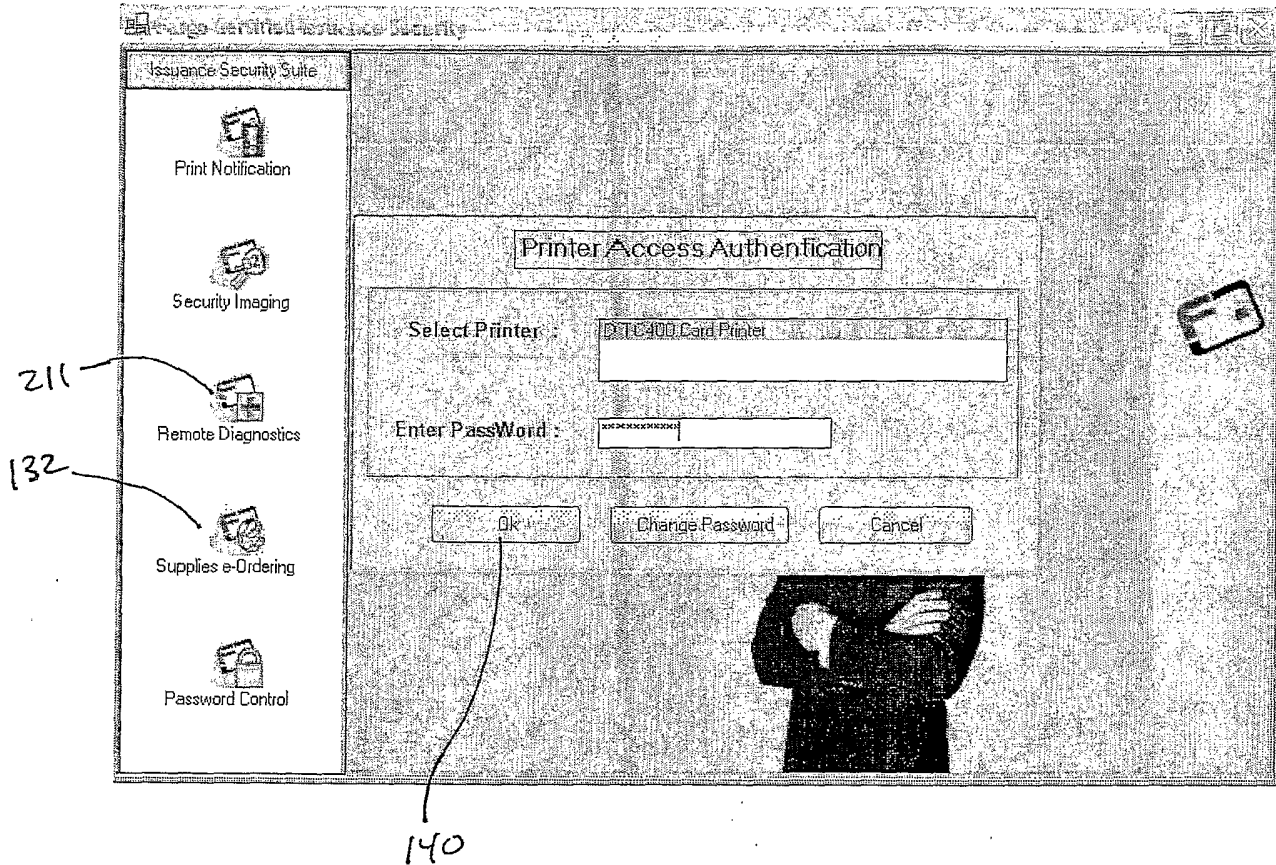


FIG. 4

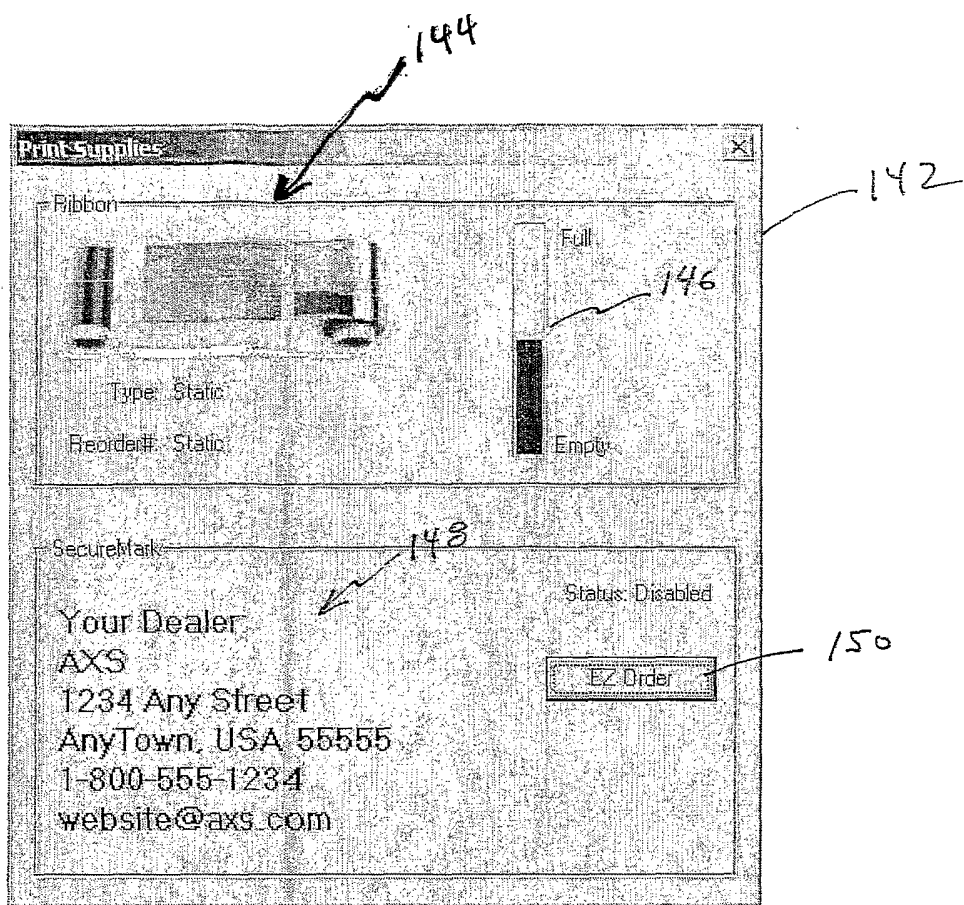


FIG. 5

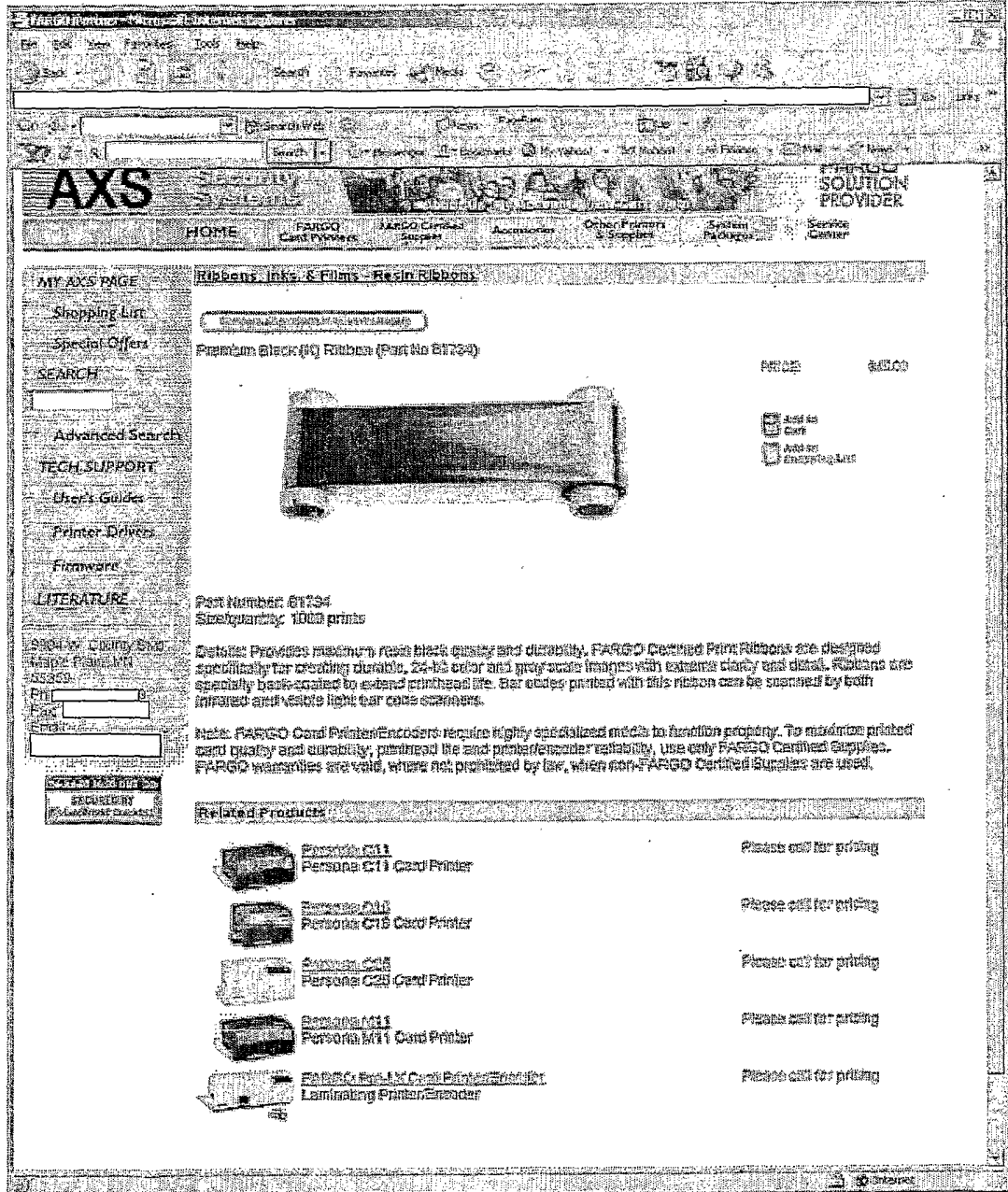


FIG. 6

SecureMark Diagnostics Report



7/25/04

Printer: **DTC525LC Mag**

Serial Number: **A301938292**

Property

Current

Factory Default

Driver Settings:

Ribbon Type		YMCKO	
Lamination Type			Polyguard
Temp	214	180	180
Dwell Time		1	1
Card Size	216	CR-80	
Die Sub Intensity		10	15
Resin Heat	214	200	200
Mag Coercivity		Hi Co	Hi Co
Overlay Print Area		VisSecur	none
Print All Black with K Panel	216	no	yes

Printer Settings:

Image Darkness	216	+20 (4/16/04)	+3
TOF	214	-2	-2
Encoder Settings		44	44
Firmware Version		1.2.3	1.1.1

PC Settings:

Operating System	216	Win2000	
Communication Port		USB 1	
Hard Drive Space Available		234 M	
Memory		512 M	

Printer States:

Door Open		no	
Ribbon Installed		yes	
RFID Detected		yes	

FIG. 7

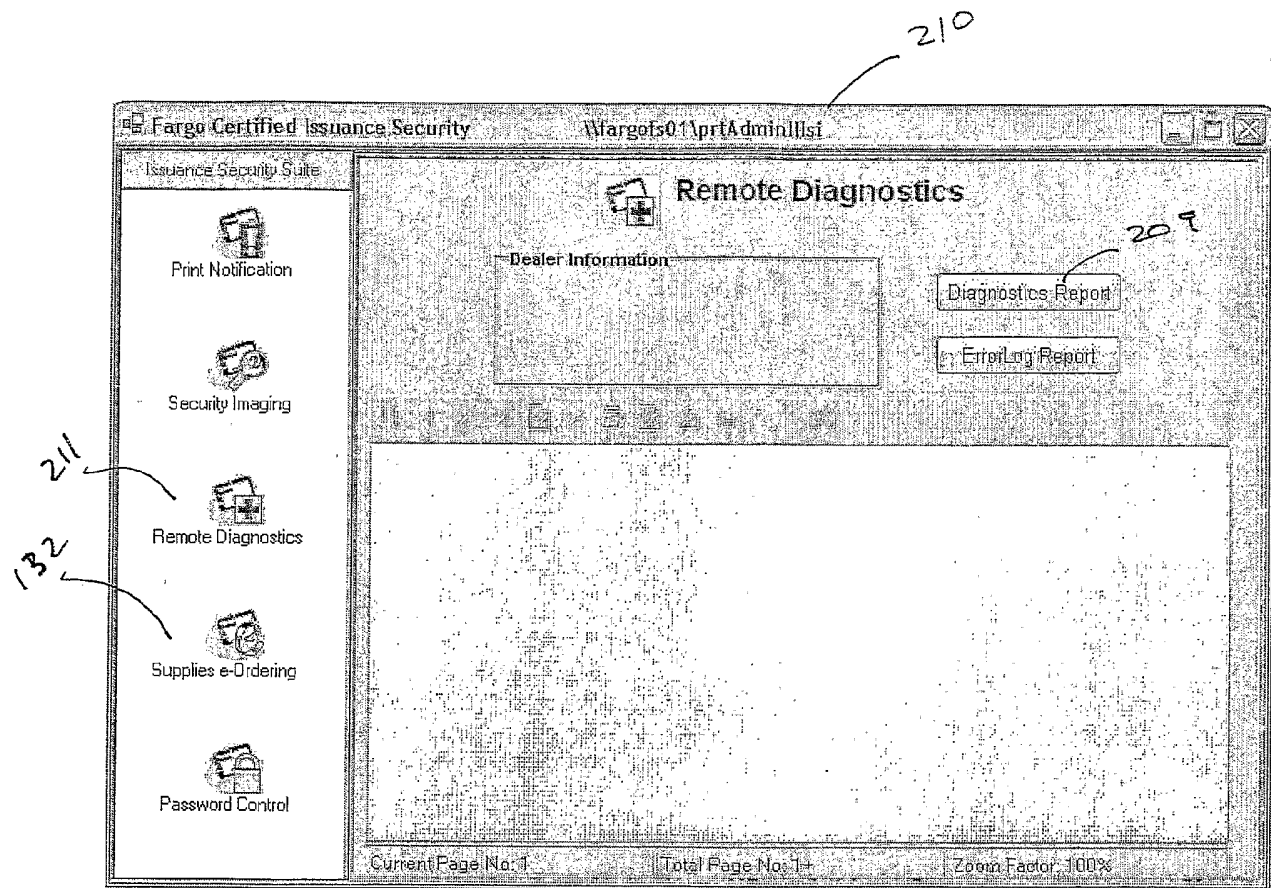


FIG. 8

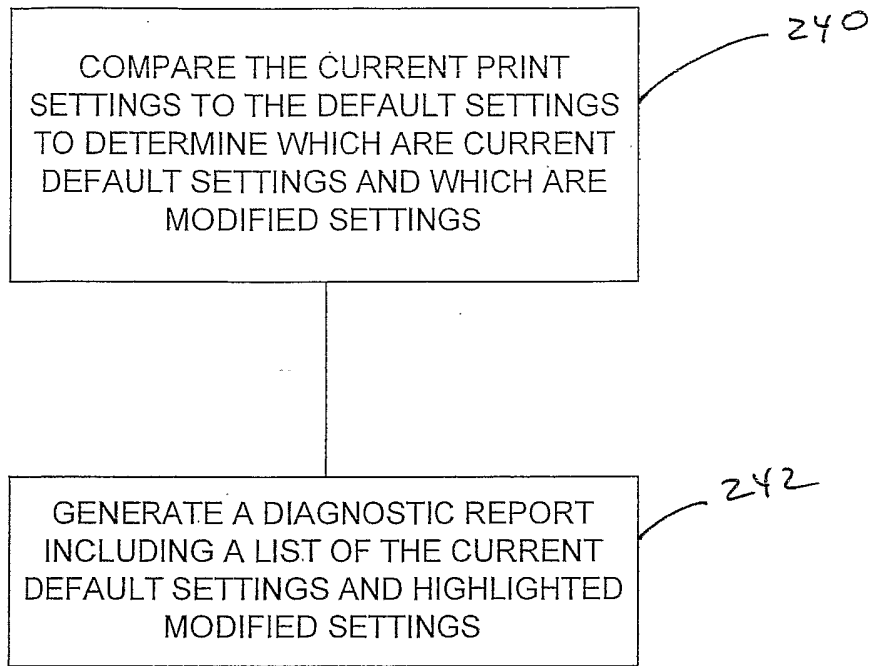


FIG. 9