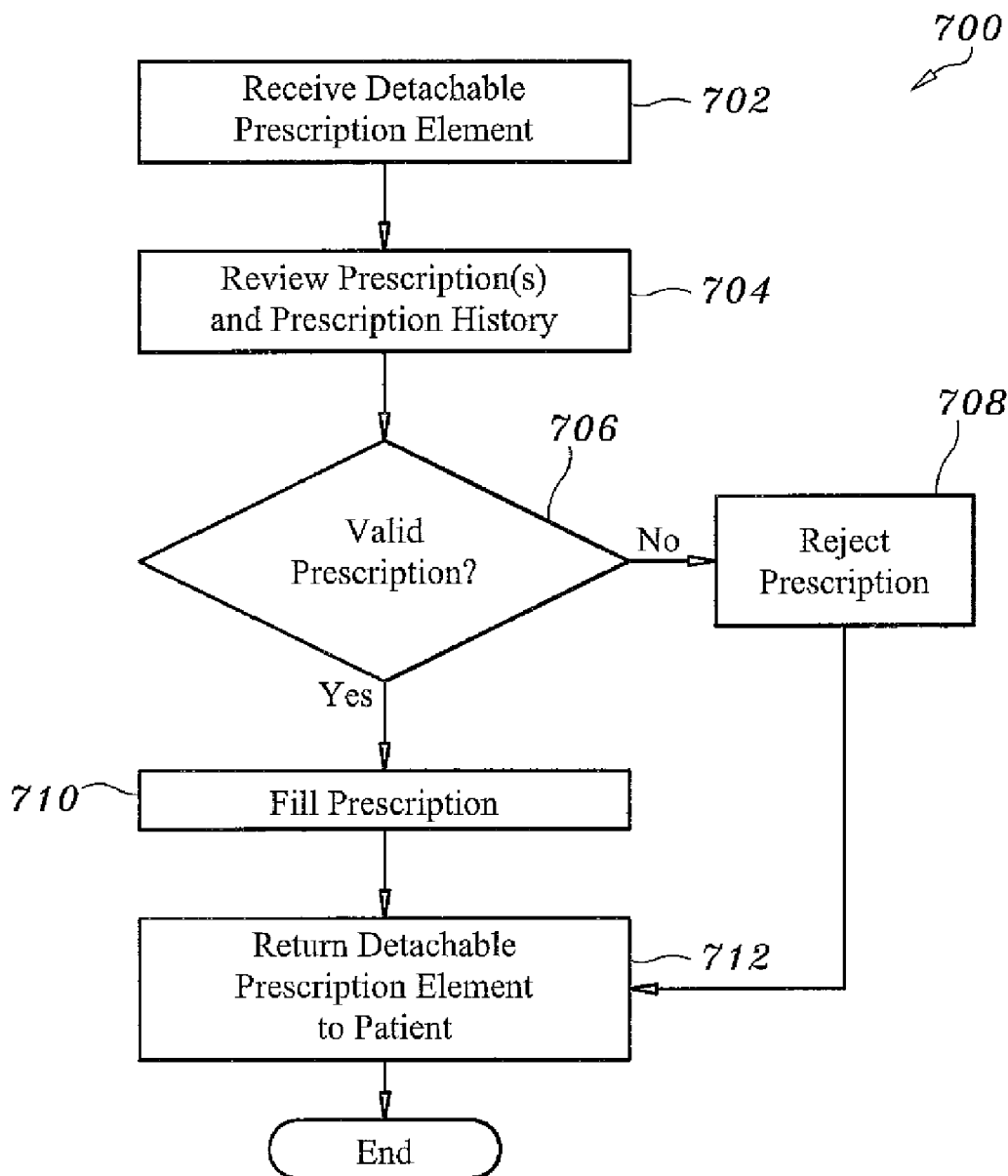(19) **United States**

(12) **Patent Application Publication**   (10) Pub. No.: **US 2011/0184757 A1**

     Daniel   (43) Pub. Date: **Jul. 28, 2011**

---

(54) **INTERACTIVE MEDICAL CARD AND METHOD OF PROCESSING MEDICAL INFORMATION STORED THEREON**

(76) Inventor: **Isaac S. Daniel**, Miami, FL (US)

(21) Appl. No.:   **12/693,050**

(22) Filed: **Jan. 25, 2010**

Publication Classification

(51) **Int. Cl.**
     G06F 17/00   (2006.01)
     G06K 19/00   (2006.01)

     G06Q 50/00   (2006.01)
     G06F 12/02   (2006.01)
     G06K 9/62   (2006.01)

(52) **U.S. Cl.** **705/3**; 235/487; 235/380; 711/103; 382/124; 711/E12.008; 711/115

(57)   **ABSTRACT**

The present disclosure relates generally to an apparatus, system and method, and more specifically to a portable electronic interactive medical card, which includes a cardholder's medical information for which access is authenticated by biometric verification means.
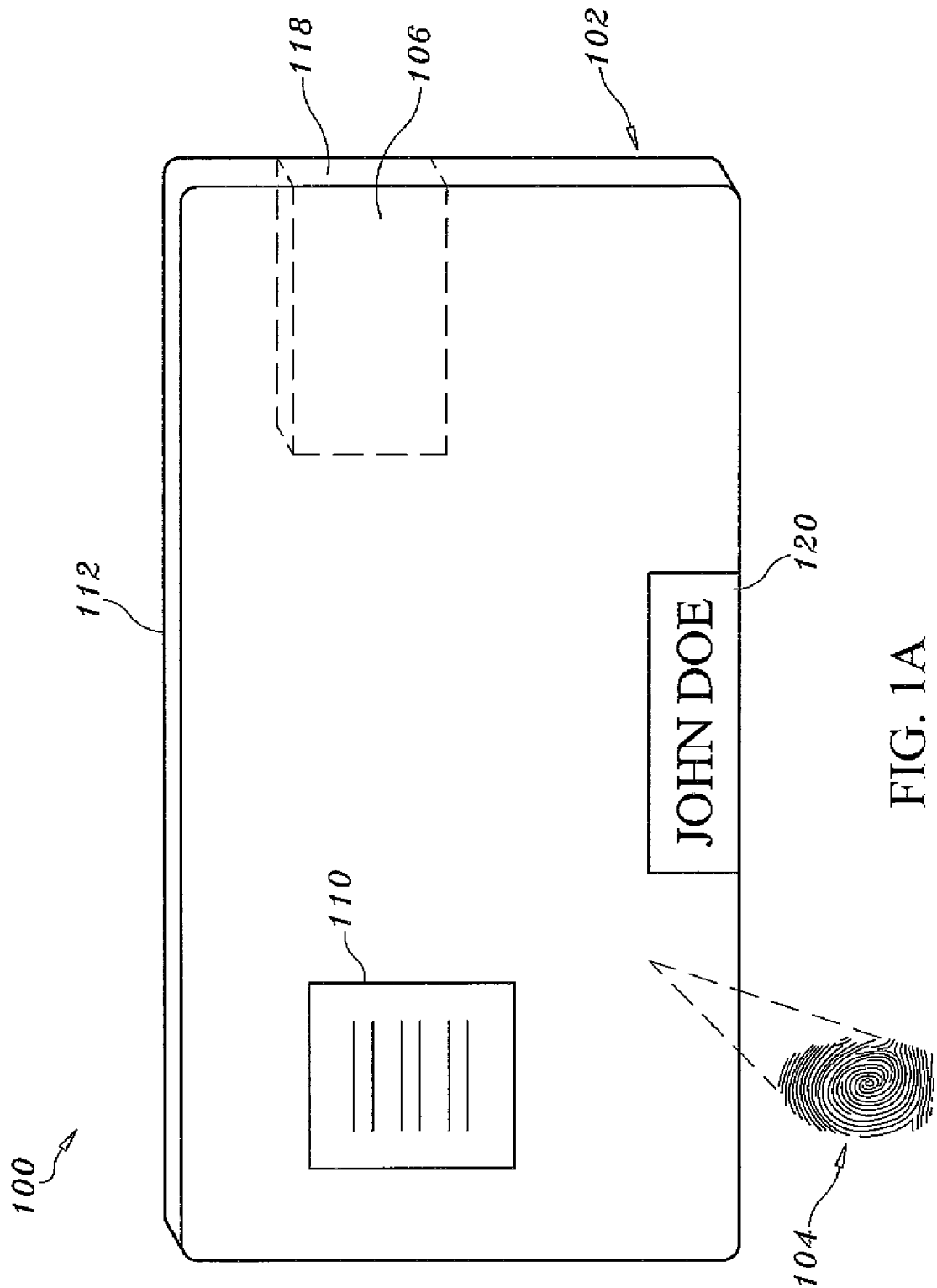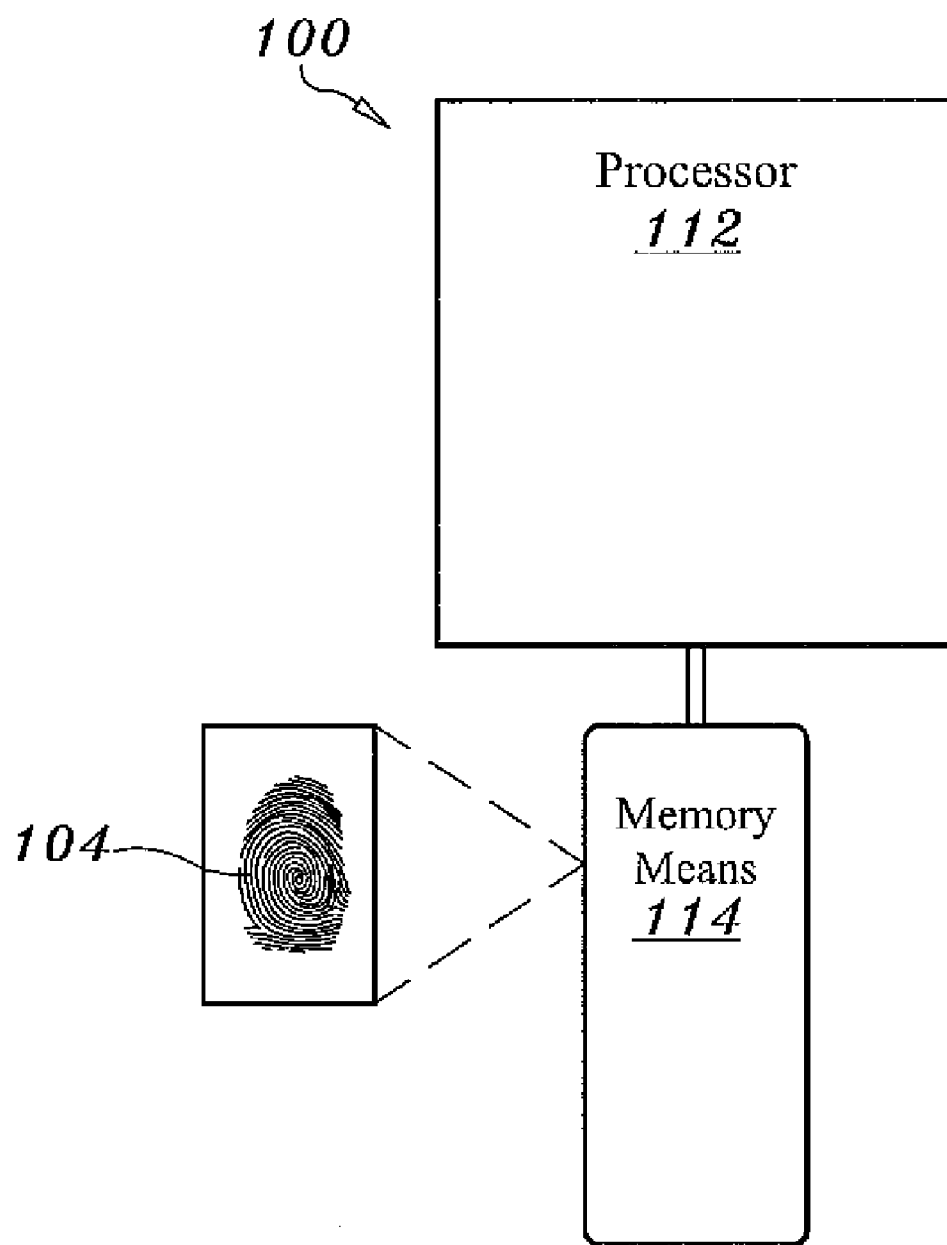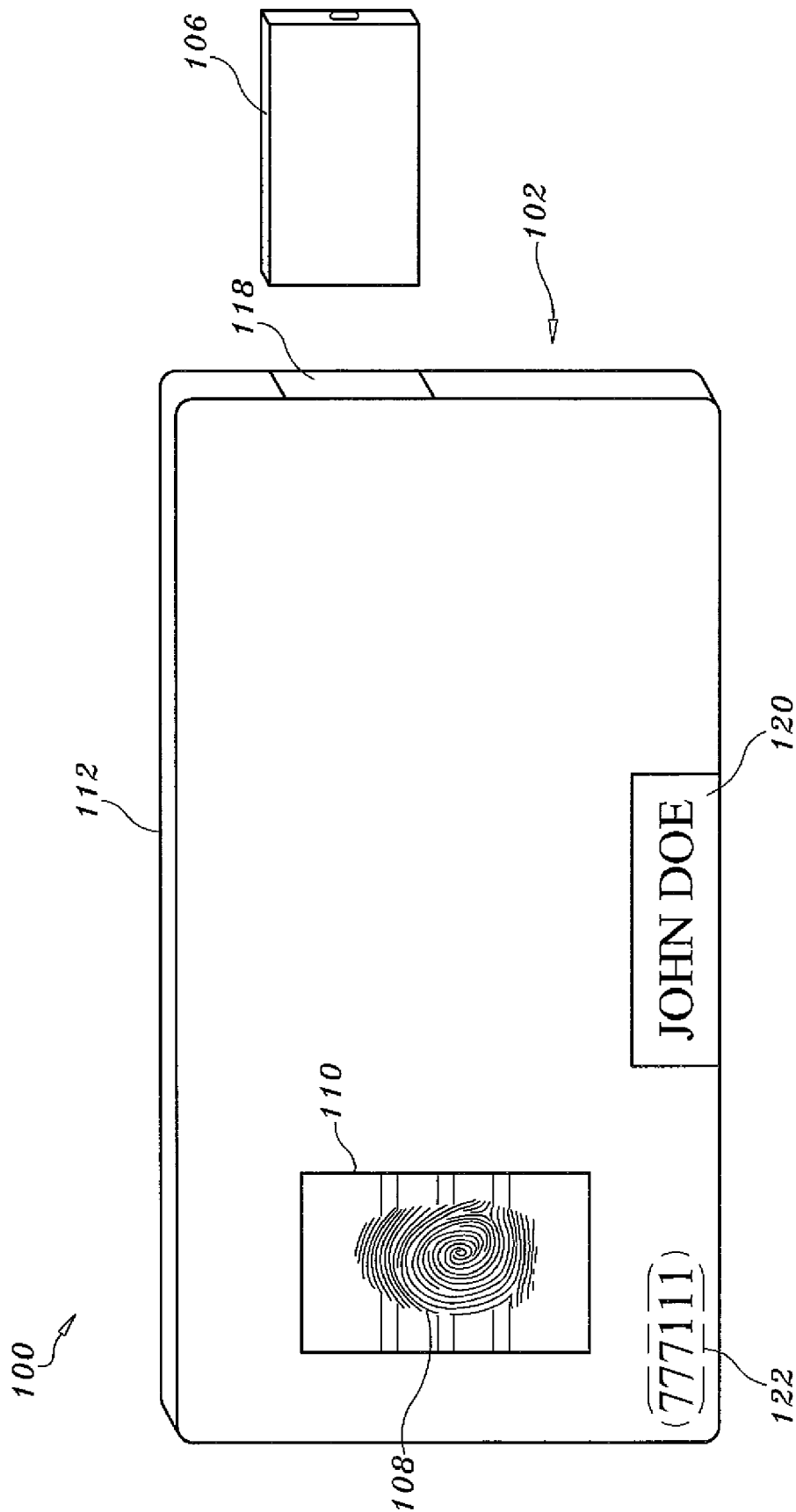
JOHN DOE

FIG. 1A

100

Processor
112

104

Memory
Means
114

FIG. 1B

106

118

102

112

110

100

108

JOHN DOE

120

(777111)

122

FIG. 1C

Name: John Doe
Birthday: 1/7/60

Social Security #: 123-45-6789
Address: 1 Main Street, Anywhere, USA

Prescription Date	Physician's Registration #	Physician's History	Physician's E-Signature	Date Filled	Pharmacy Number	Pharmacist's Number
1/2/10	333777	Zithromax Z-Pack 3-Day Dose Pack	/ Dr. Joseph /			
12/17/09	712170	Oxycontin - 80 mg. 30 - 1 Tablet Every 12 hours	/ Dr. Dean /	12/18/09	11223	BB002
12/14/09	111100	Oxycontin - 40 mg. 10 - 1 Tablet Every 12 hours	/ Dr. Aain /	12/14/09	10001	CC001

FIG. 2A

200

Name: John Doe *202*
Birthday: 1/7/60 *204*
Age: 50 years
224 *234*
Allergies: Penicillin, Pollen

208
206
Social Security #: 123-45-6789
Address: 1 Main Street, Anywhere, USA
Blood Type: A- *226*
236
Medical Conditions: Asthma, Diabetes

238
| Family History |

240
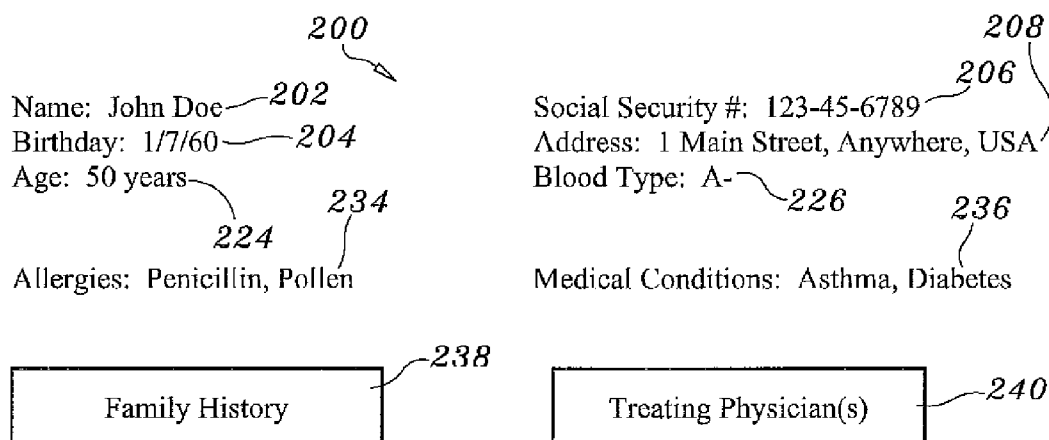| Treating Physician(s) |

FIG. 2B

FAMILY HISTORY *238*

Mother:
• Brain Tumor - Age 68

Father (72):
• Diabetes
• Heart Disease

FIG. 2C

TREATING PHYSICIAN(S) *240*

PCP:
Dr. Adam Bent
232 Main Circle
Any City, USA
Telephone: (333) 123-4567
Fax: (333) 123-4568

Orthopedist:
Dr. D. Dean
100 Fairview Terrace
Any City, USA
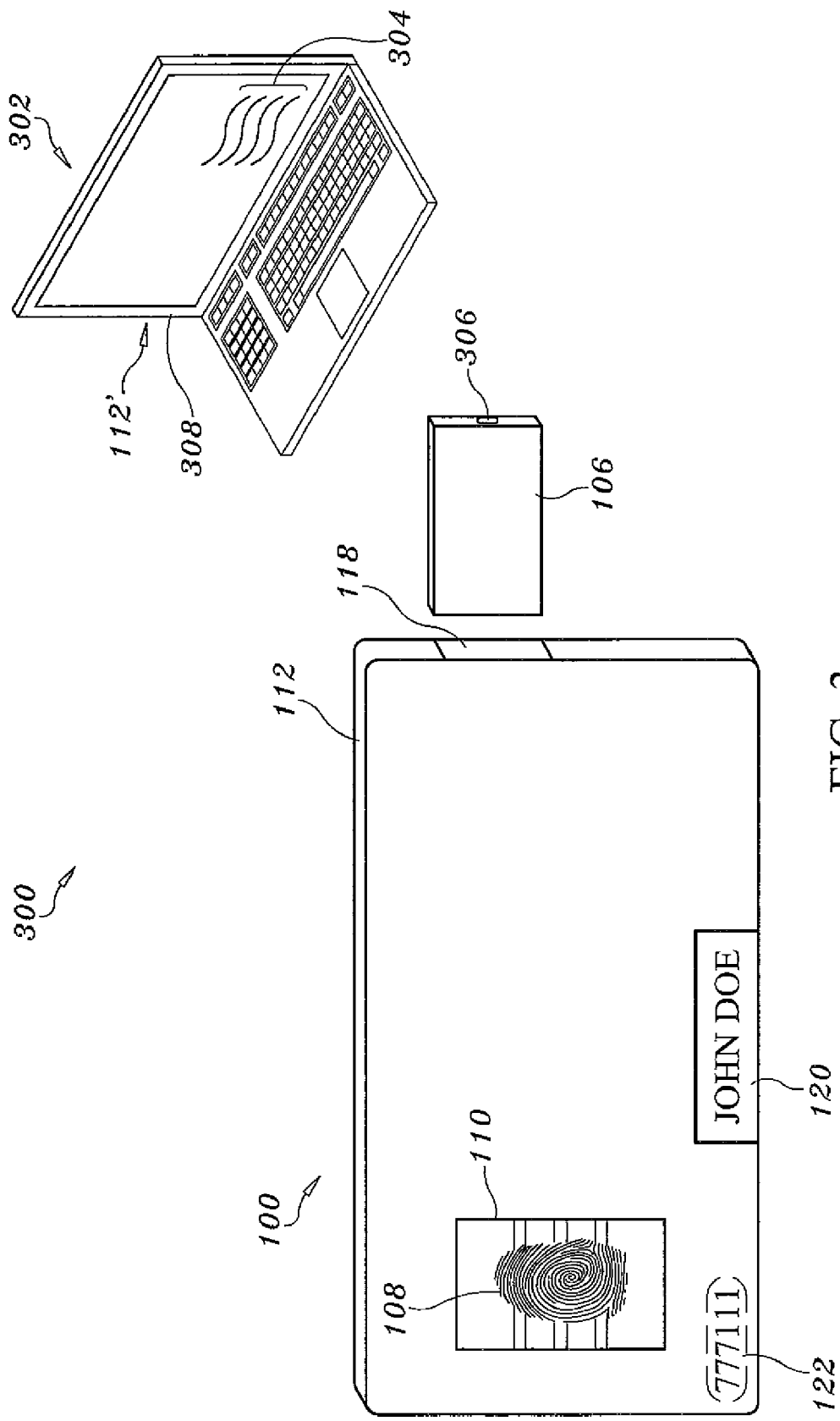Telephone: (334) 103-4068
Fax: (334) 103-4069

FIG. 2D

FIG. 3

400

| Receive Biometric Sample | —402 |

| Store Biometric Sample As Biometric Identifier | —404 |

(End)

FIG. 4

500

502— | Receive Biometric Sample |

| Compare Biometric Sample With Biometric Identifier | —504 |

506

< Valid Biometric Sample? >   No

Yes

| Release Detachable Prescription Element | —508 |

(End)

FIG. 5

600

Receive Detachable
Prescription Element ———602

↓

Store Patent's
Medical Information on IMC ———604

FIG. 6

700

Receive Detachable
Prescription Element ——702

↓

Review Prescription(s)
and Prescription History ——704

↓

706

Valid
Prescription?

No → Reject
Prescription

708

Yes

↓

710—— Fill Prescription

↓

Return Detachable
Prescription Element
to Patient ——712

↓

End

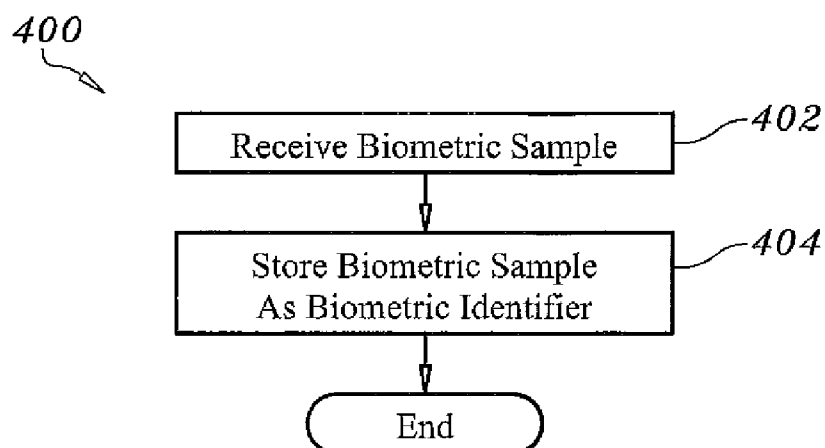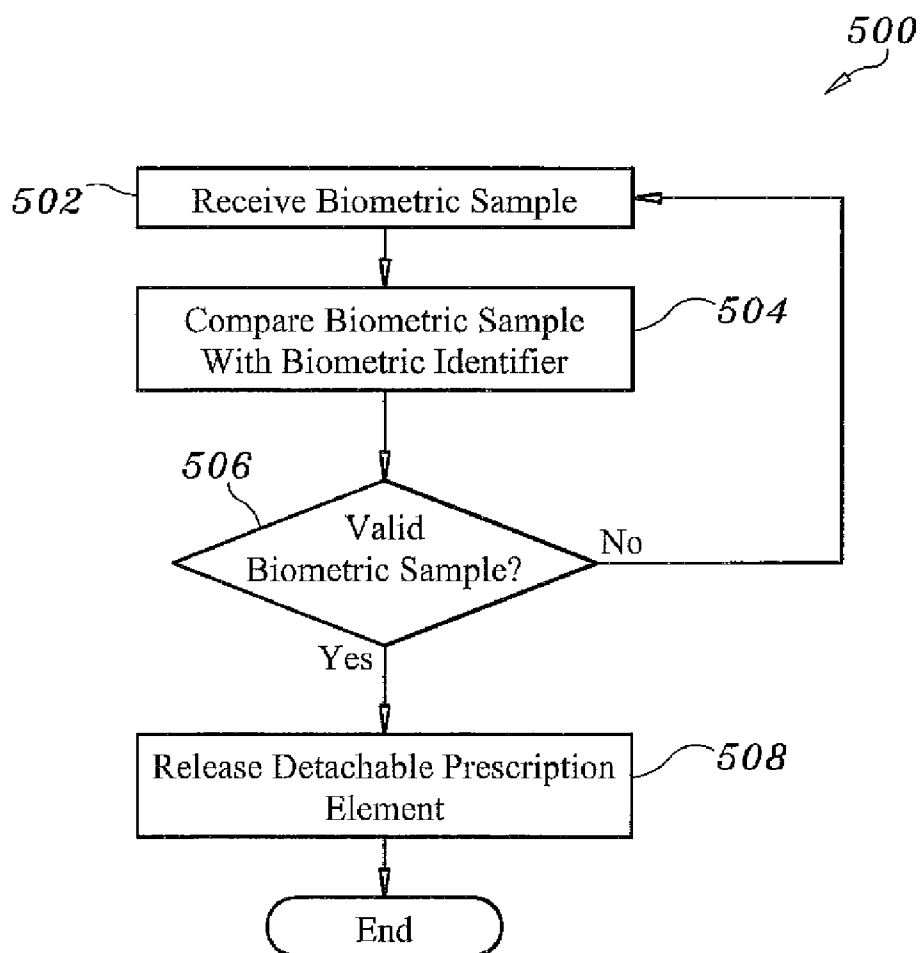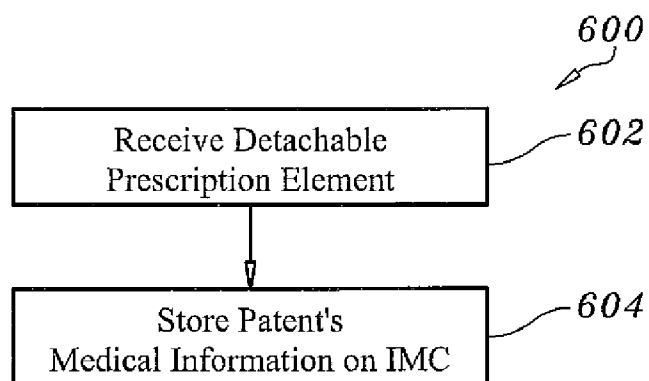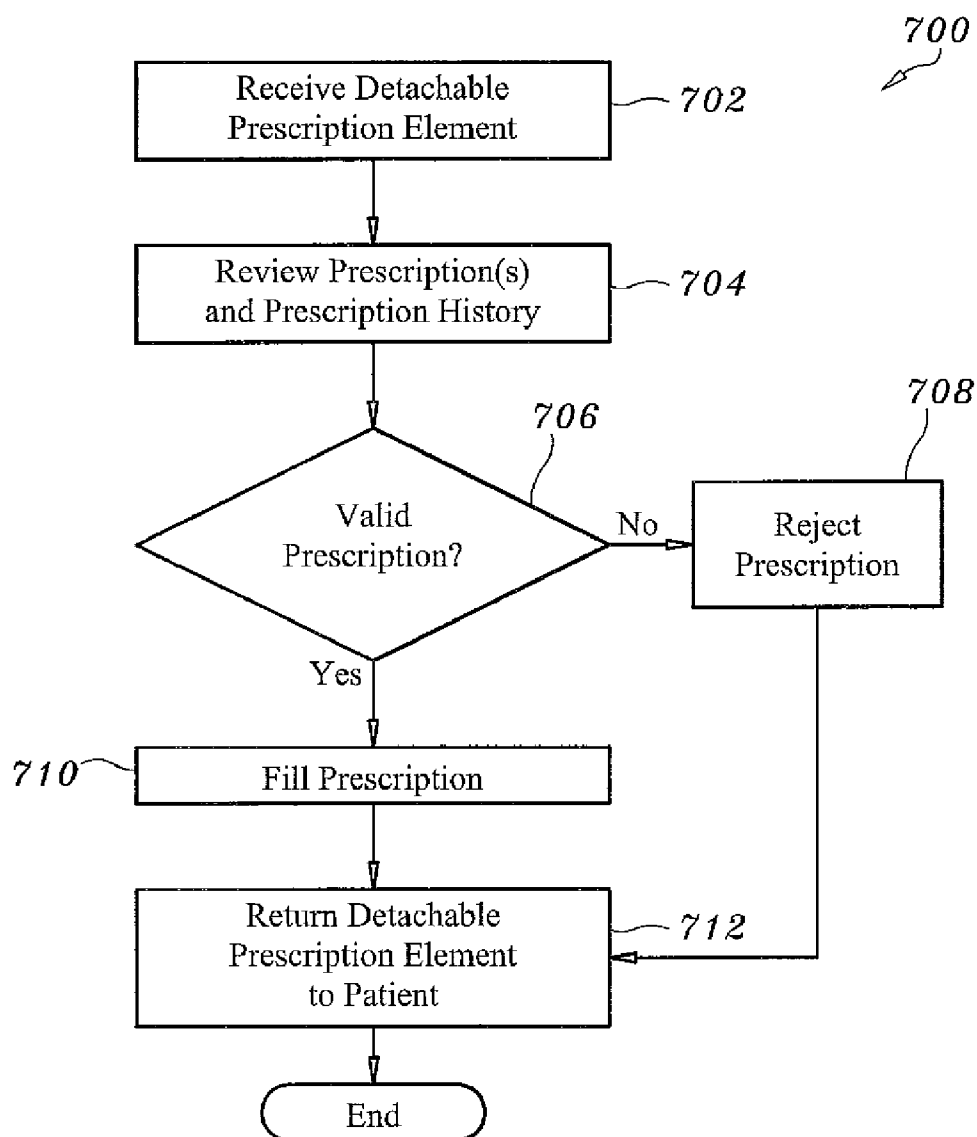## FIG. 7

INTERACTIVE MEDICAL CARD AND METHOD OF PROCESSING MEDICAL INFORMATION STORED THEREON

I. FIELD OF THE INVENTION

[0001] The present disclosure relates generally to an apparatus, system and method, and more specifically to a portable electronic interactive medical card, which includes a cardholder's medical information for which access is authenticated by biometric verification means.

II. BACKGROUND OF THE INVENTION

[0002] Medical emergencies generally occur with little warning and even less preparation. Under the best of circumstances a patient is conscious, alert and well able to provide his/her medical information. In reality, many patients are unconscious or so physically impaired that he or she is unable to provide such basic information as name, age, complaints, allergies and/or other relevant medical history, all of which will impact his/her treatment. Medical identification ("medical id") bracelets have been popularized as a solution for providing an alert to emergency medical professionals of known medical conditions, e.g. diabetes, asthma, etc. These medical id bracelets are limited in the amount of information that is displayed thereon. Other contributing factors, e.g. knowledge of the patient's current list of medication(s) may be relevant to treatment but not readily available. This lack of knowledge can compromise the patient's treatment. Thus, there is a need for an apparatus, system and method for providing a patient's medical information in a simple, convenient and accessible manner without compromising the confidentiality of the same.

[0003] Similar issues exist with regards to filling prescriptions where lack of information can compromise a patient's treatment. As such, patients are advised to fill all their prescriptions at the same pharmacy or at least a pharmacy within the same pharmacy chain so that there is continuity of treatment and access to a patient's prescription history. In this manner, a pharmacist or prescription software program can detect drug interactions, or abuses of controlled medications and the like. Except convenience, availability and prices are generally the controlling factors in a patient's choice of pharmacies. This places the pharmacist filling the most current prescription at a disadvantage as he/she may have incomplete information as to prior medications and/or any potentially adverse drug interactions. Pharmacists cannot rely on patient's memories as patients forget or have difficulty pronouncing and/or spelling their name of the medication(s) and may opt to take an educated guess which is unreliable for its lack of precision. Therefore, it would be helpful for a patient's current list of medications, i.e. prescription history, to be portable and available to any registered pharmacist for reference and review on an as needed basis.

[0004] Accordingly, the various embodiments and disclosures described herein satisfies these long felt needs and solves the limitations of the prior art in a new and novel manner.

III. SUMMARY OF THE INVENTION

[0005] An objective of the apparatus, system and method disclosed herein is to provide a convenient interactive medical card ("IMC") that includes biometric verification means positioned thereon for receiving and storing a biometric identifier used as a unique identifier of the card holder.

[0006] Another objective of the apparatus, system and method disclosed herein is to provide an IMC configured for storing thereon a biometric identifier used for releasing a detachable prescription element.

[0007] Yet another objective of the apparatus, system and method disclosed herein is to provide for the electronic storage of a patient's medical information including the patient's prescription history.

[0008] Still yet another objective of the apparatus, system and method disclosed herein is to provide an IMC that contains a patient's confidential medical information readily accessible to authorized personnel while maintaining the privacy and confidentiality of the same.

[0009] The present disclosure relates generally to an apparatus, system and method, and more particularly to an IMC, which includes an electronic data card configured for storing thereon a biometric identifier used for releasing a detachable prescription element. The detachable prescription element includes at least one flash memory card. "Biometric identifier" as used herein describes a valid biometric sample obtained from a card holder via the biometric verification means, and stored on the IMC for later reference. Biometric verification means includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means and any other biometric verification means that are known and used in the arts. Biometric verification means may include at least one processor disposed in communication with, for example, a fingerprint scanner, hand geometry scanner, a palm geometry scanner, iris scanner, retina scanner, or a user interface which includes an audio receiving circuit capable of receiving audio signals at predetermined frequencies and/or with additional hardware complete with electronic circuitry.

[0010] IMC is selected from the group of electronic devices consisting essentially of smart cards, memory cards, and processor cards, with at least one memory means embedded therein for storing a patient's biometric identifier and/or medical information. Medical information includes but is not limited to a patient's: name, birthday, social security number, address, prescription date, prescribing physician registration number, prescription history, prescribing physician's electronic signature, date prescription filled, pharmacy's registration number, pharmacist's license number, age, blood type, sex, race, marital status, allergies, known medical conditions, family history, a treating physician's contact information, color of eyes, height, primary care physician's name, primary care physician's address, primary care physician's contact information, insurance provider's name, insurer's address, insurer's telephone number, medical history and the like.

[0011] IMC includes at least one processor positioned within configured for performing any one or more of the following: validating a biometric sample with a biometric identifier stored thereon; releasing the detachable prescription element; and communicating with a computer via an application program. IMC also includes biometric identifier or medical information stored within IMC's at least one memory means. The at least one memory means may comprise of storage hardware.

[0012] IMC is a functional component of a system, where the system comprises of: a computer; an application program executable on the computer; and the IMC which includes an

electronic data card configured for storing thereon, a patient's medical information accessible by the application program, as well as a biometric identifier used for releasing a detachable prescription element. System also comprises of biometric verification means positioned on the interactive medical card, where the biometric verification means is configured for receiving at least one biometric sample, which is compared to the biometric identifier stored thereon as a means of authenticating the IMC card holder.

[0013] The IMC of the system includes at least one processor configured for performing any one or more of the following: validating a biometric sample with a biometric identifier stored thereon; releasing the detachable prescription element; and communicating with the computer via an application program. System may include software components, which may comprise of the computer; and the application program executable on the computer for carrying out the operations of establishing access to the patient's medical information stored on an IMC; retrieving patient's medical information from the IMC; storing patient's medical information received from a medical care provider on the IMC; or the computer, or a combination of the computer and the IMC; validating authorized access to the patient's medical information by the medical care provider; detecting a presence of at least one medical information field, or fields, adapted for receiving patient medical information; and automatically propagating the field or fields with patient's medical information.

[0014] In some embodiments, method comprises of: providing an interactive medical card, which includes an electronic data card configured for storing thereon a patient's medical information as well as a biometric identifier used for releasing a detachable prescription element. Method also comprises of providing biometric verification means positioned on the IMC, where biometric verification means include the verification means as described above. In some embodiments, method comprises of providing at least one processor positioned within the IMC configured for performing any one or more of the following: validating a biometric sample with a biometric identifier; releasing the detachable prescription element; and communicating with a computer via an application program as well as reading any one or more of the following: a biometric sample, biometric identifier stored on the interactive medical card or medical information; releasing the detachable prescription element; and communicating with a computer via an application program.

[0015] In some embodiments method comprises of: providing a computer; and providing an application program executable on the computer for carrying out the operations of establishing access to the patient's medical information stored on an IMC; retrieving patient's medical information from the IMC; storing patient's medical information received from a medical care provider on IMC; or the computer, or a combination of the computer and the IMC; validating authorized access to the patient's medical information by the medical care provider; detecting a presence of at least one medical information field, or fields, adapted for receiving patient medical information; and automatically propagating the field or fields with patient's medical information.

[0016] Additional objectives of the present invention will appear as the description proceeds.

[0017] The foregoing and other objects and advantages will appear from the description to follow. In the description, references are made to the accompanying drawings, which forms a part hereof, and in which is shown by way of illus-

tration specific embodiments in which the invention may be practiced. These embodiments will be described in sufficient detail to enable those skilled in the art to practice the invention, and it is to be understood that other embodiments may be utilized and that structural changes may be made without departing from the scope of the invention. In the accompanying drawings, like reference characters designate the same or similar parts throughout the several views. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the present invention is best defined by the appended claims.

IV. BRIEF DESCRIPTION OF THE DRAWINGS

[0018] Further objectives and advantages of the system and method may be derived by referring to the detailed description and claims when considered in connection with the Figures, wherein like reference numbers refer to similar items throughout the Figures.

[0019] FIG. 1A is an exemplary embodiment of the IMC.

[0020] FIG. 1B is an exemplary embodiment of the IMC.

[0021] FIG. 1C is an exemplary embodiment of the IMC with the detachable prescription element released from the IMC.

[0022] FIG. 2A shows exemplary medical information that may be stored on the IMC.

[0023] FIG. 2B shows exemplary medical information that may be stored on the IMC according to an embodiment.

[0024] FIG. 2C shows exemplary medical information that may be stored on the IMC according to an embodiment, e.g. the patient's medical family history.

[0025] FIG. 2D shows exemplary medical information that may be stored on the IMC according to an embodiment, e.g. the treating physician's contact information.

[0026] FIG. 3 shows an exemplary system according to one embodiment.

[0027] FIG. 4 is a sample flowchart of a block diagram of an exemplary method of storing the patient's biometric identifier in accordance with one embodiment.

[0028] FIG. 5 is a sample flowchart of a block diagram of an exemplary method of releasing the detachable prescription element according to an embodiment.

[0029] FIG. 6 is a sample flowchart of a block diagram of an exemplary method of storing a patient's medical information, e.g. prescription, on the detachable prescription element according to an embodiment.

[0030] FIG. 7 is a sample flowchart of a block diagram of an exemplary method of processing a patient's prescription using the detachable prescription element according to an embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0031] The following discussion describes in detail, varied embodiments of the system and methods disclosed herein. However, this discussion should not be construed, as limiting the invention to those particular embodiments, as practitioners skilled in the art will appreciate that an apparatus or system may vary as to configuration and as to details of the parts, and that a method may vary as to the specific steps and sequence, without departing from the basic concepts as disclosed herein. Similarly, the elements described herein may be implemented separately, or in various combinations without departing from the teachings of the present invention.

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views.

[0032] FIGS. 1A & 1B are exemplary embodiments of the IMC **100**. IMC **100** includes an electronic data card **102** configured for storing thereon a biometric identifier **104** used for releasing a detachable prescription element **106**. "Biometric identifier" **104** as used herein describes a biometric sample **108** obtained from a card holder via the biometric verification means **110** positioned on the IMC **100**, and stored thereon for future reference and comparison. Biometric identifier **104** uniquely identifies the individual based on his/her intrinsic physical traits, e.g. fingerprints, retina scan, palm geometry, hand geometry, speech, and or other biometric identifiers **104** that are used in the arts.

[0033] Biometric verification means **110** includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means and any other biometric verification means **110** that are known and used in the arts. Biometric verification means **110** may include at least one processor **112** disposed in communication with, for example, a fingerprint scanner, hand geometry scanner, a palm geometry scanner, iris scanner, retina scanner, or a user interface which includes an audio receiving circuit capable of receiving audio signals at predetermined frequencies and/or with additional hardware complete with electronic circuitry. Illustratively, as seen in FIG. 1A, the biometric verification means **110** includes a fingerprint scanner, where the processor **112** controls the functionality of the fingerprint scanner, generates the varied algorithms for storage of the first valid biometric sample **108** as a biometric identifier **104** and validates the images of other biometric samples **108**, **108'** subsequently received from the card holder.

[0034] IMC **100** is selected from the group of electronic devices consisting essentially of programmable smart cards, memory cards, and processor cards, with at least one memory means **114** embedded therein configured for storing thereon a biometric identifier **104** and/or a patient's medical information. Medical information includes but is not limited to name, birthday, social security number, address, prescription date, prescribing physician registration number, prescription history, prescribing physician's electronic signature, date prescription filled, pharmacy's registration number, pharmacist's license number, age, blood type, sex, race, marital status, allergies, known medical conditions, family history, a treating physician's contact information, color of eyes, height, primary care physician's name, primary care physician's address, primary care physician's contact information, insurance provider's name, insurer's address, insurer's telephone number, medical history and the like.

[0035] The IMC **100** comprises of computer executable instructions readable by at least one processor **112** and operative to perform the varied system functions of the IMC **100**. The computer executable instructions may be any type of computer executable instructions, which may be in the form of a computer program, the program being composed in any suitable programming language or source code, such as C++, C, JAVA, JavaScript, HTML, XML, and other programming languages. The at least one processor **112** positioned within the IMC **100** is configured for performing any one or more of the following: validating a biometric sample **108** with a biometric identifier **104** stored on the IMC's at least one memory

means **114**; releasing the detachable prescription element **106**; and communicating with a computer via an application program. Processor **112** may be any type of processor **112**, such as, but not limited to, a central processing unit (CPU), a microprocessor, a video processor, a front end processor, a coprocessor, a single-core processor, a multi-core processor, and the like.

[0036] The at least one memory means **114** exemplified in FIG. 1B may include a hardware component, e.g. storage hardware, in electrical communication with at least one processor **112**. Storage hardware may include, but is not limited to, read-only memory, such as CD-ROMs, DVDs, floppy disks, and the like, read and write memory, such as a hard drive, floppy disc, CD-RW, DVD-RW, solid state memory, such as solid state hard drives, flash cards, memory chips, and the like, and random access memory. In one embodiment, the at least one memory means **114** may comprise of both hardware and software components. In some embodiments, at least one memory means **114** may be embedded within at least one processor **112** where the information stored therein is encrypted for privacy purposes. In other embodiments, the at least one memory means **114** is the detachable prescription element **106**, which includes at least one flash memory card adapted with electrical contacts for establishing wired and/or wireless connectivity to a computer.

[0037] In one embodiment, the IMC holder's biometric identifier **104** is stored within the at least one memory means **114** embedded within the smart card processor **112** while the medical information is stored on the IMC's detachable prescription element **106**. In another embodiment, both IMC holder's biometric identifier **104** and the patient's medical information are stored within the IMC's at least one memory means **114** embedded within the smart card processor **112"**. In still yet another embodiment, both the biometric identifier **104** and medical information are stored on the IMC's detachable prescription element **106**.

[0038] IMC **100** may optionally include a battery **116** (not shown), which serves as a power source for the at least one processor **112** positioned therein. In one embodiment, IMC **100** is adapted with electrical contacts for establishing wired and/or wireless connectivity to a charger, e.g. a docking station, and as such may not include a battery **116** (not shown). In that event, processor **112** detects when the IMC **100** has been disconnected from an external power source and switches apparatus **100**'s power source to an internal power source, such as the battery **116** (not shown).

[0039] FIG. 1C is an exemplary embodiment of the IMC **100** with the detachable prescription element **106** released from the IMC **100**. Releasing the detachable prescription element **106** requires the IMC holder to submit a biometric sample **108** that is compared to the biometric identifier **104** stored thereon for an identical match. For example, in the instance where the biometric verification means **110** includes a fingerprint scanner, the IMC holder will be required to submit a biometric sample **108** using the same finger previously used to obtain the original biometric sample **108** stored thereon as the biometric identifier **108**. If the biometric sample **108** is an identical match to the biometric identifier **108**, processor **112** which is disposed in communication with the fingerprint scanner, initiates the release of the detachable prescription element **106** to release it from the IMC **100**. Processor **112** initiates the release by activating a release mechanism, e.g. a spring assembly, a release button or the like. Once released, the detachable prescription element **106**

is ejected through an aperture **118** which is sized and configured to allow the detachable prescription element **106** to be ejected therefrom.

[0040] IMC **100** may also include other indicia of identification, e.g. a name plate **120** which may be used to identify the card holder's name and or address (not shown) that is printed thereon. In some embodiments, IMC **100** is assigned a unique identification number **122**, e.g. a serial number used to track ownership and/or warranty purposes. The unique identifying number **122** may be assigned via a random number generating program, comprising of numerals, characters, alphanumeric characters or any other unique identifiers that are known and used in the arts.

[0041] FIG. 2A-2D show exemplary medical information **200** that may be stored on the IMC **100**. Medical information **200** may include but is not limited to name **202**, birthday **204**, social security number **206**, address **208**, prescription date **210**, prescribing physician registration number **212**, prescription history **214**, prescribing physician's electronic signature **216**, date prescription filled **218**, pharmacy's registration number **220**, pharmacist's license number **222**, age **224**, blood type **226**, sex **228** (not shown), race **230** (not shown), marital status **232** (not shown), allergies **234**, known medical conditions **236**, family history **238**, a treating physician's contact information **240**, color of eyes **242** (not shown), height **244** (not shown), primary care physician's name **246** (not shown), primary care physician's address **248** (not shown), primary care physician's contact information **250** (not shown), insurance provider's name **252** (not shown), address **254** (not shown), telephone number **256** (not shown), medical history **258** (not shown) and the like.

[0042] In some embodiments, medical information **200** is readily accessible to a health care provider without additional security controls after the detachable prescription element **106** has been detached from the IMC **100**. In other embodiments, additional security controls may be required to access the medical information, e.g. providing a valid physician's registration number **220** to an application program's to authorize the physician or pharmacist's access to the medical information **200** or prescription information stored thereon. In the preferred embodiment, the medical information **200** is readily accessible to emergency care providers without any further security controls, such that the patient's medical information is readily accessible and available.

[0043] In some embodiments, certain medical information **200** is populated onto the detachable prescription element **106** via an application program. For example, when a pharmacist has completed the process of filling the prescription the application program detects the presence of at least one medical information **100** field, or fields, that is adapted for receiving patient medical information **200** and automatically propagates the field or fields with patient's medical information **200**, e.g. date filled **218**, pharmacy number **220** and/or the pharmacists' license number **222**. In other embodiments, such information is manually inputted and stored on the detachable prescription element **106**, which is returned to the patient.

[0044] FIG. 2B shows exemplary medical information **200** that may be stored on the IMC **100** according to an embodiment. Treating physicians may use the IMC's detachable prescription element **106** to update and store the patient's family history **238**, the treating physician's contact information **240** as well as a new prescription to be filled and/or any other relevant medical information **200**, e.g. allergies **234**,

medical conditions **236** and the like. Since the IMC **100** remains in the patient's possession, a thorough family history **238** that is obtained and stored thereon, makes the IMC **100** an invaluable portable concise documentation of the patient's medical information **200** available to all treating physicians regardless of where the patient is located in the world.

[0045] FIG. 2C shows exemplary medical information **200** that may be stored on the IMC **100** according to an embodiment, e.g. the patient's medical family history **238**, which can be an important predictor of genetic diseases as well as identifying the patient's risks of developing other health conditions. The patient's family history **238** may not be readily viewable to a treating physician as it may require the treating physician to toggle through certain software application menus via a user interface to view and/or store the same. In this manner, the patient's family history **238** is accessible on an as needed basis but not readily viewable to other personnel, e.g. pharmacists, to whom the information is of no concern.

[0046] FIG. 2D shows exemplary medical information **200** that may be stored on the MC **100** according to an embodiment, e.g. the treating physician's contact information **240**. The treating physician's contact information **240** is made available such that interested medical care providers have access to the information, e.g. another doctor may need clarifying information or reports of certain medical procedures performed at the direction of another specialist. Here too, the treating physician's contact information **240** may not be readily viewable and may require the medical care provider to toggle through certain software application menus via a user interface to view and/or store the same.

[0047] FIG. **3** shows an exemplary system **300** according to one embodiment. System **300** comprises of a computer **302**; an application program **304** executable on the computer **302**; and the interactive medical card **100** which includes an electronic data card **102** configured for storing thereon a patient's medical information **200** accessible by the application program **304**, as well as a biometric identifier **104** used for used for releasing a detachable prescription element **106**.

[0048] Computer **302**, e.g. a network enabled computer **302**, a laptop or personal digital assistant subject to wired/wireless connectivity is configured with an application program **304** to allow communications between the computer **302** and the medical information **200** that may be stored on the detachable prescription element **106**. Medical information **200** includes the medical information **200** previously described herein and the like. The application program **304** may comprise in part of a browser, such as for use on a personal computer **302** and/or a user interface.

[0049] Computer **302** includes a processor **112'** configured with computer executable instruction code **308** executable by the computer processor **112'**. IMC **100** also comprises of computer executable instruction code **308** readable by its at least one processor **112** and operative to perform the varied system functions of the IMC **100**. The computer executable instruction code **308** may be any type of computer executable instruction code **308**, which may be in the form of a computer program, the program being composed in any suitable programming language or source code, such as C++, C, JAVA, JavaScript, HTML, XML, and other programming languages. The computer executable instruction code **308** may be loaded directly on the processor **112'**, or may be stored in the computer's memory means **114'** (not shown), such as, but not limited to, computer readable media, such as, but not limited to, a hard drive, a solid state drive, a flash memory,

random access memory, CD-ROM, CD-R, CD-RW, DVD-ROM, DVD-R, DVD-RW, and the like.

[0050] IMC **100** also includes a processor **112**, where the IMC processor **112** and/or the computer processor **112'** may be any type of processors **112**, **112'** such as a central processing unit (CPU), a processor **112**, a front end processor, a coprocessor, a single-core processor, a multi-core processor, as well as any known processor **112** that's used in the arts. The IMC's processor **112** is configured for performing any one or more of the following: validating a biometric sample **108** with a biometric identifier **104** stored thereon; releasing the detachable prescription element; **106**, and communicating with the computer **302** via an application program **304**.

[0051] System **300** also comprises of biometric verification means **102** positioned on the IMC **100**, where the biometric verification means **110** is configured for receiving at least one biometric sample **104**, which is compared with a biometric identifier **104** stored thereon. Biometric verification means **110** includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means and any other biometric verification means **110** that are known and used in the arts. Biometric verification means **110** may include at least one processor **112** disposed in communication with, for example, a fingerprint scanner, hand geometry scanner, a palm geometry scanner, iris scanner, retina scanner, or a user interface which includes an audio receiving circuit capable of receiving audio signals at predetermined frequencies and/or with additional hardware complete with electronic circuitry as described above. When the card holder provides a valid biometric sample **108** the detachable prescription element **106** becomes detached and is now available for use by a medical care provider.

[0052] The detachable prescription element **106** includes at least one flash memory card and may be adapted with electrical contacts **306** for establishing wired and/or wireless connectivity to the computer **302**. In one embodiment, the detachable prescription element **106** is the IMC's at least one memory means **114**. In some embodiments, the IMC's at least one memory means **114** may be embedded within at least one processor **112** where the information stored therein is encrypted for privacy purposes. In other embodiments, the at least one memory means **114** may comprise of a hardware component, e.g. storage hardware, in electrical communication with at least one processor **112**. Such storage hardware may include, but is not limited to, read-only memory, such as CD-ROMs, DVDs, floppy disks, and the like, read and write memory, such as a hard drive, floppy disc, CD-RW, DVD-RW, solid state memory, such as solid state hard drives, flash disks, and the like, and random access memory.

[0053] System **200** includes software components which may comprise of an application program **304** executable on a computer **302**, where the computer **302** is configured for carrying out the operations of: establishing access to the patient's medical information **200** stored on the IMC **100**; retrieving patient's medical information **200** from the IMC **100**; storing patient's medical information **200** received from a medical care provider on the IMC **100**; or the computer **302**, or a combination of the computer **302** and the IMC **100**; validating authorized access to the patient's medical information **200** by the medical care provider; detecting a presence of at least one medical information **200** field, or fields, adapted

for receiving patient medical information **200**; and automatically propagating the field or fields with patient's medical information **200**.

[0054] FIG. **4** is a sample flowchart of a block diagram of an exemplary method **400** of storing the patient's biometric identifier **104** in accordance with one embodiment. The method **300** comprises of processor **112** receiving a first valid biometric sample **108** (step **402**) from the patient and storing the biometric sample **108** as a biometric identifier **104** (step **404**) on IMC's memory means **104**.

[0055] FIG. **5** is a sample flowchart of a block diagram of an exemplary method **500** of releasing the detachable prescription element **106** according to an embodiment. IMC's processor **112** receives the IMC holder's new biometric sample **108** (step **502**) and compares the new biometric sample **108** with the biometric identifier **110** (step **504**) stored thereon. If the new biometric sample **108** is a valid biometric sample (step **506**), i.e. the biometric sample **108** is an identical match to the biometric identifier **110** stored thereon, processor **112**, which controls the detachable prescription element **106** activates, e.g. a spring assembly, to release the detachable prescription element **106** (step **508**), which will be ejected through the aperture **118**. Once the detachable prescription element **106** has been released from the IMC **100** it becomes available for use by a medical care provider, e.g. a treating physician or pharmacist to store a prescription stored thereon or process the same.

[0056] If the biometric sample is not valid (step **506**), i.e. failed to match the biometric identifier **104** stored thereon within the calibrated precision range for an identical match, e.g. use of the wrong finger, then IMC holder may provide an additional biometric sample **108**, which is received an processed in accordance with steps **502-506** until the detachable prescription element **106** is released. In some embodiments, processor **112** may be programmed to block access to the IMC's medical information **200** if multiple, consecutive, unsuccessful attempts are made within a prescribed time period. In that embodiment, an additional verification step may be incorporated into the method **500** where after verifying that the biometric sample **10** is valid (step **506**), processor **112** verifies that the maximum number of attempts (step **507**, not shown) has not been exceeded. If the maximum number of attempts has not been exceeded, method **400** will return to steps **502-507**. However, if it has, processor **112** locks the medical information **200** and/or the spring assembly that controls the release of the detachable prescription element **106**.

[0057] FIG. **6** is a sample flowchart of a block diagram of an exemplary method **600** of storing a patient's medical information, e.g. adding a prescription, on the detachable prescription element **106** according to an embodiment. In the exemplary method **600**, a treating physician may receive the detachable prescription element **106** (step **602**) that has been released from the IMC **100**. The physician may insert the detachable prescription element **106** which is configured with electrical contacts for connecting to a computer **302**, into his or her computer **302** to access the patient's medical information **200**. As such, the medical care provider may then provide the medical information, e.g. prescription, which is electronically stored thereon (step **604**). In some embodiments, the doctor will need to access the patient's prescription information with additional security controls, e.g. providing a valid password that is authenticated with a registry. In other

embodiments no additional security controls are necessary to access the patient's prescription information.

[0058] FIG. 7 is a sample flowchart of a block diagram of an exemplary method **700** of processing a patient's prescription using the detachable prescription element **106** according to an embodiment. A pharmacist may receive the detachable prescription element **106** (step **702**) from the patient and review the patient's prescription (step **704**) and/or the prescription history to determine for example, whether or not the prescription has expired, was prescribed by an authorized physician and/or contains other self authenticating information. If the prescription is valid (step **706**) the pharmacist may fill the prescription (step **710**) and return the detachable prescription element **106** to the patient (step **712**) with for example the filled prescription. However, if the prescription is not valid (step **706**), e.g. a stale prescription for controlled medication, then the pharmacist may reject the prescription (step **708**) and return the detachable prescription element **106** to the patient (step **712**).

[0059] While the principles of the disclosure have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the disclosure. Other embodiments are contemplated within the scope of the present disclosure in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present disclosure.

What is claimed is:

1. An apparatus comprising of an interactive medical card, which includes an electronic data card configured for storing thereon a biometric identifier used for releasing a detachable prescription element.

2. The apparatus of claim **1**, wherein the detachable prescription element includes at least one flash memory card.

3. The apparatus of claim **1**, wherein the interactive medical card comprises of biometric verification means which includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means.

4. The apparatus of claim **3**, wherein the fingerprint recognition means includes a fingerprint scanner.

5. The apparatus of claim **1**, wherein the interactive medical card is configured for is storing medical information thereon.

6. The apparatus of claim **5**, wherein medical information includes but is not limited to a patient's: name, birthday, social security number, address, prescription date, prescribing physician registration number, prescription history, prescribing physician's electronic signature, date prescription filled, pharmacy's registration number, pharmacist's license number, age, blood type, sex, race, marital status, allergies, known medical conditions, family history, a treating physician's contact information, color of eyes, height, primary care physician's name, primary care physician's address, primary care physician's contact information, insurance provider's name, insurer's address, insurer's telephone number, medical history.

7. The apparatus of claim **1**, wherein the interactive medical card includes at least one processor positioned within and configured for performing any one or more of the following: validating a biometric sample with a biometric identifier

stored thereon; releasing the detachable prescription element; and communicating with a computer via an application program.

8. The apparatus of claim **1**, wherein the interactive medical card comprises of at least one memory means for storing a biometric identifier or patient medical information.

9. A system comprising:

(a) a computer;

(b) an application program executable on the computer; and

(c) an interactive medical card which includes an electronic data card configured for storing thereon a patient's medical information accessible by the application program, as well as a biometric identifier used for used for releasing a detachable prescription element.

10. The system of claim **9**, wherein the detachable prescription element includes at least one flash memory card.

11. The system of claim **9**, comprising of biometric verification means positioned on the interactive medical card.

12. The system of claim **11**, wherein the biometric verification means is configured for receiving at least one biometric sample.

13. The system of claim **11**, wherein the biometric verification means includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means.

14. The system of claim **13**, wherein the fingerprint recognition means includes a fingerprint scanner.

15. The system of claim **9**, wherein medical information includes but is not limited to name, birthday, social security number, address, prescription date, prescribing physician registration number, prescription history, prescribing physician's electronic signature, date prescription filled, pharmacy's registration number, pharmacist's license number, age, blood type, sex, race, marital status, allergies, known medical conditions, family history, a treating physician's contact information, color of eyes, height, primary care physician's name, primary care physician's address, primary care physician's contact information, insurance provider's name, insurer's address, insurer's telephone number, medical history.

16. The system of claim **9**, wherein the interactive medical card includes at least one processor configured for performing any one or more of the following: validating a biometric sample with a biometric identifier stored thereon; releasing the detachable prescription element; and communicating with the computer via an application program.

17. The system of claim **9**, comprising of:

(a) the computer; and

(b) the application program executable on the computer for carrying out the operations of:

(i) establishing access to the patient's medical information stored on an interactive medical card;

(ii) retrieving patient's medical information from the interactive medical card;

(iii) storing patient's medical information received from a medical care provider on the interactive medical card; or the computer, or a combination of the computer and the interactive medical card;

(iv) validating authorized access to the patient's medical information by the medical care provider;

(v) detecting a presence of at least one medical information field, or fields, adapted for receiving patient medical info nation; and

(vi) automatically propagating the field or fields with patient's medical information.

18. A method comprising of providing an interactive medical card, which includes an electronic data card configured for storing thereon a biometric identifier used for releasing a detachable prescription element.

19. The method of claim 18, wherein the detachable prescription element includes at least one flash memory card.

20. The method of claim 18, comprising of providing biometric verification means positioned on the interactive medical card.

21. The method of claim 20, wherein the biometric verification means includes but is not limited to: fingerprint recognition means, hand geometry recognition means, palm geometry recognition means, iris recognition means, retina recognition means, speech recognition means.

22. The method of claim 21, wherein the fingerprint recognition means includes a fingerprint scanner.

23. The method of claim 18, wherein the interactive medical card is configured for storing a patient's medical information thereon.

24. The method of claim 23, wherein medical information includes but is not limited to name, birthday, social security number, address, prescription date, prescribing physician registration number, prescription history, prescribing physician's electronic signature, date prescription filled, pharmacy's registration number, pharmacist's license number, age, blood type, sex, race, marital status, allergies, known medical conditions, family history, a treating physician's contact information, color of eyes, height, primary care physician's name, primary care physician's address, primary care physician's contact information, insurance provider's name, insurer's address, insurer's telephone number, medical history.

25. The method of claim 18, comprising providing at least one processor positioned within the interactive medical card configured for performing any one or more of the following: validating a biometric sample with a biometric identifier; releasing the detachable prescription element; and communicating with a computer via an application program.

26. The method of claim 18, comprising reading any one or more of the following: a biometric sample, biometric identifier stored on the interactive medical card or medical information; releasing the detachable prescription element; and communicating with a computer via an application program.

27. A method comprising:

(a) providing a computer; and

(b) providing an application program executable on the computer for carrying out the operations of:

(i) establishing access to the patient's medical information stored on an interactive medical card;

(ii) retrieving patient's medical information from the interactive medical card;

(iii) storing patient's medical information received from a medical care provider on the interactive medical card; or the computer, or a combination of the computer and the interactive medical card;

(iv) validating authorized access to the patient's medical information by the medical care provider;

(v) detecting a presence of at least one medical information field, or fields, adapted for receiving patient medical information; and

(vi) automatically propagating the field or fields with patient's medical information.

* * * * *