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(54) **SCANNER GLOVES AND REAL-TIME TRACKING SYSTEM**

(71) Applicant: **Tobias Hoeink**, Houston, TX (US)

(72) Inventor: **Tobias Hoeink**, Houston, TX (US)

(73) Assignee: **Baker Hughes Incorporated**, Houston, TX (US)

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(57) **ABSTRACT**

A scanning and monitoring glove system includes a glove member having a palm portion, a thumb portion and a plurality of finger portions, a product scanner integrated into the glove member, a digital camera integrated into one of the plurality of finger portions of the glove member, and a biometric scanning device integrated into the glove member. The biometric scanning device being operable to sense biometric data associated with a wearer of the glove member.

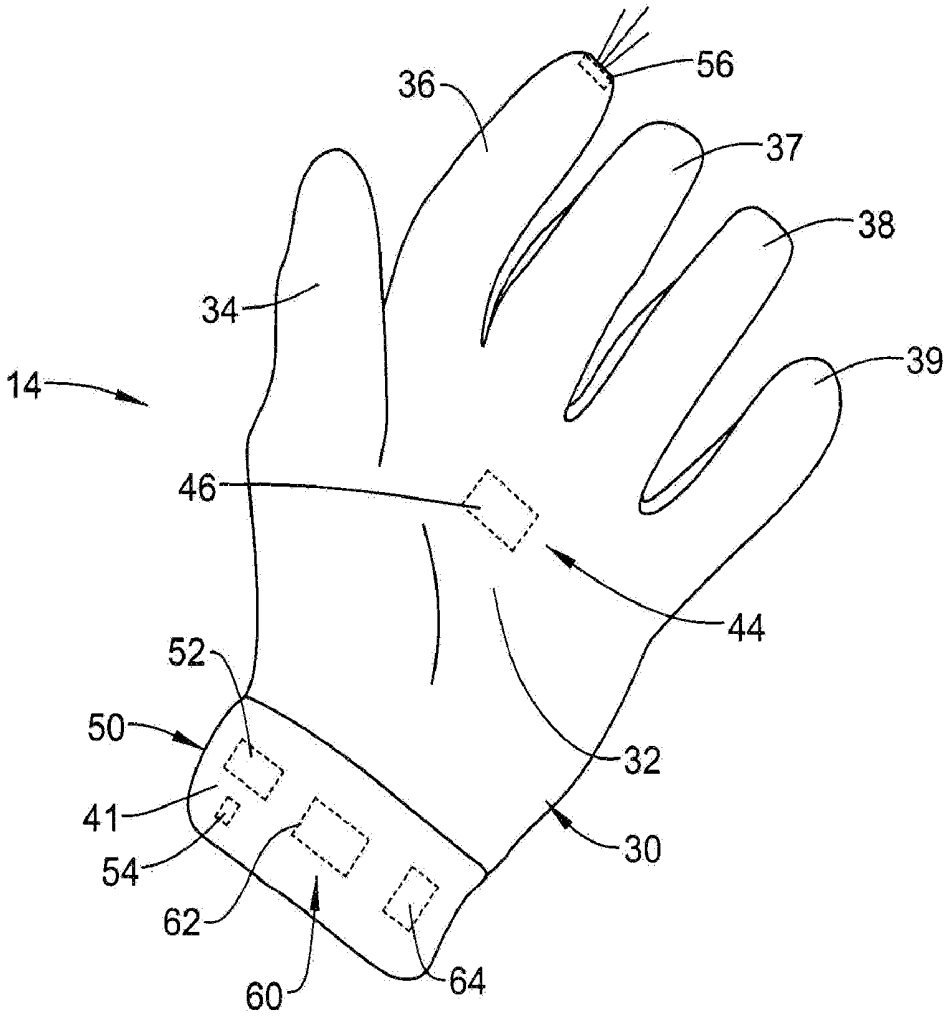


FIG. 1

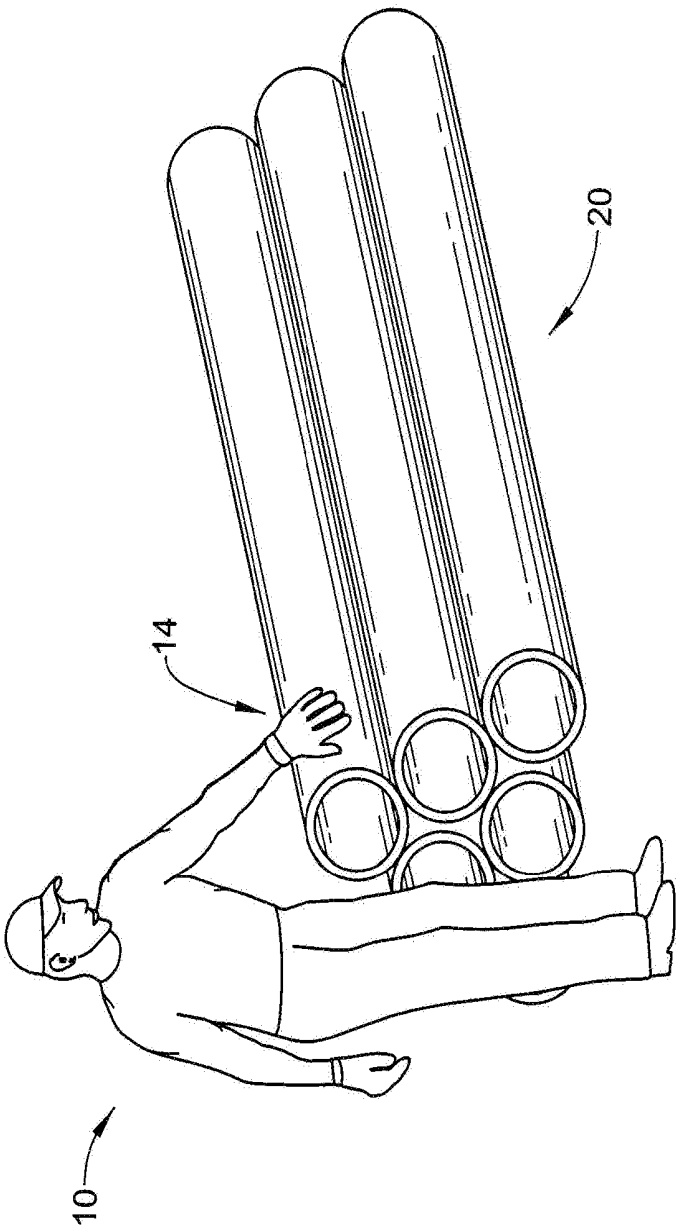


FIG. 2

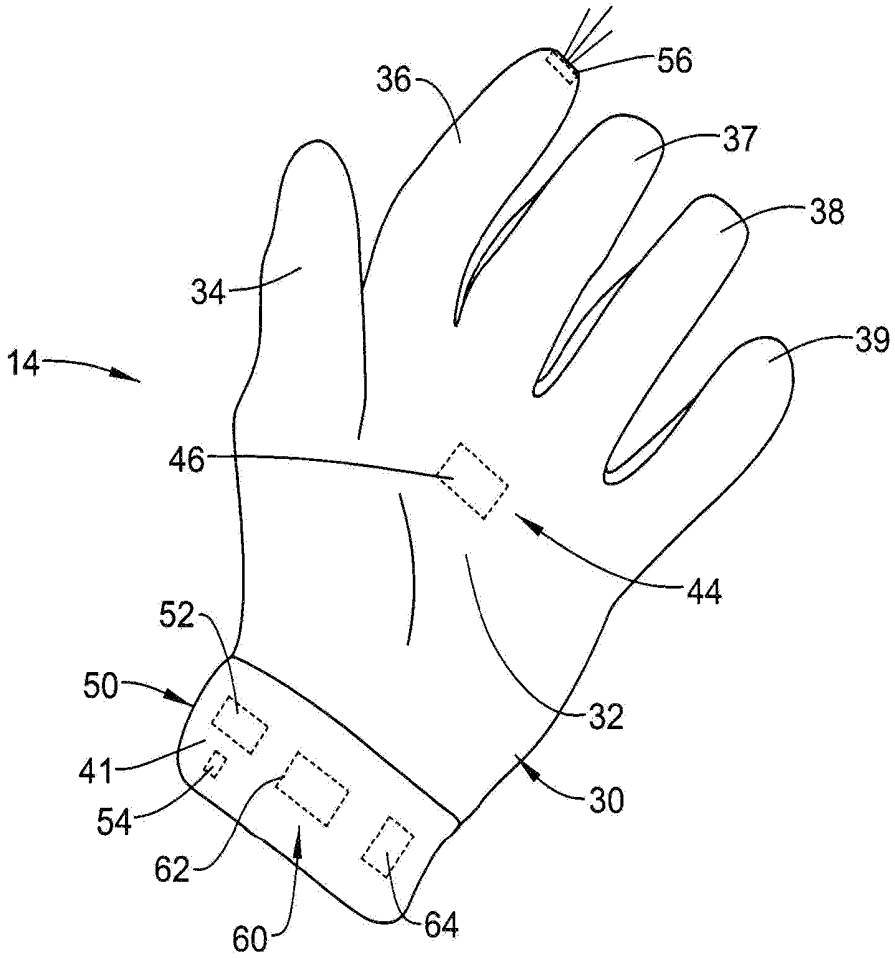
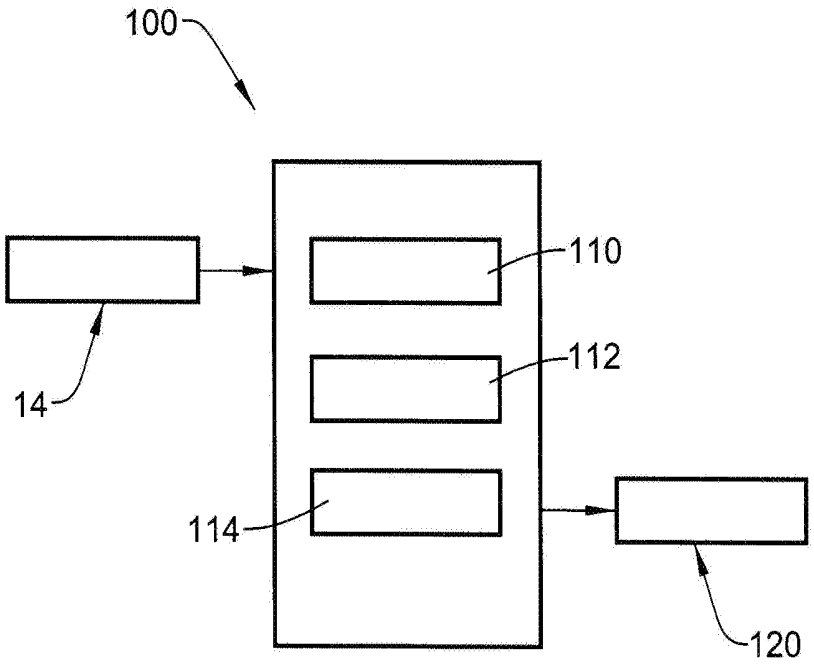


FIG. 3



SCANNER GLOVES AND REAL-TIME TRACKING SYSTEM

BACKGROUND

[0001] In complex operations, tracking numerous products, materials, tools, may be a herculean task. Accurately tracking materials, products and tools during various production operations and/or in various production facilities improves an overall profitability. That is, proper and accurate inventory control allows for better planning, reduced warehousing costs, more accurate accounting and increased profitability.

SUMMARY

[0002] A scanning and monitoring glove system includes a glove member having a palm portion, a thumb portion and a plurality of finger portions, a product scanner integrated into the glove member, a digital camera integrated into one of the plurality of finger portions of the glove member, and a biometric scanning device integrated into the glove member. The biometric scanning device being operable to sense biometric data associated with a wearer of the glove member.

[0003] An inventory tracking and worker monitoring system including a computer system having a central processing unit (CPU), a non-volatile memory and an input device operatively connected to the CPU, and a scanning and monitoring glove system including a glove member having a palm portion, a thumb portion and a plurality of finger portions, a product scanner integrated into the glove member, a digital camera integrated into one of the plurality of finger portions of the glove member, and a biometric scanning device integrated into the glove member, the biometric scanning device being operable to sense biometric data associated with a wearer of the glove member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Referring now to the drawings wherein like elements are numbered alike in the several Figures:

[0005] FIG. **1** depicts an individual wearing a scanning and monitoring glove system in accordance with an aspect of an exemplary embodiment;

[0006] FIG. **2** depicts the scanning and monitoring glove system of FIG. **1**; and

[0007] FIG. **3** depicts the scanning and monitoring glove system interfacing with an inventory control and worker monitoring system in accordance with an aspect of an exemplary embodiment.

DETAILED DESCRIPTION

[0008] An individual **10** wearing a scanning and monitoring glove system **14** in accordance with an exemplary embodiment is illustrated in FIG. **1**. Individual **10** may employ scanning and monitoring glove system **14** to track inventory, such as downhole tubulars **20**, tools (not shown) and/or other materials. As seen in FIG. **2**, scanning and monitoring glove system **14** includes a glove member **30** having a palm portion **32**, a thumb portion **34**, a plurality of finger portions **36-39**, and a cuff portion **41**.

[0009] In accordance with an aspect of an exemplary embodiment, glove member **30** includes a product scanner **44** that may be employed to detect materials, tools, supplies or other objects associated with, for example, a production operation. For example, product scanner **44** may be employed to scan tubulars **20** prior to introduction into a well bore. In this manner, a more accurate count of tubulars may be maintained. Product scanner **44** may take the form of a radio frequency identification (RFID) scanner **46**. Alternatively, product scanner **44** may take the form of a bar code scanner.

[0010] Glove member **30** may also include an output system **50** that provides an interface with other systems during and/or after individual **10** completes a shift. Output system **50** may include a wireless transmitter **52** and/or a communication portion **54** that facilitates a wired interface with glove member **30**. In this manner, individual **10** may download inventory data as well as other data either periodically during a shift or at the end of a workday as will be detailed more fully below.

[0011] In further accordance with an exemplary embodiment, glove member **30** includes a digital camera **56** integrated into finger portion **36**. Digital camera **56** may be employed by individual **10** to view areas that may be inaccessible, and/or areas that are not readily viewable to the human eye. Digital camera **56** is operatively connected to wireless transmitter **52** and/or communication portion **54** to allow transmission and/or downloading of captured images.

[0012] In still further accordance with an aspect of an exemplary embodiment, glove member **30** may include a biometric scanning device **60**. Biometric scanning device **60** may take the form of a heart rate monitor **62** incorporated into cuff portion **41**. Biometric scanning device **60** may take on other forms such as temperature sensing devices, hydration sensing devices, heart beat/pulse sensing, blood pressure sensing, and/or combinations thereof. Biometric scanning device **60** is operatively connected to, for example, wireless transmitter **52** thereby allowing a supervisor to determine various biometric statistics associated with individual **10**. In yet still further accordance with an exemplary aspect, glove member **30** may further include a global positioning system (GPS) device **64**. GPS device **64** may allow a supervisor other personnel to track individual **10**. In hazardous work environments, tracking health and location of employees may improve overall work place safety and productivity.

[0013] Scanning and monitoring glove system **14** may be integratable into an inventory tracking and working monitoring system **100** such as shown in FIG. **3**. Inventory tracking and worker tracking system **100** includes a central processing unit (CPU) **110** operably connected with a non-volatile memory **112** and an input device **114**. Input device **114** receives data from glove member **30** transmitted through wireless transmitter **52** or passed through a connector cable (not separately labeled) interfacing with communication portion **54**. Collected data may be output through an output device **120** which could take the form of a display, a smart phone or the like.

[0014] Inventory tracking and working monitoring system **100** may track inventory used, location of inventory, and or worker wellbeing. In the event that additional inventory is desired, inventory tracking and working monitoring system **100** may automatically signal a warehouse (not shown) to request a delivery. Additionally, inventory tracking and working monitoring system **100** may provide alerts to supervisory personnel indicating that a particular worker may be in distress. Often times, individual **10** may be in an operating environment that creates physical stresses. High tempera-

ture, low temperature, and arid environments all place physical stresses on workers. If a particular worker is approaching a predetermined stress limit, inventory tracking and working monitoring system **100** may signal a need for intervention. Intervention may take the form of fluids, or the need for medical personnel.

[0015] Embodiment 1: A scanning and monitoring glove system comprising: a glove member including a palm portion, a thumb portion and a plurality of finger portions; a product scanner integrated into the glove member; a digital camera integrated into one of the plurality of finger portions of the glove member; and a biometric scanning device integrated into the glove member, the biometric scanning device being operable to sense biometric data associated with a wearer of the glove member.

[0016] Embodiment 2: The scanning and monitoring glove system according to embodiment 1, further comprising: a memory device incorporated into the glove member and operatively connected to one or more of the product scanner, the digital camera, and the biometric scanning device.

[0017] Embodiment 3: The scanning and monitoring glove system according to embodiment 2, further comparing: a connection port integrated into the glove member and operatively connected to the memory, the connection port being connectable to a computer system through a wired connection.

[0018] Embodiment 4: The scanning and monitoring glove system according to embodiment 1, further comprising: a wireless communication device configured to wirelessly transmit data between the glove member and a computer system.

[0019] Embodiment 5: The scanning and monitoring glove system according to embodiment 1, further comprising: a global positioning system (GPS) device operable to determine a geographic position of the wearer.

[0020] Embodiment 6: The scanning and monitoring glove system according to embodiment 1, wherein the product scanner comprises a radio frequency identification (RFID) reader.

[0021] Embodiment 7: The scanning and monitoring glove system according to embodiment 1, wherein the product scanner comprises a bar code reader.

[0022] Embodiment 8: The scanning and monitoring glove system according to embodiment 1, wherein the biometric scanning device comprises a heart rate monitor.

[0023] Embodiment 9: The scanning and monitoring glove system according to embodiment 1, wherein the product scanner is integrated into the palm portion.

[0024] Embodiment 10: The scanning and monitoring glove system according to embodiment 1, wherein the glove member includes a cuff portion, the biometric scanning device being integrated into the cuff portion.

[0025] Embodiment 11: An inventory tracking and worker monitoring system comprising: a computer system including a central processing unit (CPU), a non-volatile memory and an input device operatively connected to the CPU; and a scanning and monitoring glove system comprising: a glove member including a palm portion, a thumb portion and a plurality of finger portions; a product scanner integrated into the glove member; a digital camera integrated into one of the plurality of finger portions of the glove member; and a biometric scanning device integrated into the glove member, the biometric scanning device being operable to sense biometric data associated with a wearer of the glove member.

[0026] Embodiment 12: The inventory tracking and worker monitoring system according to embodiment 11, further comprising: a memory device incorporated into the glove member and operatively connected to one or more of the product scanner, the digital camera, and the biometric scanning device.

[0027] Embodiment 13: The inventory tracking and worker monitoring system according to embodiment 12, further comparing: a connection port integrated into the glove member and operatively connected to the memory, the connection port being connectable to a computer system through a wired connection.

[0028] Embodiment 14: The inventory tracking and worker monitoring system according to embodiment 11, further comprising: a wireless communication device configured to wirelessly transmit data between the glove member and a computer system.

[0029] Embodiment 15: The inventory tracking and worker monitoring system according to embodiment 11, further comprising: a global positioning system (GPS) device operable to determine a geographic position of the wearer.

[0030] Embodiment 16: The inventory tracking and worker monitoring system according to Embodiment 11, wherein the product scanner comprises a radio frequency identification (RFID) reader.

[0031] Embodiment 17: The inventory tracking and worker monitoring system according to embodiment 11, wherein the product scanner comprises a bar code reader.

[0032] Embodiment 18: The inventory tracking and worker monitoring system according to embodiment 11, wherein the biometric scanning device comprises a heart rate monitor.

[0033] Embodiment 19: The inventory tracking and worker monitoring system according to embodiment 11, wherein the product scanner is integrated into the palm portion.

[0034] Embodiment 20: The inventory tracking and worker monitoring system according to embodiment 11, wherein the glove member includes a cuff portion, the biometric scanning device being integrated into the cuff portion.

[0035] While one or more embodiments have been shown and described, modifications and substitutions may be made thereto without departing from the spirit and scope of the invention. Further, while shown and described in connection with downhole operations, the scanning and monitoring glove system may be employed in a wide range of operating environments where it is desirable to track inventory and or worker wellbeing. Accordingly, it is to be understood that the present invention has been described by way of illustrations and not limitation.

1. A scanning and monitoring glove system comprising:

a glove member including a palm portion, a thumb portion and a plurality of finger portions;

a product scanner integrated into the glove member;

a digital camera integrated into one of the plurality of finger portions of the glove member; and

a biometric scanning device integrated into the glove member, the biometric scanning device being operable to sense wellbeing of a wearer of the glove member; and

an output device operably associated with the glove member operable to output inventory signals from the glove member and deliver worker wellbeing alerts.

2. The scanning and monitoring glove system according to claim **1**, further comprising: a memory device incorporated into the glove member and operatively connected to one or more of the product scanner, the digital camera, and the biometric scanning device.

3. The scanning and monitoring glove system according to claim **2**, further comparing: a connection port integrated into the glove member and operatively connected to the memory, the connection port being connectable to a computer system through a wired connection.

4. The scanning and monitoring glove system according to claim **1**, further comprising: a wireless communication device configured to wirelessly transmit data between the glove member and a computer system.

5. The scanning and monitoring glove system according to claim **1**, further comprising: a global positioning system (GPS) device operable to determine a geographic position of the wearer.

6. The scanning and monitoring glove system according to claim **1**, wherein the product scanner comprises a radio frequency identification (RFID) reader.

7. The scanning and monitoring glove system according to claim **1**, wherein the product scanner comprises a bar code reader.

8. The scanning and monitoring glove system according to claim **1**, wherein the biometric scanning device comprises a heart rate monitor.

9. The scanning and monitoring glove system according to claim **1**, wherein the product scanner is integrated into the palm portion.

10. The scanning and monitoring glove system according to claim **1**, wherein the glove member includes a cuff portion, the biometric scanning device being integrated into the cuff portion.

11. An inventory tracking and worker monitoring system comprising:

a computer system including a central processing unit (CPU), a non-volatile memory and an input device operatively connected to the CPU; and

a scanning and monitoring glove system comprising:

a glove member including a palm portion, a thumb portion and a plurality of finger portions;

a product scanner integrated into the glove member;

a digital camera integrated into one of the plurality of finger portions of the glove member;

a biometric scanning device integrated into the glove member, the biometric scanning device being operable to sense wellbeing of a wearer of the glove member; and

an output device operably associated with the glove member operable to output inventory signals from the glove member and deliver worker wellbeing alerts.

12. The inventory tracking and worker monitoring system according to claim **11**, further comprising: a memory device incorporated into the glove member and operatively connected to one or more of the product scanner, the digital camera, and the biometric scanning device.

13. The inventory tracking and worker monitoring system according to claim **12**, further comparing: a connection port integrated into the glove member and operatively connected to the memory, the connection port being connectable to a computer system through a wired connection.

14. The inventory tracking and worker monitoring system according to claim **11**, further comprising: a wireless communication device configured to wirelessly transmit data between the glove member and a computer system.

15. The inventory tracking and worker monitoring system according to claim **11**, further comprising: a global positioning system (GPS) device operable to determine a geographic position of the wearer.

16. The inventory tracking and worker monitoring system according to claim **11**, wherein the product scanner comprises a radio frequency identification (RFID) reader.

17. The inventory tracking and worker monitoring system according to claim **11**, wherein the product scanner comprises a bar code reader.

18. The inventory tracking and worker monitoring system according to claim **11**, wherein the biometric scanning device comprises a heart rate monitor.

19. The inventory tracking and worker monitoring system according to claim **11**, wherein the product scanner is integrated into the palm portion.

20. The inventory tracking and worker monitoring system according to claim **11**, wherein the glove member includes a cuff portion, the biometric scanning device being integrated into the cuff portion.

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专利名称(译)	扫描仪手套和实时跟踪系统		
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申请号	US15/073297	申请日	2016-03-17
[标]申请(专利权)人(译)	hoeink托拜厄斯		
申请(专利权)人(译)	HOEINK，托比亚斯.		
当前申请(专利权)人(译)	贝克休斯公司		
[标]发明人	HOEINK TOBIAS		
发明人	HOEINK, TOBIAS		
IPC分类号	G06K7/14 G06Q10/08 A61B5/00 A41D19/00 A61B5/024		
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摘要(译)

扫描和监视手套系统包括具有手掌部分，拇指部分和多个手指部分的手套构件，集成到手套构件中的产品扫描器，集成到手套构件的多个手指部分之一中的数码相机和集成在手套构件中的生物识别扫描装置。生物识别扫描装置可操作以感测与手套构件的佩戴者相关联的生物识别数据。