(12) **United States Patent**
Johnson

(10) **Patent No.: US 8,368,511 B2**
(45) **Date of Patent: Feb. 5, 2013**

(54) **METHOD FOR MONITORING A PACKAGE, SENTINEL INDICATOR SYSTEM AND LOGISTICS SYSTEM**

(75) Inventor: **Brian Johnson**, Surprise, AZ (US)

(73) Assignee: **Deutsche Post AG**, Bonn (DE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 421 days.

(21) Appl. No.: **12/532,495**

(22) PCT Filed: **Mar. 19, 2008**

(86) PCT No.: **PCT/EP2008/002199**

§ 371 (c)(1),
(2), (4) Date: **Mar. 11, 2010**

(87) PCT Pub. No.: **WO2008/113574**

PCT Pub. Date: **Sep. 25, 2008**

(65) **Prior Publication Data**

US 2010/0164686 A1 Jul. 1, 2010

Related U.S. Application Data

(60) Provisional application No. 60/919,715, filed on Mar. 22, 2007.

(51) **Int. Cl.**

G05B 19/00	(2006.01)
H04Q 5/22	(2006.01)
G01D 3/00	(2006.01)

(52) **U.S. Cl.** **340/5.92**; 340/572.1; 340/10.1; 340/10.3; 340/568.1; 702/108; 702/188; 702/187

(58) **Field of Classification Search** 340/539.31, 340/652, 635, 945, 984, 505, 540, 541, 572.1, 340/673, 570, 568.1, 5.92; 702/50–56, 108, 702/188, 187, 122; 705/28; 109/41, 42

See application file for complete search history.

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PCT International Search Report for PCT/EP2008/002199, International Filing Date Mar. 19, 2008.

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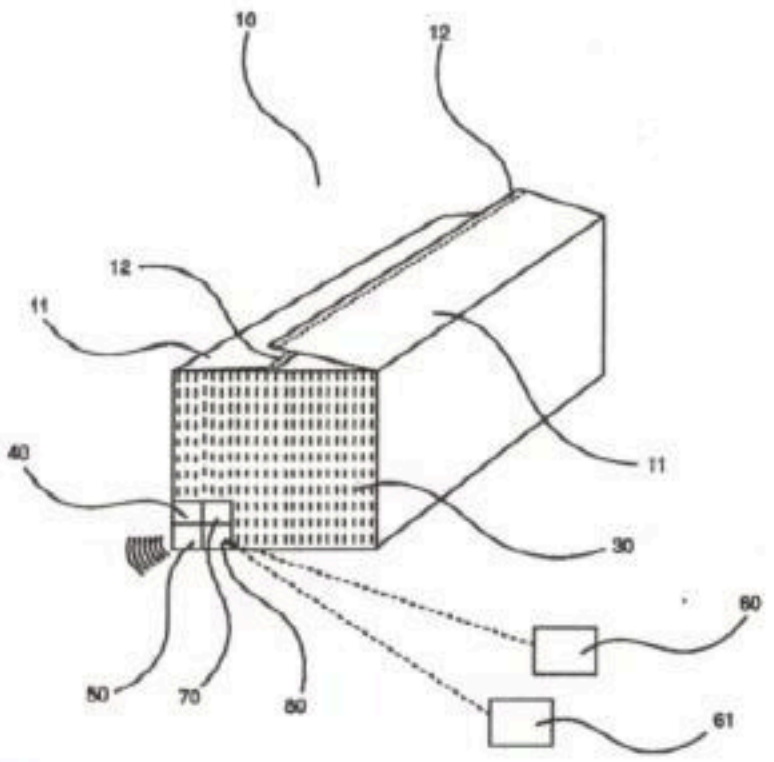
(57) **ABSTRACT**

There is provided a method for monitoring a package for storage and/or transport of at least one item. An exemplary method comprises receiving at a transmission unit measured data about properties of the item and/or about influences on the item via at least two sensors. The exemplary method also comprises executing via the transmission unit a decision of a logical node of a logistics system about a selection of data transmitted to a receiving unit. The exemplary method additionally comprises sending information about the desired selection of data from a control unit to the transmission unit. Finally, the exemplary method comprises enabling a user to make a selection relating to types of data to be transmitted.

16 Claims, 4 Drawing Sheets



THIS IS TO CERTIFY *that this is a true copy from the records of the U.S. Patent and Trademark Office of the first page of the above identified patent:*

Certifying Officer 6/13/2018 *Date*

(12) **United States Patent**
Johnson

(10) **Patent No.: US 8,310,379 B2**
(45) **Date of Patent: Nov. 13, 2012**

(54) **MONITORING DEVICE FOR A TRACKING SYSTEM**

(75) Inventor: **Brian Johnson**, Surprise, AZ (US)

(73) Assignee: **Deutsche Post AG**, Bonn (DE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 504 days.

(21) Appl. No.: **12/532,488**

(22) PCT Filed: **Mar. 19, 2008**

(86) PCT No.: **PCT/EP2008/002204**

§ 371 (c)(1),
(2), (4) Date: **Sep. 22, 2009**

(87) PCT Pub. No.: **WO2008/113578**

PCT Pub. Date: **Sep. 25, 2008**

(65) **Prior Publication Data**

US 2010/0102993 A1 Apr. 29, 2010

Related U.S. Application Data

(60) Provisional application No. 60/919,714, filed on Mar. 22, 2007.

(51) **Int. Cl.**
G08G 1/123 (2006.01)

(52) **U.S. Cl.** **340/988**; 340/10.1; 340/825.49

(58) **Field of Classification Search** 340/988, 340/572.1–572.9, 10.1, 825.54, 539.1, 568.1, 340/825.49

See application file for complete search history.

(56) **References Cited**

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PCT International Search Report for PCT/EP2008/002204, International Filing Date Mar. 19, 2008.

(Continued)

Primary Examiner — Daniel Previl

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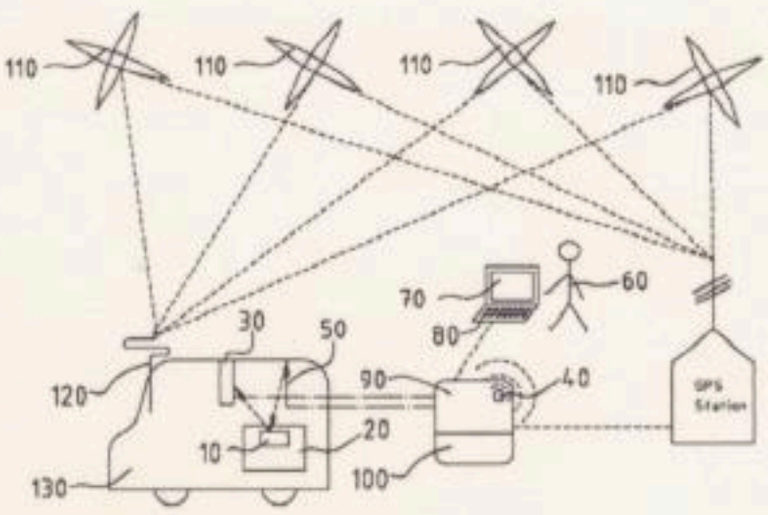
(57) **ABSTRACT**

A monitoring device for a tracking system is described. The device includes a: communication circuit for communication with radio frequency identification (RFID) tag on an article to-be transported by the vehicle, and a-position system (PS) circuit for determining vehicle location. The device includes a control circuit having a microprocessor and a memory, and electrically connected to the communication and PS circuits. The microprocessor acquires tag data and location in memory, and operates the communication circuit to: interrogate tag, operate the PS circuit to determine vehicle location, and associate tag data with vehicle location The device includes an alarm electrically connected to the microprocessor. The device determines, approximates, distance from the tag to device, based on received signal strength, or time delay in receiving the tag's response, and activates the alarm if a distance threshold from tag to device is exceeded. This threshold is lower than the maximum range of the tag.

20 Claims, 1 Drawing Sheet



(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 September 2008 (25.09.2008)

PCT

(10) International Publication Number
WO 2008/113568 A1

(51) International Patent Classification:
G06Q 10/00 (2006.01)

(21) International Application Number:
PCT/EP2008/002192

(22) International Filing Date: 19 March 2008 (19.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/919,681 22 March 2007 (22.03.2007) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PARCEL DROP BOX, SYSTEM AND METHOD FOR MONITORING STATUS OF PARCEL DROP BOX

(57) Abstract: The present invention relates to a parcel drop box with an integrated apparatus for monitoring the status of the parcel drop box. The drop box is equipped with a wireless communication module which can communicate with respective wireless communication modules of remote drop boxes via a mesh network. The communication module dynamically and automatically routes data received from sensors of the drop box or from remote drop boxes to a parcel drop box which comprises a communication gateway module coupled to a central controller unit. The central controller can thereby collect data from all parcel drop boxes via one drop box with a gateway module. The invention further relates to a system and method for monitoring such drop boxes via a mesh network.

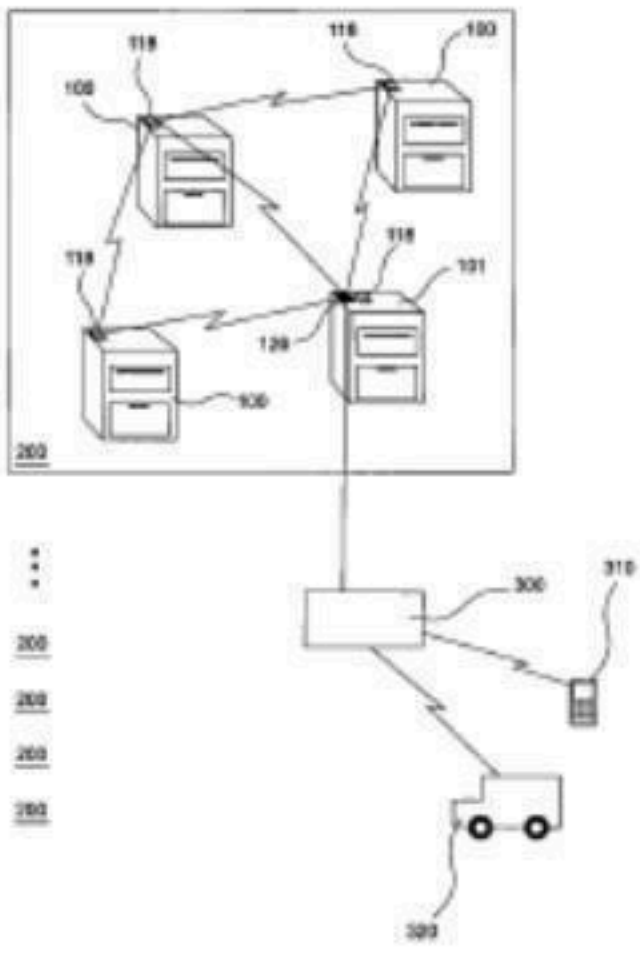

Fig. 2

WO 2008/113568 A1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 April 2009 (02.04.2009)

PCT

(10) International Publication Number
WO 2009/039952 A1

(51) International Patent Classification:
G07B 17/00 (2006.01)

(21) International Application Number:
PCT/EP2008/007352

(22) International Filing Date:
9 September 2008 (09.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/995,160 25 September 2007 (25.09.2007) US

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(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

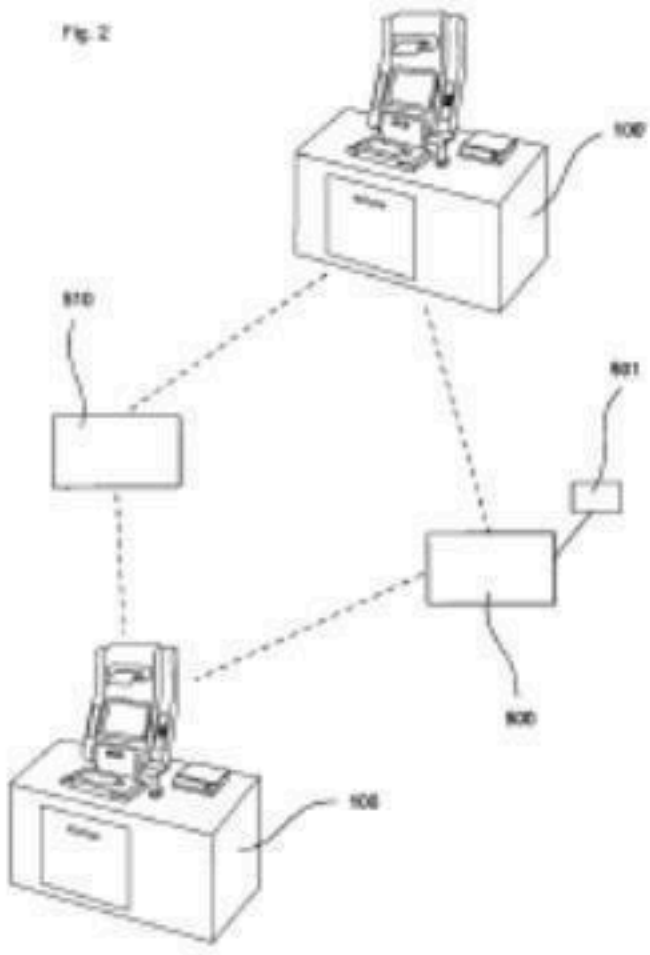
Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *of inventorship (Rule 4.17(iv))*

[Continued on next page]

(54) Title: DEVICE AND METHOD FOR AUTOMATED ORDER AND PAYMENT OF TRANSPORT OF A POSTAL ITEM



(57) Abstract: Disclosed herein is a device and method for automated order and payment of the transport of a postal item via a service kiosk. In particular, a service kiosk allows customers to choose between different transport companies for the transport of a postal item and enables a customer to compare the transport fees of these different transport companies. Preferably, the service kiosk can contact the websites of different transport companies and when the transport fee required from the transport company that operates the service kiosk is smaller than the transport fee calculated by the transport company which was originally chosen by the customer, the difference between transport fees is displayed to the customer and the customer can then change the transport company for his or her order.

WO 2009/039952 A1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

PCT

(43) International Publication Date
2 April 2009 (02.04.2009)

(10) International Publication Number
WO 2009/039953 A8

(51) International Patent Classification:
G06Q 10/00 (2006.01)

(21) International Application Number:
PCT/EP2008/007353

(22) International Filing Date:
9 September 2008 (09.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/995,029 24 September 2007 (24.09.2007) US

(71) Applicant *(for all designated States except US)*: **DEUTSCHE POST AG** [DE/DE]; Charles-de-Gaulle Strasse 20, 53113 Bonn (DE).

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(75) Inventor/Applicant *(for US only)*: **JOHNSON, Brian** [US/US]; 14544 N. 156th Lane, Surprise, AZ 85379 (US).

(74) Agent: **JOSTARNDT PATENTANWALTS-AG**; Brüsseler Ring 51, 52074 Aachen (DE).

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(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,

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(54) Title: METHOD FOR OPERATING A SHIPPING PROCESS WITHIN A LOGISTICS SYSTEM

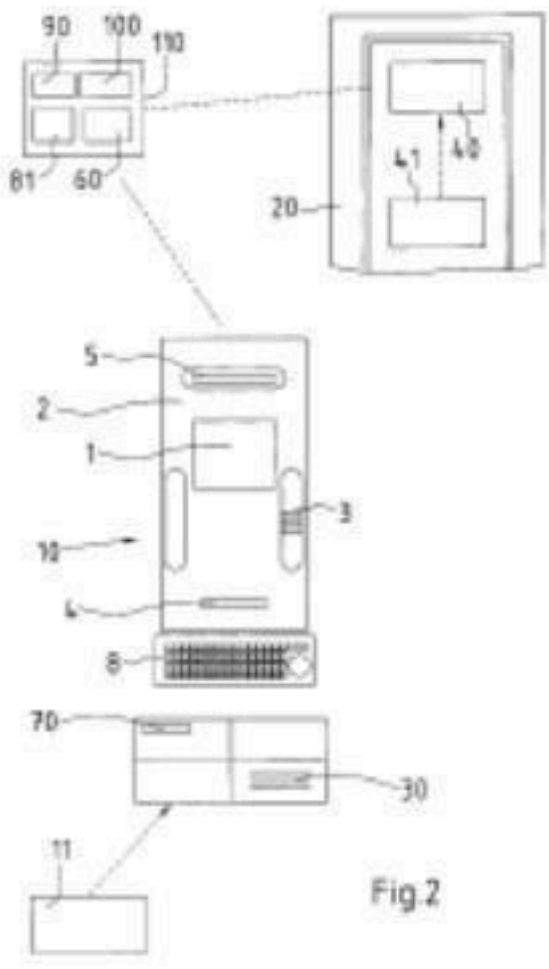

Fig.2

(57) Abstract: The invention relates to a method for operating a shipping process within a logistics system as well a to a corresponding logistics system. The method for operating a shipping process within a logistics system with a first client (10) and a shipping station (20) comprising a second client (40), both clients (10, 40) connected to a server (110), wherein a shipment (30) is deposited at the shipping station (20), is characterized by the following steps: receiving identification and/or authentication data on the shipment (30) via the first client (10) and forwarding the data to the server (110), processing the data and preparing a pre-configuration of the shipping process, forwarding the pre-configuration of the shipping process to the second client (40), supplementing the pre-configuration of the shipping process via the second client (40) when the shipment (30) is deposited at the shipping station (20).

WO 2009/039953 A8

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

PCT

(43) International Publication Date
25 September 2008 (25.09.2008)

(10) International Publication Number
WO 2008/113575 A1

(51) International Patent Classification:
G06Q 10/00 (2006.01)

(21) International Application Number:
PCT/EP2008/002200

(22) International Filing Date: 19 March 2008 (19.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/919,713 22 March 2007 (22.03.2007) US

(71) Applicant *(for all designated States except US)*: **DEUTSCHE POST AG** [DE/DE]; Charles-De-Gaulle-Strasse 20, 53113 Bonn (DE).

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(74) Agent: **JOSTARNDT PATENTANWALTS-AG**; Brüsseler Ring 51, 52074 Aachen (DE).

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(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*

(54) Title: METHOD FOR DELIVERING ITEMS, LOGISTICS SYSTEM AND MOBILE USER EQUIPMENT CAPABLE FOR UTILIZATION IN THE LOGISTICS SYSTEM

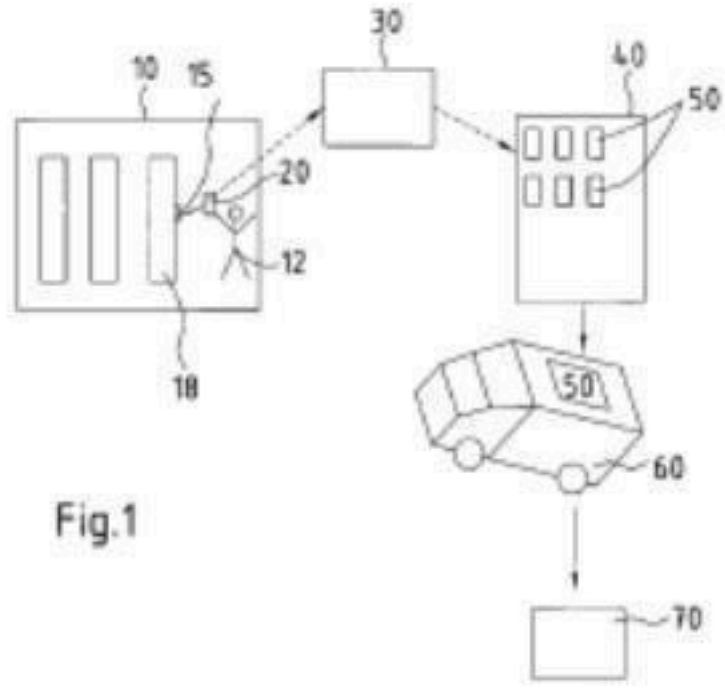

Fig.1

(57) Abstract: The invention relates to a method for delivering at least one item (50). The method is carried out in that information about the item (50) is made available at a selection base (10), that the information about the item (50) is entered into a mobile user equipment (20), that the mobile user equipment (20) sends the information to a central control unit (30), that the central control unit sends an electronic order to a warehouse (40) to start a commissioning of the item (50). The invention further includes a computer program product for carrying out the method, a mobile user equipment and a logistics system.

WO 2008/113575 A1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

PCT

(43) International Publication Date
25 September 2008 (25.09.2008)

(10) International Publication Number
WO 2008/113573 A1

(51) International Patent Classification:
G06Q 10/00 (2006.01)

(21) International Application Number:
PCT/EP2008/002198

(22) International Filing Date: 19 March 2008 (19.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/919,680 22 March 2007 (22.03.2007) US

(71) Applicant *(for all designated States except US)*: **DEUTSCHE POST AG** [DE/DE]; Charles-de-Gaulle-Strasse 20, 53113 Bonn (DE).

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(75) Inventor/Applicant *(for US only)*: **JOHNSON, Brian** [US/US]; 14544 N. 156th Lane, Surprise, Arizona 85379 (US).

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[Continued on next page]

(54) Title: METHOD FOR SHIPPING DELIVERIES; SHIPPING STATION AND LOGISTICS SYSTEM

(57) Abstract: The method comprises a method of operating a shipping station A method for operating a shipping station (10), whereby at least one user (31) is authorized to deposit shipments the method comprising depositing shipment (30) from a user (31) so that it can be forwarded to a logistics service provider (40), characterized by the following steps: - acquiring data about an intended shipment by a first acquisition means (50) separated from the shipping station (10) and - supplementing the shipment information (70) pertaining to the shipment (30) by means of a second acquisition means (80) located at the shipping station (10). The invention further comprises the shipping station and a logistics system containing the shipping station (10).

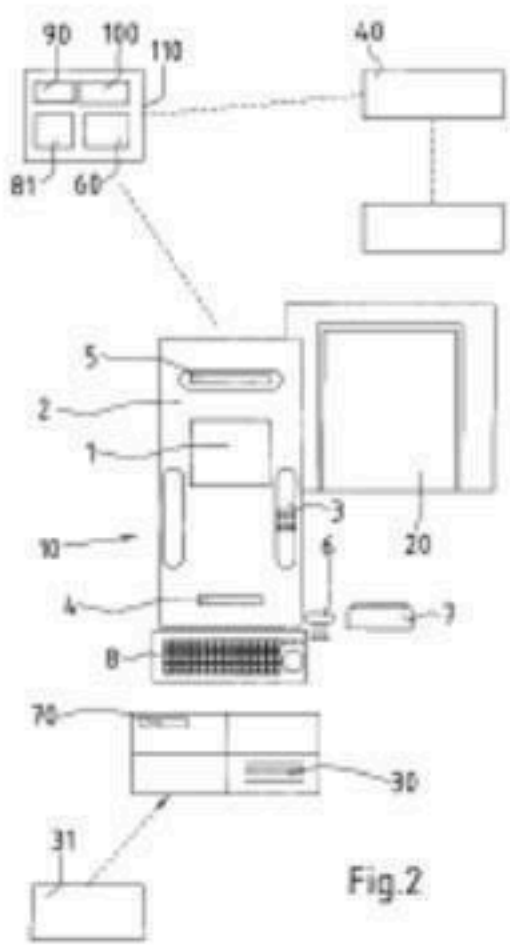

Fig.2

WO 2008/113573 A1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

PCT

(43) International Publication Date
25 September 2008 (25.09.2008)

(10) International Publication Number
WO 2008/113574 A2

(51) International Patent Classification:
G08B 13/12 (2006.01) *B65D 79/02* (2006.01)
G08B 25/10 (2006.01)

(21) International Application Number:
PCT/EP2008/002199

(22) International Filing Date: 19 March 2008 (19.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/919,715 22 March 2007 (22.03.2007) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *of inventorship (Rule 4.17(iv))*

Published:
— *without international search report and to be republished upon receipt of that report*

(54) Title: METHOD FOR MONITORING A PACKAGE, SENTINEL INDICATOR SYSTEM AND LOGISTICS SYSTEM

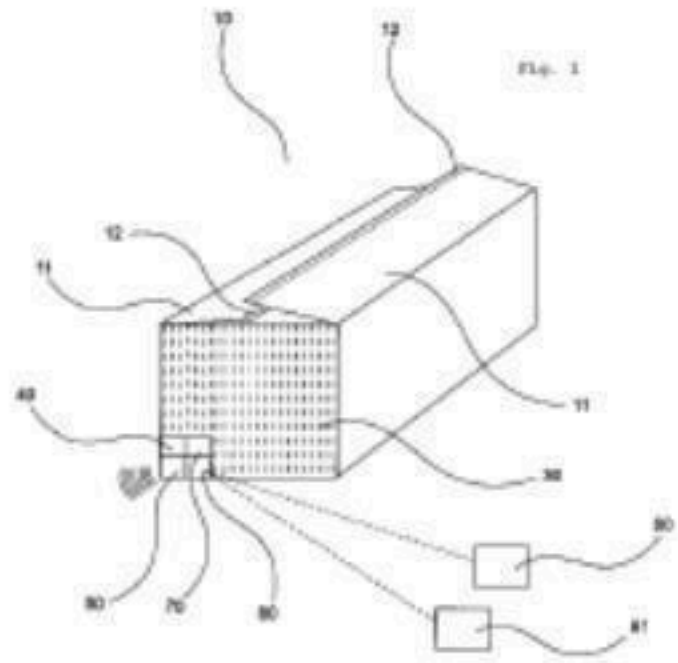

Fig. 1

(57) Abstract: The invention relates to a method for monitoring a package for storage and/or transport of at least one item, wherein data about properties of the item and/or about influences on the items are measured. According to the invention the method is carried out in a way, that at least two sensors are equipped in a way enabling them for measuring the data, wherein a sending unit relates the data of the at least two sensors. The invention furthermore comprises a sentinel indicator system and a logistics system.

WO 2008/113574 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

PCT

(43) International Publication Date
25 September 2008 (25.09.2008)

(10) International Publication Number
WO 2008/113578 A1

(51) International Patent Classification:
G06Q 10/00 (2006.01)

(21) International Application Number:
PCT/EP2008/002204

(22) International Filing Date: 19 March 2008 (19.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/919,714 22 March 2007 (22.03.2007) US

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Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*

(54) Title: MONITORING DEVICE FOR A TRACKING SYSTEM

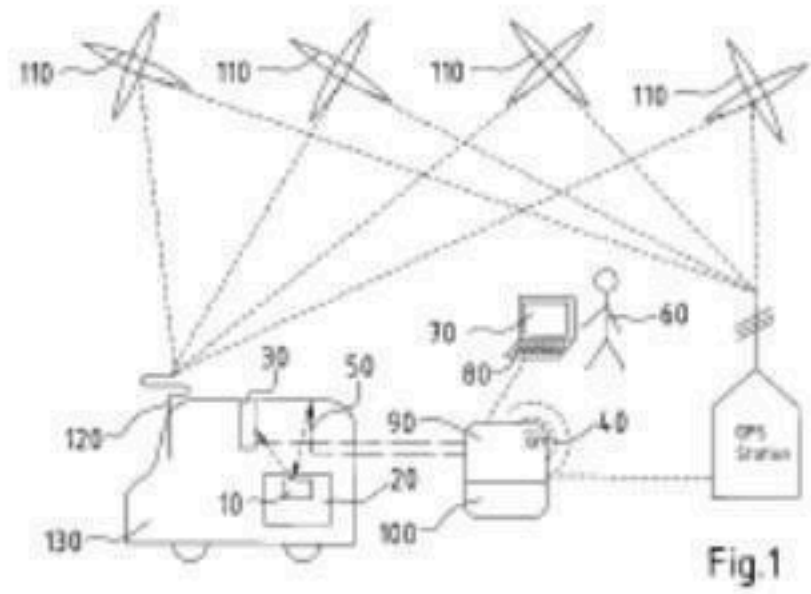

Fig.1

(57) Abstract: The invention relates to a monitoring device for a tracking system adapted for use in at least one vehicle, comprising: a communication circuit adapted for communication with at least one RFID (radio frequency identification) RFID tag on an article to be transported by the vehicle; a PS (position system) circuit adapted for determining a location of the vehicle, a control circuit having a microprocessor and a memory, the control circuit being electrically connected to the communication circuit and the PS circuit; a computer readable program code stored in the memory and executing under control of the microprocessor, the program code having means for acquiring the RFID tag data and the location data in the memory, means for operating the communication circuit to interrogate the RFID tag, means for operating the PS circuit to determine a location of the vehicle, and means for associating the RFID tag data with the location data of the vehicle. The invention also relates to a corresponding tracking system adapted for use in at least one vehicle, comprising at least one RFID (radio frequency identification) tag and a monitoring device.

WO 2008/113578 A1