

Nicolas Vargas

Search history

Search FT=(delivery connector and compartment and tag reader and tank) and PN=(US2014129038) (Results 1)

1:

Search PN=(WO2016073267) (Results 1)

2:

Search [SP]: 1. a crossover protection system comprising: an electronic control unit comprising a first processor, first network interface hardware communicatively coupled to the first processor, a first memory module communicatively coupled to the first processor, and first machine readable instructions stored in the first memory module a tank delivery connector communicatively coupled to the electronic control unit, the tank delivery connector comprising a second processor, a tank tag reader communicatively coupled to the second processor, second network interface hardware communicatively coupled to the second processor, a second memory module communicatively coupled to the second processor, and second machine readable instructions stored in the second memory module a display communicatively coupled to the electronic control unit, wherein: the second machine readable instructions stored in the second memory module cause the tank delivery connector to perform at least the following when executed by the second processor: read a tank tag with the tank tag reader and transmit a tank tag indicator associated with the tank tag with the second network interface hardware the first machine readable instructions stored in the first memory module cause the electronic control unit to perform at least the following when executed by the first processor: receive the tank tag indicator with the first network interface hardware determine a distribution tank fuel type associated with a distribution tank based on the tank tag indicator determine that the tank delivery connector is associated with a first tank compartment of a product delivery vehicle based on the tank tag indicator and display a graphical user interface on the display, the graphical user interface comprising: a schematic representation of the product delivery vehicle, the schematic representation including a plurality of tank compartment graphics, each tank compartment graphic of the plurality of tank compartment graphics depicting a tank compartment of the product delivery vehicle, the plurality of tank compartment graphics including a first tank compartment graphic and a second tank compartment graphic, wherein the first tank compartment graphic is associated with the first tank compartment of the product delivery vehicle and the second tank compartment graphic is associated with a second tank compartment of the product delivery vehicle and a tank delivery connector graphic displayed proximate the first tank compartment graphic to indicate that the tank delivery connector is associated with the first tank compartment. 2. the crossover protection system of claim 1, wherein the tank delivery connector graphic is displayed proximate the first tank compartment graphic to indicate that fuel is flowing through the tank delivery connector from the first tank compartment. 3. the crossover protection system of claim 1, wherein the graphical user interface further comprises a plurality of graphical indications of fuel type, wherein the plurality of graphical indications of fuel type include a first graphical indication of fuel type and a second graphical indication of fuel type, wherein the first graphical indication of fuel type is displayed proximate the first tank compartment graphic, thereby indicating that the first tank compartment includes a first fuel type, wherein the second graphical indication of fuel type is displayed proximate the second tank compartment graphic, thereby indicating that the second tank compartment includes a second fuel type. 4. the crossover protection system of claim 1, the graphical user interface further comprising a bypass status indicator, a loading status indicator, and a master air status indicator. 5. the crossover protection system of claim 1, the graphical user interface further comprising a plurality of api status indicators and a plurality of solenoid status indicators, wherein the plurality of api status indicators includes a first api status indicator and a second api status indicator, wherein the plurality of solenoid status indicators includes a first solenoid status indicator and a second solenoid status indicator, wherein the first api status indicator and the first solenoid status indicator are displayed proximate the first tank compartment, wherein the second api status indicator and the second solenoid status indicator are displayed proximate the second tank compartment. 6. the crossover protection system of claim 1, the graphical user interface further comprising a tank delivery connector status portion. 7. the crossover protection system of claim 6, wherein the tank delivery connector status portion displays status information for a plurality of tank delivery connectors, wherein the status information for a first tank delivery connector of the plurality of tank delivery connectors includes that the first tank delivery connector has not yet been detected, that the first tank delivery connector is idle, that the first tank delivery connector is locked into place on the distribution tank, that the first tank delivery connector is searching for the tank tag, that the first tank delivery connector has read the tank tag, that the first tank delivery connector has read the tank tag of a particular fuel type, or that fuel is flowing through the first tank delivery connector. 8. a crossover protection system comprising: an electronic control unit comprising a first processor, first network interface hardware communicatively coupled to the first processor, a first memory module communicatively coupled to the first processor, and first machine readable instructions stored in the first memory module a tank delivery connector communicatively coupled to the electronic control unit, the tank delivery connector comprising a second processor, a tank tag reader communicatively coupled to the second processor, second network interface hardware communicatively coupled to the second processor, a second memory module communicatively coupled to the second processor, and second machine readable instructions stored in the second memory module a display communicatively coupled to the electronic control unit, wherein: the second machine readable instructions stored in the second memory module cause the tank delivery connector to perform at least the following when executed by the second processor: read a tank tag with the tank tag reader and transmit a tank tag indicator associated with the tank tag with the second network interface hardware the first machine readable instructions stored in the first memory module cause the electronic control unit to perform at least the following when executed by the first processor: receive the tank tag indicator with the first network interface hardware determine a distribution tank fuel type associated with a distribution tank based on the tank tag indicator and display a graphical user interface on the display, the graphical user interface comprising: a schematic representation of a product delivery vehicle, the schematic representation including a plurality of tank compartment graphics, each tank compartment graphic of the plurality of tank compartment graphics depicting a tank compartment of the product delivery vehicle, the plurality of tank compartment graphics including a first tank compartment graphic and a second tank compartment graphic, wherein the first tank compartment graphic is associated with a first tank compartment including a first fuel type that matches the distribution tank fuel type, and the second tank compartment graphic is associated with a second tank compartment including a second fuel type that does not match the distribution tank fuel type and an inactive graphic indication displayed proximate the second tank compartment graphic. 9. the crossover protection system of claim 8, wherein the inactive graphic indication comprises shading of the second tank compartment graphic. 10. the crossover protection system of claim 8, wherein the inactive graphic indication comprises an inactive icon. 11. the crossover protection system of claim 8, wherein the inactive graphic indication comprises a first color. 12. the crossover protection system of claim 8, wherein the inactive graphic indication is not displayed proximate the first tank compartment graphic. 13. the crossover protection system of claim 8, wherein the second machine readable instructions cause the tank delivery connector to read the tank tag with the tank tag reader, and transmit the tank tag indicator associated with the tank tag with the second network interface hardware in response to determining that the tank delivery connector is upright and determining that the tank delivery connector is locked onto the distribution tank. 14. a crossover protection system comprising: a processor a memory module communicatively coupled to the processor a display communicatively coupled to the processor and machine readable instructions stored in the memory module that cause the crossover protection system to perform at least the following when executed by the processor: display a graphical user interface on the display, the graphical user interface comprising: a schematic representation of a product delivery vehicle, the schematic representation including a plurality of tank compartment graphics, each tank compartment graphic of the plurality of tank compartment gra (Results 0)

Search [SP]: crossover protection system graphical user interfaces crossover protection system graphical user interfaces, crossover protection systems that display graphical user interfaces, and methods for pairing tank delivery connectors with product delivery vehicle systems are provided. a tank delivery connector reads a tank tag with a tank tag reader, and transmits a tank tag indicator associated with the tank tag with network interface hardware. an electronic control unit receives the tank tag indicator with network interface hardware, determines a distribution tank fuel type associated with a distribution tank based on the tank tag indicator, determines that the tank delivery connector is associated with a tank compartment of a product delivery vehicle based on the tank tag indicator, and displays a graphical user interface on the display. the graphical user interface includes a tank delivery connector graphic displayed proximate a tank compartment graphic to indicate that the tank delivery connector is associated with the first tank compartment. (Results 7)

Search 4 and graphical user interface (Results 1)

5:

Search PN=(US2014129038) (Results 1)

6:

Search [SP]: 1. a crossover protection system, comprising: a product transport vehicle comprising a tank compartment for containing a liquid product a valve coupled to the tank compartment, the valve regulating a flow of liquid product from the tank compartment and having a normally locked state a tank delivery connector fluidly coupled to a distribution side of the valve a tank tag reader for interrogating a tank tag coupled to a distribution tank separate from the product transport vehicle, wherein the tank tag reader: interrogates the tank tag to retrieve a stored liquid type encoded on the tank tag, wherein the stored liquid type is indicative of a type of the liquid product in the distribution

tank and transmits a stored liquid type signal indicative of the stored liquid type and a tank delivery connector id signal indicative of an identity of the tank delivery connector and a system controller communicatively coupled to the valve and the tank tag reader, the system controller comprising a processor and a storage medium containing computer readable and executable instructions which, when executed by the processor, cause the system controller to automatically: receive the tank delivery connector id signal from the tank tag reader; pair the tank delivery connector having the tank delivery connector id to the system controller; receive the stored liquid type signal; determine the stored liquid type based on the stored liquid type signal; compare a transported liquid type to the stored liquid type; maintain the valve in the normally locked state when the stored liquid type and the transported liquid type do not match to prevent the flow of liquid product from the tank compartment; and transition the valve from the normally locked state to an unlocked state when the stored liquid type and the transported liquid type match, thereby permitting the flow of liquid product from the tank compartment.

2. the crossover protection system of claim 1, further comprising a delivery hose fluidly coupling a hose adaptor to the tank delivery connector, wherein the tank delivery connector is fluidly coupled to the delivery hose and fluidly coupled to the distribution tank.

3. the crossover protection system of claim 1, wherein the tank tag reader is coupled to the tank delivery connector.

4. the crossover protection system of claim 1, further comprising a display communicatively coupled to the system controller and operable to display an unloading status of the tank compartment.

5. the crossover protection system of claim 1, wherein the tank delivery connector comprises a lock mechanism coupled to the tank delivery connector, the lock mechanism comprising a locking lever with a locked position and an unlocked position, the lock mechanism mechanically securing the tank delivery connector to the distribution tank when the locking lever is in the locked position.

6. the crossover protection system of claim 5, wherein the tank delivery connector comprises a lock sensor for sensing whether the locking lever is in the locked position or the unlocked position, wherein the lock sensor is mechanically coupled to the lock mechanism and electrically coupled to the tank tag reader, wherein the lock sensor provides a delivery connector locked signal when the locking lever is in the locked position and the tank tag reader transmits the delivery connector locked signal to the system controller when the tank delivery connector is secured to the distribution tank.

7. the crossover protection system of claim 6, wherein the computer readable and executable instructions, when executed by the processor, further cause the system controller to: receive the delivery connector locked signal, and enable the valve to transition from the normally locked state to the unlocked state.

8. the crossover protection system of claim 1, further comprising: a delivery hose fluidly coupling the tank compartment to the tank delivery connector, the delivery hose comprising a lock tag at a lock end of the delivery hose and a connector hose tag at a connector end of the delivery hose, wherein the lock tag and the connector hose tag are encoded with a first hose id wherein the processor of the system controller executes the computer readable and executable instructions to further: receive the first hose id encoded on the lock tag and on the connector hose tag; confirm that the delivery hose is coupled to both the tank delivery connector the tank compartment; after confirming that the delivery hose is coupled to both the tank delivery connector and the tank compartment, enable the valve to transition from the normally locked state to the unlocked state, subject to a determination that the transported liquid product type in the corresponding compartment matches the stored liquid product type of the distribution tank.

9. the crossover protection system of claim 8, further comprising: an adaptor tag reader communicatively coupled to the system controller and positioned on a hose adaptor coupled to the tank compartment, the adaptor tag reader interrogating the lock tag of the delivery hose at the lock end and sending an adaptor signal indicative of the first hose id to the system controller when the delivery hose is coupled to the hose adaptor and a hose tag reader communicatively coupled to the system controller and positioned on the tank delivery connector, the hose tag reader interrogating the connector hose tag at the connector end of the delivery hose and sending a hose signal indicative of the first hose id to the system controller when the delivery hose is coupled to the tank delivery connector.

10. the crossover protection system of claim 1, further comprising a product grade indicator (pgi) controller communicatively coupled to the system controller, the pgi controller comprising an input device for inputting a loaded liquid type into the pgi controller.

11. the crossover protection system of claim 10, wherein the computer readable and executable instructions, when executed by the processor, further cause the system controller to automatically: prevent the flow of loaded liquid product into the tank compartment with the valve when the loaded liquid type and the transported liquid type do not match; and allow the flow of loaded liquid product into the tank compartment with the valve when the loaded liquid type and the transported liquid type match.

12. the crossover protection system of claim 1, wherein the product transport vehicle comprises a plurality of tank compartments for containing liquid products, each of the plurality of tank compartments having a plurality of valves, individual ones of the plurality of valves being coupled to one of the plurality of tank compartments and regulating a flow of liquid product from the one of the plurality of tank compartments and having a normally locked state, wherein the machine readable instructions, when executed by the processor, cause the crossover protection system to perform the following: compare a transported liquid type in each of the plurality of tank compartments to the stored liquid type; maintain individual ones of the plurality of valves in the normally locked state when the transported liquid type in the corresponding tank compartment is not the same as the stored liquid type to prevent the flow of liquid product from the corresponding tank compartment; and transitioning individual ones of the plurality of valves from the normally locked state to an unlocked state when the transported liquid type in the corresponding tank compartment is the same as the stored liquid type, thereby allowing the flow of liquid product from the corresponding tank compartment.

13. a crossover protection system, comprising: a product transport vehicle comprising a tank compartment for containing a liquid product; a valve coupled to the tank compartment, the valve regulating a flow of liquid product into the tank compartment and having a normally locked state; a fluid property sensor positioned to contact the liquid product stored in the tank compartment and a system controller communicatively coupled to the valve and the fluid property sensor, the system controller comprising a processor and a storage medium containing computer readable and executable instructions which, when executed by the processor, cause the system controller to automatically: receive a loaded liquid type; receive a transported fluid property signal from the fluid property sensor, the transported fluid property signal being indicative of at least one of a viscosity, density, dielectric constant, and temperature of the liquid product in the tank compartment; determine a transported liquid type of the liquid product in the tank compartment based on the transported fluid property signal; compare the transported liquid type to the loaded liquid type; maintain the valve in the normally locked state or transition the valve from the unlocked state to the locked state when the loaded liquid type and the transported liquid type do not match to prevent the flow of liquid product into the tank compartment; and transition the valve from the normally locked state to an unlocked state or maintain the valve in the unlocked state when the loaded liquid type and the transported liquid type match, thereby permitting the flow of liquid product into the tank compartment.

14. the c (Results 0)

Search 8: [SP]: cross contamination control systems with fluid product id sensors a crossover protection system including a product transport vehicle having a tank compartment for containing a liquid product, a fluid property sensor positioned to contact liquid product stored in the tank compartment, a system controller, and a valve coupled to the tank compartment. the valve regulates a flow of liquid product from the tank compartment and has a normally locked state. the system controller may compare a received transported liquid type signal from the fuel property sensor indicative of the type of liquid product in the tank compartment and compare the type of liquid product to a stored liquid product type. if the two types match, the crossover protection controller transitions the valve to an unlocked state to allow the liquid product to unload from the tank compartment. if the two types do not match, the crossover protection controller will disable the valve from transitioning to the unlocked state. (Results 50)

Search 9: 8 and graphical user interface (Results 2)

Search 10: [SP]: 1. a system for confirming that a liquid product is to be dispensed into a storage tank from a tanker compartment before dispensing the liquid product, comprising: a wand computing device configured to generate a liquid product identification signal when positioned within proximity of a storage tank tag associated with a storage tank, wherein the liquid product identification signal identifies the liquid product contained in the storage tank; a dispense monitoring computing device configured to: identify each liquid product contained in each tanker compartment included in a tanker transport trailer as provided by a liquid product dispense database remote from the tanker transport trailer, wherein each liquid product initially loaded into each tanker compartment is uploaded into the liquid product dispense database; determine whether the liquid product identified by the liquid product identification signal matches the liquid product identified as being contained in each tanker compartment as provided by the remote liquid product dispense database; and generate a signal to notify an operator of an appropriate tanker compartment to dispense a liquid product contained in the appropriate tanker compartment into the storage tank when the liquid product identified by the liquid product identification signal matches the liquid product as being contained by the appropriate tanker compartment indicating that the liquid product contained in the appropriate tanker compartment is the same as the liquid product contained by the storage tank.

2. the system of claim 1, wherein the dispense monitoring computing device is further configured to: activate a positive lighting feature of an identification tag associated with the selected tanker compartment when the liquid product identified by the liquid product identification signal matches the liquid product identified as being contained by the appropriate tanker compartment to signal to the operator that dispensing of the liquid product contained by the appropriate tanker compartment is to be initiated; and activate a negative lighting feature of the identification tag associated with the appropriate tanker compartment when the liquid product identified by the liquid product identification signal fails to match the liquid product identified as being contained by the appropriate tanker compartment to signal to the operator that dispensing of the liquid product housed by the appropriate tanker compartment is not to be initiated.

3. the system of claim 2, wherein the dispense monitoring computing device is further configured to: prohibit dispensing of any liquid product contained in any of the tanker compartments to the storage tank when the liquid product identified by the liquid product identification signal fails to match any of the liquid products identified as being contained in any of the tanker compartments.

4. the system of claim 1, wherein a unique identification code is assigned to each liquid product initially loaded into each of the corresponding tanker compartments and is stored in the remote liquid product dispense database to identify each liquid product loaded into each corresponding tanker compartment.

5. the system of claim 4, wherein the dispense monitoring computing device is further configured to: convert the liquid product identification signal into a unique identification code; and compare the unique identification code of the liquid product identification signal to each unique identification code associated with each tanker compartment provided by the remote liquid product dispense database to determine whether the unique identification code of the liquid product identification signal matches any of the unique identification codes associated with any of the tanker compartments as provided by the remote liquid product database.

6. the system of claim 5, wherein the dispense monitoring computing device is further configured to: generate the signal to notify the operator of the appropriate tanker compartment to dispense the liquid product contained in the appropriate tanker compartment into the storage tank when the unique identification code identified by the liquid product identification signal matches the unique identification code associated with the appropriate tanker compartment indicating that the liquid product contained in the appropriate tanker compartment is the same as the liquid contained by the storage tank; and prohibit dispensing of any liquid product contained in any of the tanker compartments to the storage tank when the unique identification code identified by the liquid product identification signal fails to match any of the unique

identification codes associated with any of the tanker compartments. 7. the system of claim 1, wherein the dispense monitoring computing device is further configured to: periodically synchronize with the remote liquid product database to receive accurate liquid product identification information associated with an upcoming dispensing operation, wherein the liquid product identification information is information associated with the upcoming dispensing operation that is pertinent to ensure that the liquid product dispensed into the storage tank is correct. 8. the system of claim 1, wherein the dispense monitoring computing device is further configured to transmit updated liquid product identification data to the liquid product dispense database after the liquid product is dispensed into the storage tank. 9. the system of claim 8, wherein the dispense monitoring computing device is further configured to: query the liquid product dispense database for updated liquid product identification data associated with each dispensing operation that is executed during a period of time and generate a report displaying the updated liquid product identification data associated with each dispensing operation that is executed during the period of time. 10. the system of claim 9, wherein the dispense monitoring computing device is further configured to generate a geographic map that depicts each dispensing operation that is being executed during the period of time with each dispensing operation being displayed on the geographic map relative to global positioning system (gps) coordinates of each dispensing operation. 11. the system of claim of claim 10, wherein the dispense monitoring computing device is further configured to generate a geo-fence around a dispensing operation, wherein the geo-fence identifies a radius from a location of the dispensing operation. 12. the system of claim 11, wherein the dispense monitoring computing device is further configured to prevent the dispensing operation when the tanker transport trailer is positioned outside of the geo-fence. 13. the system of claim 11, wherein the dispense monitoring computing device is further configured to enable the dispensing operation when the tanker transport trailer is positioned within the geo-fence. 14. a method for confirming that a liquid product is to be dispensed into a storage tank from a tanker compartment before dispensing the liquid product comprising: identifying a liquid product contained in the storage tank from a liquid product identification signal generated by a wand computing device when the wand computing device is positioned within proximity of a storage tank tag associated with the storage tank identifying each liquid product contained in each tanker compartment included in a tanker transport trailer as provided by a liquid product dispense database remote from the tanker transport trailer, wherein each liquid product initially loaded into each tanker compartment is uploaded into the liquid product dispense database determining whether the liquid product identified by the liquid product identification signal matches the liquid product identified as being contained in each tanker compartment as provided by the remote liquid product dispense database and generating a signal to notify an operator of an appropriate tanker compartment to dispense a liquid product contained in the appropriate tanker compartment into the storage tank when the liquid product identified by the liquid product identification signal matches the liquid product identified as being contained by the appropriate tanker compartment indicating that the liquid product identified as being contained in the appropriate tanker compartment is the same as the liquid product contained by the storage tank. 15. the method of claim 14, further comprising: activating a positive lighting feature of an identification tag associated with the selected tanker compartment when the liquid product identified by the liquid product identification signal matches the liquid product identified as being contained by the appropriate tanker compartment to signal to the operator that dispensing of the liquid product contained by the appropriate tanker compartment is to be initiated and activating a negative lighting feature of the identification tag associated with the appropriate tanker compartment when the liquid product identified by the liquid product identification signal fails to match the liquid product identified as being contained by the appropriate tanker compartment to signal to the operator that dispensing of the liquid product contained by the appropriate tanker compartment is not to be initiated. 16. the method of claim 15, further comprising: prohibiting dispensing of any liquid product contained in any of the tanker c (Results 0)

Search [SP]: liquid product identification for dispensing in storage tanks a system for confirming that a liquid product is to be dispensed into a storage tank from a tanker compartment before dispensing the liquid product is disclosed. a wand computing device generates a liquid product identification signal that identifies the liquid product contained in the storage tank when positioned within proximity of a storage tank tag associated with the storage tank. a dispense monitoring computing device attempts to match the liquid product identified by the liquid product identification signal to the liquid products identified as contained in tanker compartments. the dispense monitoring computing device generates a signal to notify the operator that an appropriate tanker compartment contains liquid product that is the same as the liquid product contained by the storage tank and can be dispensed into the storage tank when the liquid product contained by the storage tank matches the liquid product contained by the appropriate tanker compartment. (Results 14)

Search 11 and graphical user interface (Results 2)

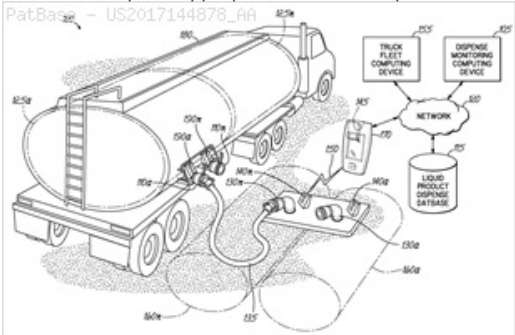
12:

Title: LIQUID PRODUCT IDENTIFICATION FOR DISPENSING IN STORAGE TANKS

Abstract: A system for confirming that a liquid product is to be dispensed into a storage tank from a tanker compartment before dispensing the liquid product is disclosed. A wand computing device generates a liquid product identification signal that identifies the liquid product contained in the storage tank when positioned within proximity of a storage tank tag associated with the storage tank. A dispense monitoring computing device attempts to match the liquid product identified by the liquid product identification signal to the liquid products identified as contained in tanker compartments. The dispense monitoring computing device generates a signal to notify the operator that an appropriate tanker compartment contains liquid product that is the same as the liquid product contained by the storage tank and can be dispensed into the storage tank when the liquid product contained by the storage tank matches the liquid product contained by the appropriate tanker compartment.

Classifications:

International (IPC 8-9): B67D7/04 B67D7/32 B67D7/34
B67D7/84 (Advanced/Invention)
CPC: B67D7/348 B67D7/04



Family:

Publication number	Publication date	Application number	Application date
US2017144878 AA	20170525	US20150950585	20151124
US9969604 BB	20180515	US20150950585	20151124

Priority:

US20150950585 20151124

Probable Assignee: DIXON VALVE AND COUPLING CO
Assignee(s): (std): DIXON VALVE AND COUPLING CO
Inventor(s): (std): DEXTER GARTH L ; DEYOUNG BRIAN ; KOENINGER ROBERT C
Agent(s): WOOD HERRON AND EVANS LLP

Title: Fleet refueling method and system

Abstract: A system and method for facilitating delivery of fuel to a customer site with a delivery truck. A hand-held device captures an identifier specific to the given customer. A zero flow of fuel being transferred from the delivery truck to a customer storage tank is sensed, and the fuel delivery is tagged for billing to the customer based upon when the zero flow is sensed in relation to when the identifier is captured. The hand-held device is used to log the identifier and an identification time at which the identifier is captured. A computer is provided on-board the delivery truck, and logs zero flow indications and the respective zero flow times. The system determines which ones of the zero flow times are after the identification time but before a next occurring identification time at which the hand-held device captures a next identifier.

Classifications:

International (IPC 8-9): B67D5/14 B67D5/22

B67D7/14 (Advanced/Invention);

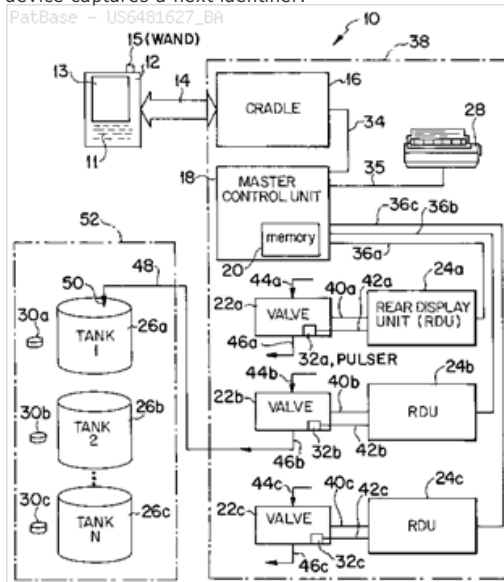
B67D7/08 (Core/Invention)

International (IPC 1-7): B67D5/14 B67D5/22 G06K7/10

CPC: B67D7/145 G06Q50/06

European: B67D7/14B G06Q50/06

US: 235/470 235/472.01 705/413



Family:

Publication number	Publication date	Application number	Application date
AU200032357 A1	20000914	AU20000032357	20000218
AU200032357 A5	20000914	AU20000032357	20000218
CA2364236 AA	20010821	CA20002364236	20000218
MXPA01008556 A1	20030606	MX2001PA08556	20000218
US6481627 BA	20021119	US19990255656	19990223
WO0050335 A1	20000831	WO2000US04153	20000218

Priority:

US19990255656 19990223 WO2000US04153 20000218

Probable Assignee: ELECTRONIC WARFARE ASSOCIATES INC

Assignee(s): (std): ELECTRONIC WARFARE ASSOCIATES ; GUERRERI STEPHEN J

Assignee(s): ELECTRONIC WARFARE ASSOCIATES INC

Inventor(s): (std): GUERRERI STEPHEN J

Inventor(s): STEPHEN J GUERRERI

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW