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(54) Title: A SYSTEM AND METHOD FOR THE CONTROLLED RECHARGE OF BATTERIES IN ELECTRIC POWERED VEHICLES

(57) Abstract: A system for the controlled recharge of batteries in electric powered vehicles and a method for controlled recharging of batteries in electric powered vehicles while implementing such system. A system in accordance to the invention, comprises a plurality of electric connection devices that are suitable for recharging a battery of an electric powered vehicle, that are constantly connected to the electricity supply network and are On/Off switchable for the purpose of recharging the above battery. In addition, the system includes a plurality of remote device controllers that are each connected to a separate electric connection device, in a way that enables the On/Off switching of the electric connection device using the designated remote device controller, while each of the remote device controllers has its own specific IP address number, in a way that enables remote control of the specific remote device controller with its designated IP address, and a control centre that enables the reception of information using cellular communications and the identification of the caller and operating, by remote control, a specific remote device controller that has its designated IP address, so that On/Off switching of the electric connection device can be carried out.



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A System and Method for the Controlled Recharge of Batteries in Electric Powered Vehicles

Field of invention

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The present invention is in the field of systems and methods for the controlled recharging of batteries in electric powered vehicles.

Background of the Invention

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Few know that electric vehicle batteries, actually preceded petrol and diesel vehicle engines. Only at the start of the last century was the idea of electric vehicle batteries put aside in favor of the strong and polluting internal combustion engines. Ever since, an enormous infrastructure for refueling the vehicles has been built (gas-stations, pipelines, containers and tankers for transporting the fuel to them).

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In recent times, the tendency to change over to "green" vehicles (environmentally friendly vehicles) has been becoming stronger. These types of vehicles have advanced technology that uses very little fuel, a sort of fuel that pollutes at a much lower degree than the fuel used in cars, or what can be called "renewable fuel".

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Some sorts of "green" vehicles or "renewable fuel" using vehicles are electrical vehicles that make use solely of the energy stored in a collection of batteries, and vehicles based on hybrid propulsion, having a fuel engine alongside an electric one, which is used at low output especially in urban areas.

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Battery powered engines are more efficient than internal combustion engines. Battery powered engines do not discharge emissions and create very little pollution if they are charged with renewable energy of some sort. Most vehicles accelerate better than fuel using vehicles. Battery powered cars are, as has been stated, "green" cars that reduce the fuel dependency, and thus reduce global warming by reducing the "greenhouse" effect. A battery powered car is quieter than a fuel powered car and does not discharge poisonous fumes.

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The electrically powered batteries can be categorized into two sorts – rechargeable batteries that need long charging periods and usually have relatively low efficiency rates, (e.g. lithium batteries), and "electric fuel" batteries which are not rechargeable after discharging (and need to be changed), (e.g. zinc batteries).

5 Constant technological refinements in the battery technology are slowly solving the problems concerning these vehicles: the high price, the short time interval between battery charging, the long charging periods (or in the case of "electric fuel" – the time elapsed while replacing the battery), and the life expectancy of the batteries. These problems were historically attributed to the limited ability to adopt the battery powered
10 vehicles.

The description of an on-going project can be found on the internet site at:
<http://www.projectbetterplace.com/>

The problem of the supporting infrastructure for rechargeable electric vehicles has not yet been solved. In other words, the lack of means and method that will be
15 available, convenient and relatively cheap, for "refueling" the electric vehicle's batteries every so often (recharging the batteries).

There are well known systems and methods for the controlled recharge of liquid fuel in internal combustion engines, there are designated means that are installed both on the fueling spout that leads the liquid fuel to the vehicle's fuel tank and in the vehicle
20 itself adjacent to the spout of the fuel tank, so that the vehicle can be identified as the systems "licensed customer" and thus allow the flow of fuel.

In addition there are other known electric and cellular infrastructures regularly allocated to disciplines other than and different from the discipline of systems and methods for controlled recharging of batteries in electric vehicles.

25 The electric infrastructure known to us, allows us nowadays to issue electricity from nearly anywhere (e.g. by physically connecting an appropriate plug to an electric socket at home).

Naturally, the interaction options between vehicles and an electric socket in the existing electric infrastructure are known to us. For instance, the connection of an

electric vacuum cleaner to a household electric socket near a parked vehicle, and the use of it, often by using an extension cable, for cleaning the inside of the vehicle.

5 The cellular infrastructure known to us, allows us nowadays the use of the cellular phone – a cordless mobile telephone (which is actually a two-way radio that is able to receive and transmit simultaneously), in large areas, for the sake of wide extent interactions and in a variety of options – telephone conversations, leaving messages in voice boxes and sending such messages, sending and receiving text messages (SMS), internet surfing (WAP), transference of pictures and multimedia (MMS).

10 Also in the cellular communication domain, there are known interactions between vehicles and cellular telephones that belong to the driver or someone on his behalf. For instance, the installation of the cellular device in the vehicle. Another example is the use that is often made of the cellular telephone to operate the system of a computerized car park, which attributes the cellular device from which the call was made to the system, to the vehicle that was parked in a parking space in an area that is supervised and controlled by the system. The system then allows the payment for the parking space on the account of the caller (who informs the system of his entering and leaving the parking space), (e.g. international patent applications publications no. WO 15 98/04080 ,WO 93/20539 ,WO 96/11453).

Summary of the Invention

The current invention is a system and a method that allow the controlled recharging of batteries in electrically powered vehicles using a remote and centralized control system that therefore allows good and accurate control, and provides commercial flexibility with all that's related to the business transactions of recharging batteries that are preformed with it.

The system and method in the current invention do not need any devices installed in the vehicle, in other words – the vehicles remain "inert" or "indifferent" to the system (except for the battery recharging aspect).

A system and method according to the current invention take advantage of the available electricity infrastructure and are based on regular cellular communication.

In one aspect, the present invention is a system for the controlled recharging of batteries in electrically powered vehicles. The system comprises a plurality of electric connection devices that are suitable for recharging the battery in an electrically powered vehicle, and are constantly connected to the electricity supply network and are On/Off switchable in order to recharge the battery. In addition the system includes a number of remote device controllers that are each connected with their own electric connection device, in a way that allows the On/Off switching of the electric connection device using the specific remote device controller, and each of the remote device controllers has its own specific IP address number, in a way that allows remote control of the specific remote device controller that has its specific IP number. Another characteristic of a system in accordance with the present invention, the subject matter of this patent application, is a control centre that enables the reception of contents from cellular systems and the recognition of the caller and operating the remote device controller that has its own specific IP number by remote control, for the sake of On/Off switching a specific electric connection device.

In another and different aspect of the present invention, the invention resides in the mode of operation of the above defined system. There is a general method for the controlled recharge of batteries in electric powered vehicles. The method comprises the stages of –

Placing electric connection devices that are suitable for the recharging of the battery in the electrically powered vehicle, and are constantly connected to the electricity supply network and are On/Off switchable for recharging the battery; and

Connecting each one of the electric connection devices to a designated remote device controller, in such a way that allows the On/Off switching of the electric connection devices using the designated remote device controller; and

Allocating distinct IP addresses to each of the remote device controllers, in a way that enables remote control of a specific remote device controller that has its designated IP address; and

Operating a control centre that enables the receiving of contents using cellular communication systems and the identifying of the caller and operating the specific remote device controller that has its designated IP address, as has been stated, by remote control; and

Connecting the battery of the electric powered vehicle to an electric connection device in a way that enables the recharging of the battery according to the On/Off switching of the electric connection device; and

Communicating via cellular communication in a way that enables the control system to identify both the caller and the remote device controller to which the electric connection device is connected; and

Switching of the electric connection device from the control system by remote control to a state of recharging the vehicle's battery; and

Switching the electric connection device from the control system by remote control to a non-recharging state of the vehicle's battery. This happening after a period of time that was determined in advance or in response to another cellular communication in a manner that enables the control system to identify both the caller and the remote device controller to which the electric connection device is connected.

Brief Description of the Accompanying Figures

The present invention will be described herein in conjunction with the accompanying Figures. Identical components, wherein some of them are presented in
5 the same Figure – or in case that a same component appears in several Figures, will carry an identical number.

Figure no. 1 is a schematic illustration of an example system according to the invention.

Figure no. 2 is a flow chart of the method that is implemented in the example
10 system that is illustrated in figure no. 1.

Detailed Description of a preferred embodiment of the present Invention

Reference is being made to **figure no. 1**. The figure is a schematic illustration of
5 example system 10 according to the invention.

System 10 is designated for the purpose of the controlled recharging of batteries in electric powered vehicles. Such a vehicle is illustrated in the figure for illustration purposes and is numbered 15, the vehicle's battery is numbered 17.

System 10 comprises a number of electric connection devices 20 (for
10 convenience additional electric connection devices have been illustrated using dashed lines). Each of the electric connection devices 20, is suitable for the recharging of battery 17 of vehicle 15. The electric connection devices 20 are constantly connected to the electricity supply network 22. The electric connection devices can be On/Off switched in order to recharge the battery 17.

15 Any professional would understand that the electric connection devices 20 may be based on the existing electricity supply infrastructure. For instance – it may be possible to offer a property owner who is already connected to the electricity supply network and is lucky enough to be situated near a long term parking area (a curb that it is legal to park next to, a parking lot, etc.) the possession of an electric connection
20 device, as has been mentioned. The electric connection device may include an electric cable, a suitable plug in order to connect to the battery, and On/ Off switching devices that enable the connecting and disconnecting of the phase by command (not illustrated).

System 10 also includes a number of remote device controllers 25 (for
convenience additional remote device controllers have been illustrated using dashed
25 lines). Each of the remote device controllers 25 has been connected to a designated electric connection device 20. Remote device controllers 25, have been connected, as has been stated, in a way that enables the On/Off switching of the electric connection device 20 using the designated remote device controller 25.

Each of the remote device controllers 25 is allocated with its own specific IP
30 address number (an illustration of the address has been given the number 27 in the figure). Any professional would understand that an IP address 27 enables recognition in

communication networks that use an IP connection protocol (e.g. the internet network). The address is a number field with a fixed length that is, in system 10, a remote device controller 25 address. Each remote device controller 25 in the network has a designated unique IP address, so information can be sent to it or received from it. IP addresses
5 divide the network in a hierarchal way, and thus are also called "logic addresses". In this manner remote control of a specific remote device controller 25 with a designated specific IP address 27 may be operated in system 10.

In the illustrated example of the system according to the invention, system 10 includes device 30 that visually shows a specific number (an illustration of the number
10 has been numbered 32 in the illustration). A visual display of number 32 next to the electric connection device 20 (in the example illustration – on display plate number 34 that is fixed to the electric connection device), enables the transferring of the displayed number using cellular communications (whether it is passed as a telephone number that can be dialed or as information that is typed during communication such as a
15 conversation).

In the illustrated example a vehicle 15 driver, who is illustrated as image 36, connected battery 17 of the vehicle to electric connection device 20, and using his cellular telephone 38, he dials the number 32 that has been displayed to him on display plate 34.

20 The number 32 is attributed to a specific logic address – the IP number 27. Therefore, any professional would understand that cellular communication that includes the information number 32, enables the attribution of the cellular telephone 38 used to pass the information number 32 to a specific remote device controller 25 and to the specific electric connection device 20. The cellular communication may be preformed
25 by using known protocols (e.g. TCP/IP), as surfing an assigned internet site from a cellular appliance (WAP), as sending an SMS, as communicating on RF-ID, etc.

Any professional would understand that in other configurations of a system in accordance with the invention, device 30 for the display of a specific number 32, may also display a generic access number (like the toll free * 800 numbers, etc.), so that only
30 after the generic number has been dialed will the cellular telephone owner 38 be requested to continue and type in number 32 as deliverable information over the media.

In another different configuration of a system according to the invention, the system may include a receiving - transmitting apparatus (that is not illustrated). A receiving - transmitting apparatus that is locatable in the vicinity of electric connection device 20, and is suitable for providing a cellular communication (as has been stated, in
5 a way that enables the control system to identify both the caller and the remote device controller 25 to which the electric connection device is connected 20). Such a receiving - transmitting apparatus may be operated by sending communication in IR mode or a Wire-less Personal Area Network – WPAN, such as Bluetooth, from cellular telephone 38.

10 System 10 may also include (optional) a network Cluster 40 that includes a number of remote device controllers 25 in one network cluster. Any professional would understand that Cluster 40 can be identified from the time the cellular communication was made from it. Likewise, any professional would understand that network Cluster 40 may be based on local area network (LAN) technology.

15 Remote device controllers 25 may also include (optional), a build-in controller (not-shown), that enable the performing of a pre-charging test (e.g. – through application of a rather low voltage), in order to detect potential shortcuts in the system upon the driver (in the illustrated example), connecting battery 17 of the vehicle to electric connection device 20 and just before enabling the system to transfer the current
20 for recharging the vehicle battery. Any professional will appreciate the implantation of such pre-test in a system in accordance with the present invention as a safety measure that allow the system to be operated just and only after verifying the proper condition of the system (no shortcuts).

System 10 also includes control centre 45. Control centre 45 enables the
25 receiving of messages from cellular systems such as the cellular telephone 38 (often via a cellular switch 47 and from there via the Public Switched Telephone Network (the PSTN) 49).

The control centre 45 has a number of installed abilities, the main ones being – the ability to identify the caller (CID) and carrying out remote control operation of a
30 specific remote device controller 25 that has, as has been stated, a designated specific IP address 27, for the On/Off switching of a specific electric connection device 20.

Any professional would understand that in a control centre 45 there may be embedded DNIS technologies – Short for Dialed Number Identification Service, a telephone service that identifies for the receiver what telephone number was dialed by the caller. A common use for this type of system is * 800 and * 900 phone numbers that
5 often channel multiple phone numbers into the same PBX system. Once the call enters the PBX system, the DNIS will identify which number was dialed and record that information.

In system 10 these abilities will allow control centre 45 economical central reception in the aspect of communication lines of cellular communications that may,
10 with time, come from a relatively large number of potential users.

Control centre 45 may be installed with IVR technologies – Short for Interactive Voice Response, a telephony technology in which someone uses a touch-tone telephone to interact with a database to acquire information from or enter data into the database. IVR technology does not require human interaction over the telephone as the user's
15 interaction with the database is predetermined by what the IVR system will allow the user access to. For example, banks and credit card companies use IVR systems so that their customers can receive up-to-date account information instantly and easily without having to speak directly to a person. IVR technology is also used to gather information, as in the case of telephone surveys in which the user is prompted to answer questions by
20 pushing the numbers on a touch-tone telephone.

In system 10 IVR technologies may enable control centre 45 to interact with potential users without the need for the users to interact with another person.

Control centre 45 may include insertion and retrieval of data technologies to and from Data Base – Often abbreviated DB. A collection of information organized in such
25 a way that a computer program can quickly select desired pieces of data. Traditional databases are organized by fields, records, and files. A field is a single piece of information; a record is one complete set of fields; and a file is a collection of records. For example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number. To access
30 information from a database, a database management system (DBMS) is utilized. This is a collection of programs that enables to enter, organize, and select data in a database.

In system 10 the Data Base will include, among others, the potential user's data (the registered cellular telephone holders) and the different remote device controller's data with their different IP numbers.

Control centre 45 will also include billing abilities that will enable the financial charging of the registered owner of cellular phone 38, for example, according to the duration of battery 17 charging time.

Control system will also include current consumption calculation, analysis and reporting, based on an electronic meter (not shown) to be added unto remote device controllers 25 and provide the required data (e.g. – performing a short sampling at the beginning and at the end of the recharging cycle).

Considering the structure of system 10 as has been described above, any professional would understand that operating system 10 requires several initial stages –

The placing of electric connection devices 20 that are suitable for the recharging of battery 17 of electrically powered vehicle 15, and that are constantly connected to the electricity supply network 22 and are On/Off switchable in order to recharge battery 17.

Another preliminary stage is the connection of each of the electric connection devices 20 with a designated remote device controller 25, in a way that enables On/Off switching of the electric connection devices 20 with the designated remote device controller 25.

Another initial stage is the allocating of each of the remote device controllers 25 to its own IP address 27, in a way that enables the remote control operation of the specific remote device controller 25 that has its designated specific IP address 27.

Finally, before activating system 10 the activation of control centre 45 that enables the reception of data from cellular communication systems (such as the cellular telephone 38), the recognition of the caller 36, and performing the operation, as has been stated, by remote control of the specific remote device controller 25 that has been designated a specific IP address, is required.

In order to operate system 10 as has been described only as an example and with reference to the accompanying figures, there is yet another essential initial stage in addition to those that have been described above, which is the visual displaying of

specific number 32 for dialing by cellular communication near the electric connection device 20, that is designated to an IP address 27.

Alternatively, in a different configuration of a system according to the invention, an initial stage is required. A stage in which a receiving- transmitting apparatus (that is not illustrated) is placed in the vicinity of the electric connection device 20, and is able to perform the cellular communication in a such a way that control centre 45 is able to identify both the calling cellular telephone 38 that initiated the receiving- transmitting apparatus into a transmitting mode and the remote device controller 25 that is connected to the electric connection device.

In addition, in order to operate system 10 that has been described above only as an example and with reference to the accompanying figures, the grouping stage of a number of remote device controllers 25 to form a communication Cluster 40 that is recognizable by control centre 45 from the time the cellular communication is made to it and includes information about the remote device controller 25 that is connected to the electric connection device 20 and are part of the same communication cluster, was done in advance.

Reference is being made to **figure no. 2**. Figure no. 2 is a flow chart of a method implemented while system 10 is operated, for the controlled recharge of a battery 17.

In stage 212 a physical connection is made between battery 17 of electric powered vehicle 15 and an electric connection device 20, in a way that enables the recharging of the battery according to the On/Off switching of electric connection device 20.

In stage 214 cellular communication is made by user 36 in a way that enables control centre 45 to identify both the caller (as the registered owner of the cellular telephone 38) and the remote device controller 25 that is connected to electric connection device 20.

During the operation of system 10 that has been described above solely as an example and with reference to the accompanying figures, stage 214 of said cellular communication is preformed by dialing the specific number 32 using cellular telephone 38. However, any professional will understand that this stage may include a precursory stage of dialing a generic access number enabling communication to control centre 45.

Alternatively, the operation of a system that is still according to the invention but is based also on the installation of a receiving- transmitting apparatus in the vicinity of the electric connection device 20, this stage of the cellular communication may be initiated by sending communication in IR mode or a Wire-less Personal Area Network – WPAN, such as Bluetooth, from cellular telephone 38 to the receiving- transmitting apparatus.

In stage 216 in the control centre 45 the decision, whether it is a known customer or an unknown customer, is made (if it is an unknown customer, it is possible to move on to stage 218 in which a signing on procedure is started, by putting a service person on the line, for example).

In stage 220 electric connection device 20 is On/Off switched by remote control from control centre 45 to a recharging state of battery 17.

In stage 222 the electric connection device 20 is On/Off switched by remote control from the control centre 45, to a non-recharging state of battery 17. Any professional would understand that stage 222 may occur after a fixed period of time (as part of the information passed during the communication preformed in stage 214) or as a response to another cellular communication act on behalf of the consumer, in a way that enables the control centre 45 to identify both the calling cellular telephone number 38 and the remote device controller 25 that is connected to electric connection device 20.

In light of the above description and with reference to the accompanying figures, any professional would appreciate the fact that system 10 enables the controlled recharging of battery 17 of electric powered vehicle 15, using a central remote control system – control centre 45, which therefore enables, good and precise control, and gives commercial flexibility to battery charging transactions that are performed with it.

The system is activated by central control and via remotely operated On/Off switching, after positive confirmation, with no mistake, that a certain and specific telephone holder has been exposed to a site at which a specific electric connection device is located (and there is no need to go on about the option of adding abilities to the system that can certify the location during communication, and that would be based, for instance, on the cellular cell from which the call to the control centre is being made, GPS capabilities etc.).

The system also enables, for example, regional discounts, live reference to vacant electric connection devices (for instance, by calling their cellular telephone, and relying on their position or the time that has elapsed since their last recharge using the same telephone line).

5 Another example for the commercial flexibility the system grants, is the possibility to create a network cluster, a number of electric connection sites in a certain geographical area, or a number of potential electric connection device providers, and to allow them credit or other business transactions in exchange for the use of electricity on there account.

10 System 10 does not need the installation of any sort of devices in the vehicles like vehicle 15, in other words, the vehicles remain "inert" or "indifferent" to the system (apart from the aspect of recharging the battery).

 The system is almost personal. The person using system 10 is recognized by his cellular telephone, which is a type of personal device that is close to the person using it,
15 rather than having identification based on a device installed in a vehicle.

 System 10 uses the already existing electricity supply network 22 and is based on regular cellular communication. On behalf of the system's initiators and founders, the system does not need large sums invested in it, the building and spreading of complex infrastructure or the communication with franchisers and authorized persons (for
20 instance, persuading a household owner to put an electric connection device on his fence and near the sidewalk, and see above the systems ability to accurately compensate or credit him for the electricity consumed from his house). On the users behalf, the driver of an electric powered vehicle, the system enables the recharging of the battery while conducting only one mechanical connection (the connection of the electric
25 connection device to the battery), and a cellular telephone call.

 Any professional would understand that the present invention was described above solely in a way of presenting examples, serving our descriptive needs and those changes or variants in the structure of the system for the controlled recharge of batteries in electric powered vehicle and its method of construction and operation – the subject
30 matter of the present invention, would not exclude them from the framework of the invention.

In other words, it is feasible to implement the invention as it was described above while referring to the accompanying figures, also with introducing changes and additions that would not depart from the constructional and operational stages, characteristics of the invention, characteristics that are claimed herein under.

Claims

1. A system for the controlled recharge of batteries in electric powered vehicles that comprises:

5 a plurality of electric connection devices that are suitable for recharging a battery of an electric powered vehicle, that are constantly connected to the electricity supply network and are On/Off switchable for the purpose of recharging the above battery;

10 a plurality of remote device controllers that are each connected to a separate electric connection device, in a way that enables the On/Off switching of said electric connection device using said designated remote device controller, while each of said remote device controllers has its own specific IP address number, in a way that enables remote control of said specific remote device controller with its designated IP address, and

15 a control centre that enables the reception of information using cellular communications and the identification of the caller and operating, as said, by remote control, a specific remote device controller that has, as said, its designated IP address, so that On/Off switching of said electric connection device can be carried out.

- 20 2. The system for controlled recharge of batteries in electric powered vehicles, according to Claim 1 further comprising:

25 a device for visually displaying a specific number for dialing by cellular communication, that is placed in the vicinity of said electric connection device that is designated to said IP address, and the dialing of said number using a cellular telephone enables the passing of information, as said, to said control system.

3. The system for controlled recharge of batteries in electric powered vehicles, according to Claim 2, wherein said device for the display of a specific number, also displays a generic access number to said control centre.

4. The system for controlled recharge of batteries in electric powered vehicles, according to Claim 2 further comprising:

a receiving-transmitting apparatus placed in the vicinity of said electric connection device, and is suitable for performing said cellular communication in a way that enables said control centre to identify both the caller and the remote device controller that is connected to said electric connection device, wherein

said device is operatable by sending communication in IR mode or by Wire-less Personal Area Network – WPAN, such as Bluetooth, from a cellular telephone.

5. The system for controlled recharge of batteries in electric powered vehicles, according to Claim 1, while also comprising:

a network Cluster that can be identified by said control centre from the time of said cellular connection, and includes a plurality of said remote device controllers.

6. A method for controlled recharging of batteries in electric powered vehicles, that comprises the stages of:

placing electric connection devices that are suitable for recharging a battery of an electric powered vehicle, and are constantly connected to the electricity supply network and are On/Off switchable for recharging of said battery, and

connecting each one of said electric connection devices to a designated remote device controller, in such a way that allows the On/Off switching of said electric connection devices using the designated remote device controller;

allocating distinct IP addresses to each of the said remote device controllers, in a way that enables remote control of a specific remote device controller that has its designated IP address;

operating a control centre that enables the receiving of contents using cellular communication systems and the identifying of the caller and operating

the specific remote device controller that has its designated IP address; as said, by remote control;

5 connecting the battery of the electric powered vehicle to an electric connection device in a way that enables the recharging of the battery according to the On/Off switching of the electric connection device;

communicating via cellular communication in a way that enables the control system to identify both the caller and the remote device controller to which the electric connection device is connected;

10 switching of said electric connection device by remote control from the control system to a state of recharging the vehicle's battery; and

switching said electric device using remote control from said control system to a non-recharging state of the vehicle's battery after a period of time that was determined in advance or in response to another cellular communication in a way that enables said control system to identify both the caller and the remote device controller to which said electric connection device is connected.

7. The method for controlled recharge of batteries of electric powered vehicles, according to Claim 6, further comprising:

20 displaying a specific number for dialing by cellular communication in that is in the vicinity of said electric connection device, that is designated to said IP address, and wherein

said stage of communicating via cellular communication is preformed by dialing said specific number on a cellular telephone.

25 8. The method for controlled recharge of batteries of electric powered vehicles, according to Claim 7, wherein said stage of communicating via cellular communication also includes the precursor stage of dialing a generic access number to said control centre.

9. The method for controlled recharge of batteries of electric powered vehicles, according to Claim 6, further comprising the stages of

placing a receiving- transmitting apparatus near said electric connection device, that is able to perform said communicating via cellular communication in a way that enables said control centre to identify both the caller and the remote device controller to which said electric connection device is connected,
5 and wherein

said stage of communicating via cellular communication is initiated by sending communication in IR mode or Wire-less Personal Area Network – WPAN, such as Bluetooth, from a cellular telephone.

10. The method for controlled recharge of batteries of electric powered vehicles,
10 according to Claim 6, further comprising

grouping a number of said remote device controllers to a network Cluster that is identified by said control centre from the time said cellular communication is made.

11. The system for controlled recharge of batteries of electric powered vehicles,
15 according to any of Claims 1-5, as has been described above as an example only with reference to the accompanying figures.

12. The method for controlled recharge of batteries of electric powered vehicles, according to any of Claims 6-10, as has been described above as an example only with reference to the accompanying figures.

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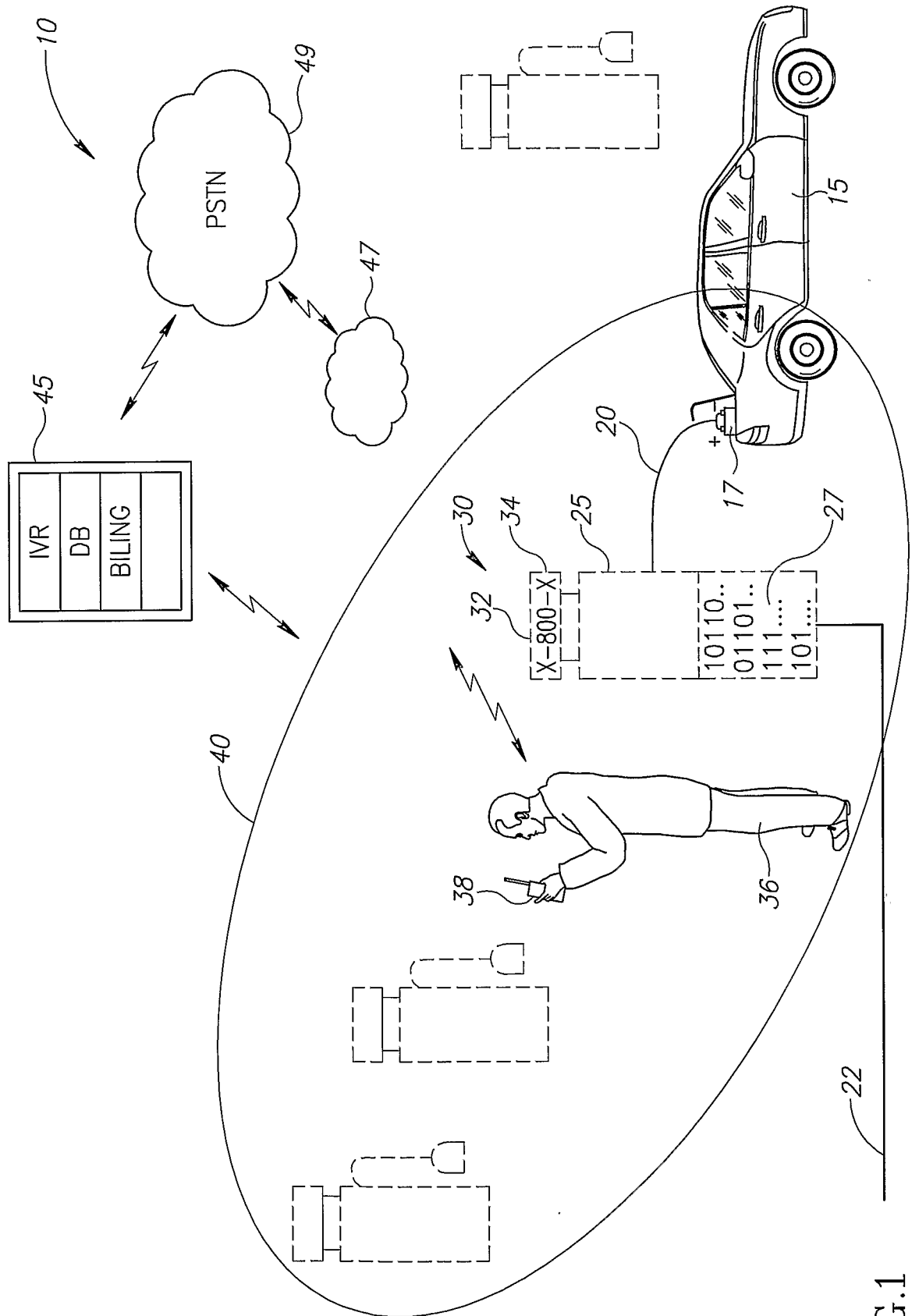


FIG.1

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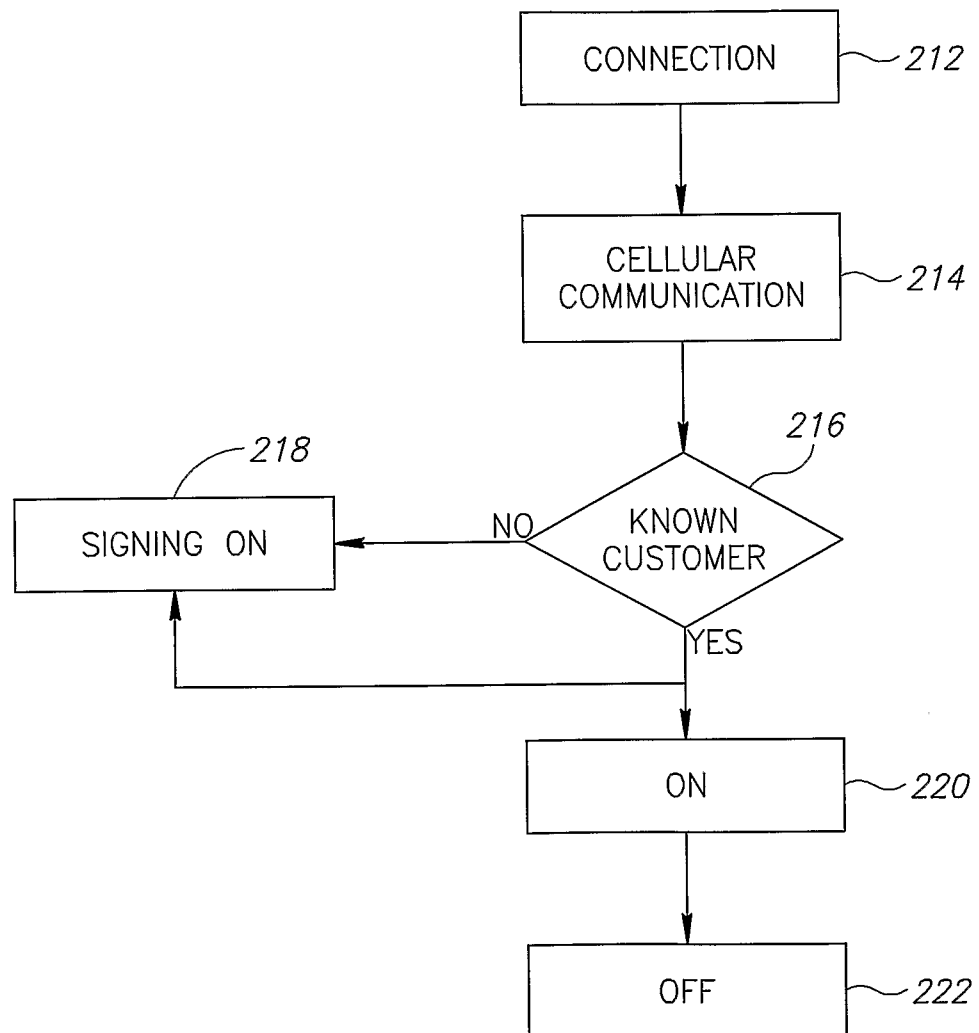


FIG.2