

PATENT
5707-25900

Adjusting Delivery of Current in a Connection Based on Temperature

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Attorney Docket No.: 5707-25900

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Field of the Invention

[0001] The present invention relates to the field of connections, and more particularly to a method for adjusting delivery of current in a connection based on temperature.

Description of the Related Art

[0002] In recent years, there has been a proliferation of portable devices that connect to host devices for receiving power (e.g., for charging a battery), data (e.g., synching files from the host device), etc. Typically, the portable device and host device are connected via a physical connection (e.g., a wire or cable).

[0003] Many device manufacturers have increased the amount of current and/or power delivered to these portable devices for various reasons, e.g., to provide a faster battery recharge for the portable device. However, the increase in current causes an increase in temperature in the connections and may result in catastrophic failure (e.g., in the connection, in the portable device, and/or in the host device). Current specifications may specify a maximum volt-ampere (VA), such as “25VA per connector”. Unfortunately, this limit neglects the fact that heating is caused by I^2R effects. Additionally, since most connections are manufactured by many different manufacturers, there is presently no guarantee that a particular cable and connector combination can transfer power without overheating. Accordingly, improvements in connections are desired.

Summary of the Invention

[0004] Various embodiments are presented of a system and method for adjusting delivery of current based on temperature.

[0005] A first device and a second device may be coupled together over a connection (e.g., a cable or wire). The first device may provide current (e.g., power) to the second device over the connection. Each device may include a port for receiving a corresponding connector of the connection. For example, a first connector of the connection may be coupled to the port of the first device while a second connector of the connection may be coupled to the port of the second device.

[0006] A change in temperature of the connection may be measured while the current is provided from the first device to the second device. The change in temperature may be measured in a variety of manners. For example, the change in temperature may be measured by determining an ambient temperature and determining a temperature of one of the connectors of the connection. The change may be the difference between the ambient temperature and the temperature of the first connector of the connection. In another embodiment, an initial temperature (e.g., before power and/or current is provided over the connection) of a connector may be determined and compared with a current temperature. In this embodiment, the change in temperature may therefore be the difference between the initial temperature and the current temperature. The change in temperature may involve the measurement of a temperature of an electrical assembly (e.g., a port) connected to one of the connectors of the connection. The temperature of the connector (or connection in general) may be determined by measuring the temperature near a power pin and/or data pin of one of the connectors of the connection. In various embodiments, the temperature may be measured by an integrated circuit (or other circuitry) of one or both of the two devices.

[0007] If the change in temperature is above a threshold, the current being provided from the first device to the second device may be adjusted. For example, the current being provided between the two devices may be reduced, e.g., in order to prevent overheating (and resulting failure) of the connection. According to various embodiments, the

adjustment may be performed by either of the two devices. For example, the first device may measure the temperature change and adjust the current. Alternatively, the first device may measure the temperature change and adjust the current. In further embodiments, one of the devices may measure the change and the other of the devices may perform the adjustment (e.g., in response to a communication from the measuring device to change the temperature or providing the change in temperature).

[0008] The measurement and possible adjustment may be performed a plurality of times while current is provided over the connection. Additionally, rather than determining the change and temperature (and whether that change is above a threshold), the method may simply determine if the current threshold is above a temperature threshold. Similarly, the acceleration of the temperature (the second derivative) may be measured and compared to an acceleration threshold.

Brief Description of the Drawings

[0009] A better understanding of the present invention can be obtained when the following detailed description of the preferred embodiment is considered in conjunction with the following drawings, in which:

[0010] Figures 1A and 1B illustrate exemplary systems suitable for implementing various embodiments of the invention;

[0011] Figure 2A is a block diagram of an exemplary connection, according to one embodiment;

[0012] Figure 2B is a block diagram of a connector, according to one embodiment; and

[0013] Figure 3 is a block diagram of a device, according to one embodiment; and

[0014] Figure 4 is a flowchart diagram illustrating one embodiment of a method for adjusting provided current based on temperature.

[0015] While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof are shown by way of example in the drawings and are herein described in detail. It should be understood, however, that the drawings and detailed description thereto are not intended to limit the invention to the particular form disclosed, but on the contrary, the intention is to cover all modifications, equivalents and alternatives falling within the spirit and scope of the present invention as defined by the appended claims.

Detailed Description of the Invention

Terms

[0016] The following is a glossary of terms used in the present application:

[0017] **Memory Medium** – Any of various types of memory devices or storage devices. The term “memory medium” is intended to include an installation medium, e.g., a CD-ROM, floppy disks 104, or tape device; a computer system memory or random access memory such as DRAM, DDR RAM, SRAM, EDO RAM, Rambus RAM, etc.; or a non-volatile memory such as a magnetic media, e.g., a hard drive, or optical storage. The memory medium may comprise other types of memory as well, or combinations thereof. In addition, the memory medium may be located in a first computer in which the programs are executed, or may be located in a second different computer which connects to the first computer over a network, such as the Internet. In the latter instance, the second computer may provide program instructions to the first computer for execution. The term “memory medium” may include two or more memory mediums which may reside in different locations, e.g., in different computers that are connected over a network.

[0018] **Carrier Medium** – a memory medium as described above, as well as a physical transmission medium, such as a bus, network and/or other physical transmission medium, that conveys signals such as electrical, electromagnetic, or digital signals.

[0019] **Software Program** – the term “software program” is intended to have the full breadth of its ordinary meaning, and includes any type of program instructions, code, script and/or data, or combinations thereof, that may be stored in a memory medium and executed by a processor. Exemplary software programs include programs written in text-based programming languages, such as C, C++, Pascal, Fortran, Cobol, Java, assembly language, etc.; graphical programs (programs written in graphical programming languages); assembly language programs; programs that have been compiled to machine language; scripts; and other types of executable software. A software program may comprise two or more software programs that interoperate in some manner.

[0020] Computer System – any of various types of computing or processing systems, including a personal computer system (PC), mainframe computer system, workstation, network appliance, Internet appliance, personal digital assistant (PDA), television system, grid computing system, or other device or combinations of devices. In general, the term "computer system" can be broadly defined to encompass any device (or combination of devices) having at least one processor that executes instructions from a memory medium.

[0021] Portable Device – any of various types of portable computing devices, including cell or mobile phones (including smart phones), PDAs, digital cameras, portable media players, netbooks, etc. In general, the term "portable device" can be defined to encompass devices (or combinations thereof) which include at least one processor that executes instructions from a memory medium and is easily carried (e.g., handheld) by a user.

Figures 1A and 1B – Exemplary Systems

[0022] Figures 1A and 1B illustrate embodiments of an exemplary system configured to modify current (or power) delivered to between a first device 100 and a second device 150 (e.g., a host, such as a computer system), as described below. As shown in Figure 1A, the first device 100A (e.g., a cell phone, such as a smart phone) may be coupled to the second device 150. In Figure 1B, the first device 100B (e.g., an MP3 player) may be coupled to the second device 150 via a hub 125.

[0023] In various embodiments, the first device 100 may be connected to the second device 150 or the hub 125 via a connection 200 (which is generally referred to as a "cable" or "wire"). Similarly, the hub 125 may be coupled to the second device 150 via a connection 200. The connection 200 includes a physical medium for conveying signals (e.g., one or more wires or fiber optics) and/or power between devices, as well as a connector at each end for connecting the physical medium to the devices. For example, the connection 200 may include two male connectors which plug in to a female connector (e.g., a port or jack) at each of the devices. In some devices, the connection 200 may be

fixed to one of the devices (e.g., such as the mouse or keyboard of Figures 1A and 1B, where the connection is a part of the device itself). However, even in devices with a fixed connection, the connection 200 may still be coupled to the device via a fixed connector. In the discussions below, the connection 200 is assumed to be removable (where the connection can be separated from both of the devices being connected), but fixed connections are also envisioned.

[0024] The devices and connections may be any of various types. For example, the first device 100 and second device 150 may be USB compatible and the connection 200 may be a USB connection. Alternatively, the connection 200 may be a fiber optic connection, a Firewire connection, a DVI connection, an HDMI connection, a VGA connection, an XLR connection, etc. Thus, while the connection 200 is shown only between the first device 100 and the second device 150 (or between the first device 100 and the hub 125 or the hub 125 and the second device 150), the connection 200 may be between any of the devices shown in Figures 1A and 1B, among other possible devices. As described herein, the connection 200 may generally be configured to support the provision of power from one device to another (e.g., for charging a battery of the first device 100). The connection 200 may also generally be configured to support the provision of data from one device to another (e.g., for transferring data between the first device 100 and the second device 150).

[0025] The first device 100 may be any of numerous devices (e.g., portable devices). For example, the first device 100 may be a cell phone (e.g., cell phone 100A illustrated in Figure 1A), a personal music player (e.g., player 100B illustrated in Figure 1B, e.g., an mp3 player, and/or an IPOD™, among other players, a CD player, etc.), a personal video player (e.g., a digital video player, a DVD player, etc.), a peripheral device (e.g., a printer), an input device (e.g., a game controller, touchpad, mouse, and/or keyboard, among others), or any other device that receives power (e.g., and data) from another device or power source. Thus, the first device 100 may be any of a variety of appropriate devices.

[0026] Additionally, the second device 150 may be any of various devices. More specifically, the second device 150 may be a computer system, a hub, e.g., an external hub or one included in an electronic system (e.g., the computer system or display device, among others), and/or other types of devices, such as ones that provide power to the first device 100. In one embodiment, the second device 150 device may be a USB on-the-go (OTG) device which may be operable to act as a host and a device, e.g., depending on the situation. Thus, according to various embodiments the second device 150 may be any of various appropriate devices.

[0027] The second device 150 of Figures 1A and 1B may include/couple to a display device configured to display video signals received from the second device 150 and/or to act as a hub. In some embodiments, the display device may act as the hub 125 as well as displaying video signals from the second device 150. Thus, the hub 125 may be incorporated in the display device of the second device 150. Additionally, the second device 150 may include a keyboard and mouse, e.g., which may be USB devices. The keyboard and mouse may couple to the second device 150 in a variety of ways, e.g., directly to the second device 150 or via the USB hub included in the display device, among other methods. Thus, in Figures 1A and 1B, the keyboard and mouse are shown coupled to the display, which may act as a hub. Alternatively, the keyboard and mouse may be coupled to the second device 150, e.g., a hub included in the second device 150.

[0028] Additionally, the devices 100 and/or 150 may include at least one memory medium on which one or more computer programs or software components may be stored. For example, the memory medium may store operating system software, as well as other software for operation of the devices. Various embodiments further include receiving or storing instructions and/or data implemented in accordance with the foregoing description upon a carrier medium. Generally, one or both of the devices 100 and 150 may include logic (e.g., circuitry and/or processor(s) and memory medium(s)) for implementing the methods described herein.

[0029] Note that the above descriptions of the first device 100, the second device 150 (and associated components), and the hub 125 are exemplary only and other components

and systems are envisioned. For example, while the various devices are shown as coupling via wires, the devices may be coupled wirelessly, e.g., via wireless USB, Bluetooth, WLAN, etc.

Figures 2A and 2B – Exemplary Block Diagrams of a Connection

[0030] Figures 2A and 2B are block diagrams illustrating an embodiment of the connection 200 coupling the first device 100 and the second device 150.

[0031] As shown in Figure 2A, the connection 200 may include physical medium 206 connected to connector 204 and connector 208. Each of the connectors 204 and 208 may be connected to electrical assemblies 202 and 210, respectively. In one embodiment, the electrical assemblies 202 and 210 may be ports (or connectors) of the first device 100 and the second device 150. Thus, in Figure 2, the connection 200 may be connected to both the first device 100 and the second device 150 via the corresponding connectors of the connection and the electrical assembly of the respective device.

[0032] Figure 2B illustrates a more detailed block diagram of a connector 204 connected to the electrical assembly 202. As shown, the connector 204 may include a cable power pin 250, cable data pin 256, cable data pin 260, and cable power pin 264. The electrical assembly 202 may similarly include power pin 250 (for connecting to cable power pin 252), data pin 254 (for connecting to cable data pin 256), data pin 258 (for connecting to cable data pin 260), and power pin 262 (for connecting to cable power pin 264). Power may be provided from the device including the electrical assembly 202 via power pin 250 to cable power pin 252 for provision of power through the connection 200, and may be received by the device including the electrical assembly 202 via power pin 262 from cable power pin 264 for reception of power through the connection 200.

[0033] The labels T1-T9 are exemplary locations for temperature measurement and are discussed in more detail with respect to the method shown in Figure 4. Thus, Figures 2A and 2B provide exemplary block diagrams of the connection 200 connecting the first device 100 and the second device 150.

Figure 3 – Exemplary Device Block Diagram

[0034] Figure 3 is a block diagram of an exemplary device (e.g., the first device 100 or the second device 150). As shown in Figure 3, the device may include an electrical assembly 310 (such as a port) for connecting to connection 200. Additionally, the device may include device logic 350 that may be configured to perform the functionality of the device. For example, the device logic may include a system on a chip (SOC), processor and memory, programmable hardware, and/or other logic to perform whatever functions the device is configured to perform. For example, device logic 350 for a cell phone, such as device 100A may be configured to perform telephone calls on a wireless network, execute applications, provide data communication, etc. As another example, device logic 350 for a computer system (e.g., such as device 150) may comprise a processor and memory for executing an operating system and applications for the operating system.

[0035] As also shown, the device may include power logic 330. The power logic 330 may include any circuitry or processor(s) necessary to provide or receive power over the connection 200. The power logic 330 may also be configured to monitor and/or change the power levels (e.g., the current) provided over the connection 200. In further embodiments, the power logic 330 may be configured to request a change in current to another device, e.g., over the connection 200. The temperature logic 320 may include any circuitry or processor(s) to measure the temperature of the electrical assembly 310, a connector of the connection 200 connected to the electrical assembly 310, ambient temperature, e.g., outside of the device, etc.

[0036] The device may include temperature logic 320, which may be configured to compare the measured temperature (or change in temperature) with a threshold temperature (or change in temperature) and initiate a change in current provided over the connection 200 when the threshold is exceeded. For example, the temperature logic 320 may indicate the threshold has been exceeded to power logic 330, which may in turn cause a reduction in current received or provided over the connection 200.

[0037] In some embodiments, the temperature logic may include a temperature sensor used to measure the temperature at the various places shown in Figures 2A and 2B,

among other locations. The temperature logic may include a “remote sensor” (e.g., a thermistor, thermocouple, RTD, etc.) which is capable of signal conditioning and reporting (e.g., such as an integrated circuit, or a circuit comprised within an integrated circuitry that is physically embedded in the connector).

[0038] The temperature logic 320, power logic 330, and device logic 350 may be configured in other manners than shown. For example, one or more of the logic may be included on a common integrated circuit (e.g., all of the device logic 350, power logic 330, and temperature logic 320 may be included on a common SOC). Alternatively, or additionally, the power logic 330 and/or temperature logic 320 may only include the circuitry for providing power and measuring temperature, and the device logic 350 may perform the monitoring and control functionality described herein (such as comparing the reported temperature to a threshold, modifying current provision, communicating with the other device, etc.). In further embodiments, the temperature logic 320 and/or power logic 330 may be incorporated within the electrical assembly 310, as desired.

Figure 4 – Adjusting Current Provision Based on Temperature

[0039] Figure 4 illustrates a method for adjusting provision of current on a connection based on temperature. The method shown in Figure 4 may be used in conjunction with any of the systems or devices shown in the above Figures, among other devices. In various embodiments, some of the method elements shown may be performed concurrently, in a different order than shown, or may be omitted. Additional method elements may also be performed as desired. As shown, this method may operate as follows.

[0040] In 402, a first device and a second device (e.g., the first device 100 and the second device 150) may be connected. For example, a user may physically attach the first and second devices using a connection (such as the connection 200). The second device may provide current (e.g., power) to the first device over the connection. Each device may include a port for receiving a corresponding connector of the connection. For example, a first connector of the connection may be coupled to a port of the first device while a

second connector of the connection may be coupled to a port of the second device. In one embodiment, a USB cable may be connected to a USB port of a first USB device on one side, and may be coupled to a port of a USB host on the other side. In this embodiment, the two USB devices may perform enumeration. However, other types of connections and devices are envisioned, and thus, embodiments described herein are not limited to USB devices and connections.

[0041] In 404, a change in temperature of the connection may be measured while the current is provided from the first device to the second device. The change in temperature may be measured in a variety of manners, e.g., using the temperature logic 320 described above. For example, the change in temperature may be measured by determining an ambient temperature and determining a temperature of one of the connectors of the connection. The change may be the difference between the ambient temperature and the temperature of the first connector of the connection. For example, one or more analog temperature sensors may be used to measure the temperature of the ambient environment and of the connector (or port). More specifically, the ambient temperature could be measured at points T3 for connector A and T4 for connector B in Figure 2A. The corresponding connector temperatures may be measured using a sensor that is local to the connector or electrical assembly (e.g., the port of the device). These sensor(s) may measure the temperature of the connector or electrical assembly at locations such as T1 or T2 for connector A and T5 or T6 for connector B. Accordingly, the change in temperature may be the difference between T3 and T1 or T2 (for connector A) or between T4 and T5 or T6 for connector B. For example, in one embodiment, the change in temperature for connector A may be T1-T3 and the change in temperature for connector B may be T6-T4. Note that the method may only be performed for one of the connectors (e.g., the connector connected to the device that is receiving the power or current); however, in further embodiments, the change in temperature may be measured at both sides, and the largest of the two changes may be used for 406 below.

[0042] Figure 2B illustrates a number of other points where temperature could be measured (T7-T9). These points could be used for T1, T2, T5, or T6 in the discussions

herein. As shown, T8 and T9 are points near the power pins of connector 204. The temperature sensors that measure these points may be included in or near electrical assembly 202 (e.g., the port of the device) so that points T8 and T9 could be measured when connector 204 is inside electrical assembly 202. For example, these points may be at or near the physical contacts between the electrical assembly 202 and the connector 204. In some embodiments, the general area of the connector (e.g., T7) may be sufficient for temperature measurement rather than at the power pins T8 or T9; however, any one or more of the points T1-T9 may be used to determine the temperature of the connection or connector, depending on the given application.

[0043] In another embodiment, an initial temperature of a connector may be determined and compared with a current temperature. In one embodiment, the initial temperature may be measured before current or power is provided over the connection. However, the initial temperature and current temperature could be a moving window that is measured over time (e.g., every 1 ms, 10 ms, 50 ms, 100 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 30 s, 1 m, etc.). In these embodiments, the change in temperature may therefore be the difference between the initial temperature and the current temperature. The change in temperature may involve the measurement of a temperature of an electrical assembly (e.g., a port) connected to one of the connectors of the connection. The temperature of the connector (or connection in general) may be determined by measuring the temperature near a power pin and/or data pin of one of the connectors of the connection. In various embodiments, the temperature may be measured by an integrated circuit (or other circuitry) of one or both of the two devices. Thus, the temperature may be measured at any one or more of the points T1-T9. Where more than one is measured, the greatest difference may be used for the connection, the difference may be determined between the average of the points, etc.

[0044] While embodiments described herein are primarily related to the first or second device performing the temperature measurement (e.g., and including the temperature measurement circuitry or devices), the measurement may alternatively (or additionally) be included in or performed by the connection itself. Thus, in one embodiment, the

connection may be configured to measure its temperature (or change in temperature) according to the methods described herein.

[0045] In 406, if the change in temperature is above a threshold, the current being provided from the first device to the second device may be adjusted. For example, the change in temperature threshold may be an increase in temperature of 30 degrees Celsius, although other embodiments are envisioned. In response to the change in temperature being above the threshold, the current being provided between the two devices may be reduced, e.g., in order to prevent overheating (and resulting failure) of the connection. According to various embodiments, the adjustment may be performed by either of the two devices (e.g., the power logic of the devices). For example, the first device may measure the temperature change and adjust the current. Alternatively, the first device may measure the temperature change and adjust the current. In further embodiments, one of the devices may measure the change and the other of the devices may perform the adjustment (e.g., in response to a communication from the measuring device to change the temperature or providing the change in temperature).

[0046] Alternatively, or additionally, if the change in temperature is above the threshold, the power provided over the connection may be changed (e.g., it may be reduced or the level of current and voltage may be changed) to reduce the temperature of the connection. In one embodiment, the first or second device may modify the power being provided automatically or may request that the other of the devices change the provision of power.

[0047] Additionally, rather than determining the change and temperature (and whether that change is above a threshold), the method may simply determine if the current threshold is above a temperature threshold. For example, there may be a threshold temperature at which the connector(s) of the connection, physical medium of the connection, electrical assembly of the device(s), or other components fail. Accordingly, the threshold temperature may be set at that level or a level substantially below the fail level (e.g., 5 or 10 degrees below the fail level, 1%, 2%, 5%, 10% below the fail level, etc.) Similarly, the acceleration of the temperature (the second derivative) may be

measured and compared to an acceleration threshold, rather than the change in temperature described above.

[0048] The measurement (404) and possible adjustment (406) may be performed a plurality of times while current or power is provided between the two devices over the connection. Accordingly, when the threshold in temperature change is reached, the current may be reduced until a safe operating temperature is realized.

Examples

[0049] The following are examples of the methods described herein.

[0050] In a first example, a power supply is capable of providing 9-36Vdc at up to 1 amp of current through a cable to a portable device. The portable device is capable of operation with an input voltage of 9-36V, with its input power management being a switch mode power supply (assumed 100% efficient, regardless of input voltage, in this example). The power supply and portable device are 'matched devices', e.g. the portable device can operate at any voltage the power supply is able to provide. The temperature of the power supply connector before any current flows to the portable device is 27degC. The power supply has a temperature delta limit on its connector of 30DegC. The power supply starts providing 9Vdc to the portable device. The portable device consumes 1A of current. However, soon after, the power supply connector temperature approaches 57DegC, which it detects. At this point the power supply increases its voltage output to 18V and the portable device accordingly decreases its current consumption to 0.5A. After a period of time, the temperature stabilizes and operation continues in this manner.

[0051] In a second example, similar to above, except many connects-disconnects of the cable occurs between the two units over time. As a result of these connects and disconnects, the contact resistance at the power supply end of the cable increases significantly. Due to the increased I^2R power dissipation, the power needs to yet again increase its output voltage (this time to 36V). The portable device then decreases its current consumption to 0.25A. In this fashion a 'safe' temperature delta is maintained at the power supply connector.

[0052] In a third example, the temperature rise occurs at the portable device end. It communicates to the power supply that it is approaching its deltaT threshold, to which the power supply increases its voltage and the portable device throttles down its current in order to meet the 'safe operating temperature delta' of the portable device.

[0053] In a fourth example, if the power supply has no knowledge of what the portable device input voltage is allowed to be, then the portable device would need to somehow communicate that to the power supply. For example, this could be performed via data transfer, either wired or wireless, or even by more simpler means, e.g. specially keyed cable connectors that physically communicate this information to/from both devices.

Advantages

[0054] The methods described herein provide many advantages over prior systems. As indicated in the background section, prior solutions may simply limit the VAs that can be provided over a connection. However, these limits do not guarantee that the connections will not fail using such a limit. For example, resistance of a connector may increase over time (e.g., through use), which may result in a higher level of heating at various different currents. Similarly, since many different manufacturers make connections, the quality and characteristics of each different connection cannot be accounted for by such a simple limit.

[0055] Further, some devices, such as hard disk drives, may require higher operating current at certain times (e.g., during spin up). Due to differing designs and the myriad of connectors, cables, ambient operating temperatures, and power delivery sources available, it is difficult (if not impossible) to guarantee consumer operation will be within a safe operating temperature without actual measurement of temperature and some means to regulate it.

[0056] As another example, connections such as fiber optic cables may sometimes include a power delivery medium (e.g., a copper wire); however, overheating of the connection (e.g., via the copper wire) may cause expansion and/or movement of the fiber optics, which may result in a failed connection.

[0057] Accordingly, by measuring the temperature (or change in temperature) of a connection, such uncertainties can be avoided and power or current can be provided in a manner that is within a safe operating temperature. Thus, the methods described above provide advantages over simple operating limits, such as a VA limit.

[0058] Additionally, by actually measuring the temperature (or change in temperature), a higher amount of power or current may be provided than was typically possible. For example, since the temperature can be measured, the current or power can be increased until it is near or at the threshold temperature, thereby allowing a maximum (or near maximum) amount of power or current to be provided to the device. This increase in power provision may be especially beneficial to devices that need battery recharging, particularly those with large batteries, such as laptops or tablet computers.

[0059] Although the embodiments above have been described in considerable detail, numerous variations and modifications will become apparent to those skilled in the art once the above disclosure is fully appreciated. It is intended that the following claims be interpreted to embrace all such variations and modifications.

Claims

We claim:

1. A method for adjusting current based on temperature, comprising:
determining a change in temperature of a connection between a first device and a second device, wherein said determining the change in temperature is performed while the first device provides current to the second device over the connection;
determining if the change in temperature is above a threshold;
if the change in temperature is above the threshold, reducing the current being provided from the first device to the second device.
2. The method of claim 1, wherein said determining the change in temperature, said determining if the change in temperature is above the threshold, and said reducing the current is performed a plurality of times while the first device provides current to the second device over the connection.
3. The method of claim 1, wherein said determining the change in temperature comprises:
determining an ambient temperature;
determining a temperature of a first connector of the connection; and
determining the difference between the ambient temperature and the temperature of the first connector of the connection.
4. The method of claim 1, wherein said determining the change in temperature comprises:
determining an initial temperature of a first connector of the connection at a first time;
determining a current temperature of the first connector of the connection at a second time; and

determining the difference between the initial temperature and the current temperature.

5. The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature of a first connector of the connection by measuring a temperature of an electrical assembly connected to the first connector of the first device or the second device.

6. The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a power pin of a first connector of the connection.

7. The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a data pin of a first connector of the connection.

8. The method of claim 1, wherein said determining the change in temperature uses an integrated circuit of the first device.

9. The method of claim 1, wherein said determining the change in temperature uses an integrated circuit of the second device.

10. The method of claim 1, wherein said reducing the current is performed by the first device.

11. A device, comprising:

a first port for coupling to a second device over a connection, wherein the first port is configured to receive a first connector of the connection;

first logic coupled to the first port, wherein the first logic is configured to determine a temperature of the connection; and

second logic, wherein the second logic is configured to provide current to the second device over the connection;

wherein, in response to the first logic determining a change in temperature above a threshold, the second logic is configured to reduce the current being provided from the first device to the second device.

12. The device of claim 11, wherein said determining the change in temperature comprises:

determining an ambient temperature;

determining a temperature of the first connector of the connection; and

determining the difference between the ambient temperature and the temperature of the first connector of the connection.

13. The device of claim 11, wherein said determining the change in temperature comprises:

determining an initial temperature of the first connector of the connection at a first time;

determining a current temperature of the first connector of the connection at a second time; and

determining the difference between the initial temperature and the current temperature.

14. The device of claim 11, wherein said determining the change in temperature comprises:

determining a temperature of the first connector of the connection by measuring a temperature of the port.

15. The device of claim 11, wherein said determining the change in temperature comprises one or more of:

determining a temperature near a power pin of the first connector of the connection;

or

determining a temperature near a data pin of the first connector of the connection.

16. A device, comprising:

a first port for coupling to a second device over a connection, wherein the first port is configured to receive a first connector of the connection;

first logic coupled to the first port, wherein the first logic is configured to determine a temperature of the connection; and

second logic, wherein the second logic is configured to receive current from the second device over the connection;

wherein, in response to the first logic determining a change in temperature above a threshold, the second logic is configured to reduce the current being received from the second device.

17. The device of claim 16, wherein said determining the change in temperature comprises:

determining an ambient temperature;

determining a temperature of the first connector of the connection; and

determining the difference between the ambient temperature and the temperature of the first connector of the connection.

18. The device of claim 16, wherein said determining the change in temperature comprises:

determining an initial temperature of the first connector of the connection at a first time;

determining a current temperature of the first connector of the connection at a second time; and

determining the difference between the initial temperature and the current temperature.

19. The device of claim 16, wherein said determining the change in temperature comprises:

determining a temperature of the first connector of the connection by measuring a temperature of the port.

20. The device of claim 16, wherein said determining the change in temperature comprises one or more of:

determining a temperature near a power pin of the first connector of the connection;

or

determining a temperature near a data pin of the first connector of the connection.

Abstract

Adjusting current based on temperature. A change in temperature of a connection between a first device and a second device may be measured. The change in temperature may be performed while the first device provides current to the second device over the connection. If the change in temperature is above a threshold, the current being provided from the first device to the second device may be reduced. The change in temperature may be performed by the first device and/or the second device, e.g., by measuring the temperature of a connector of the connection.

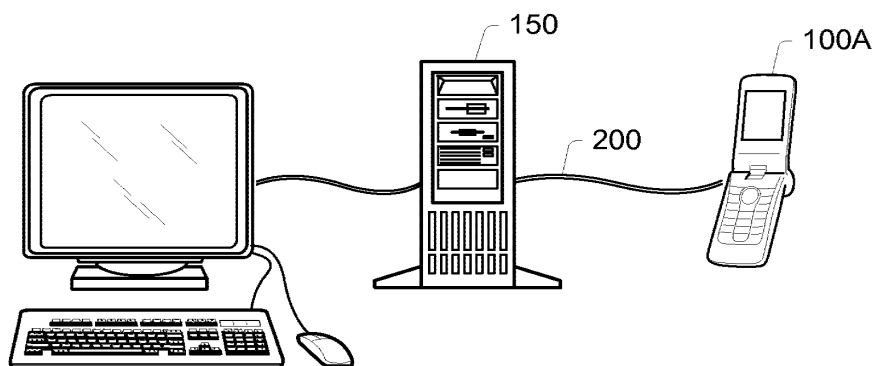


FIG. 1A

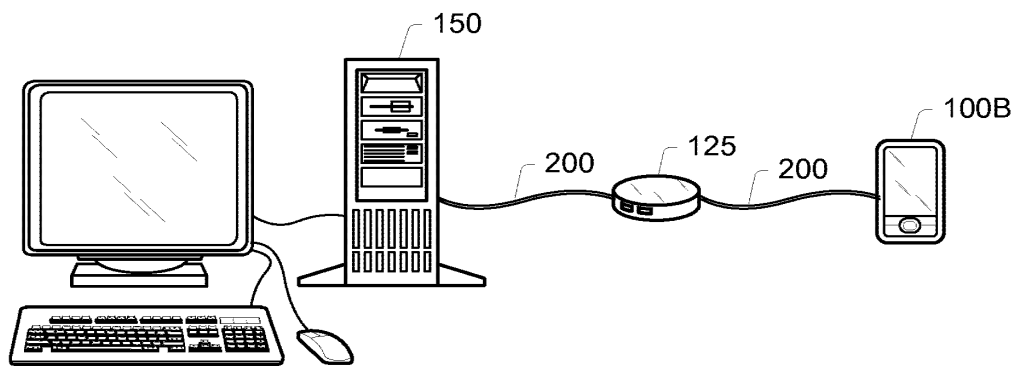


FIG. 1B

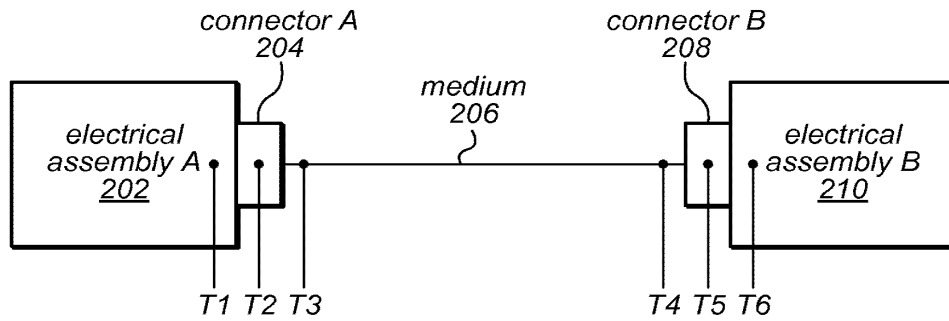


FIG. 2A

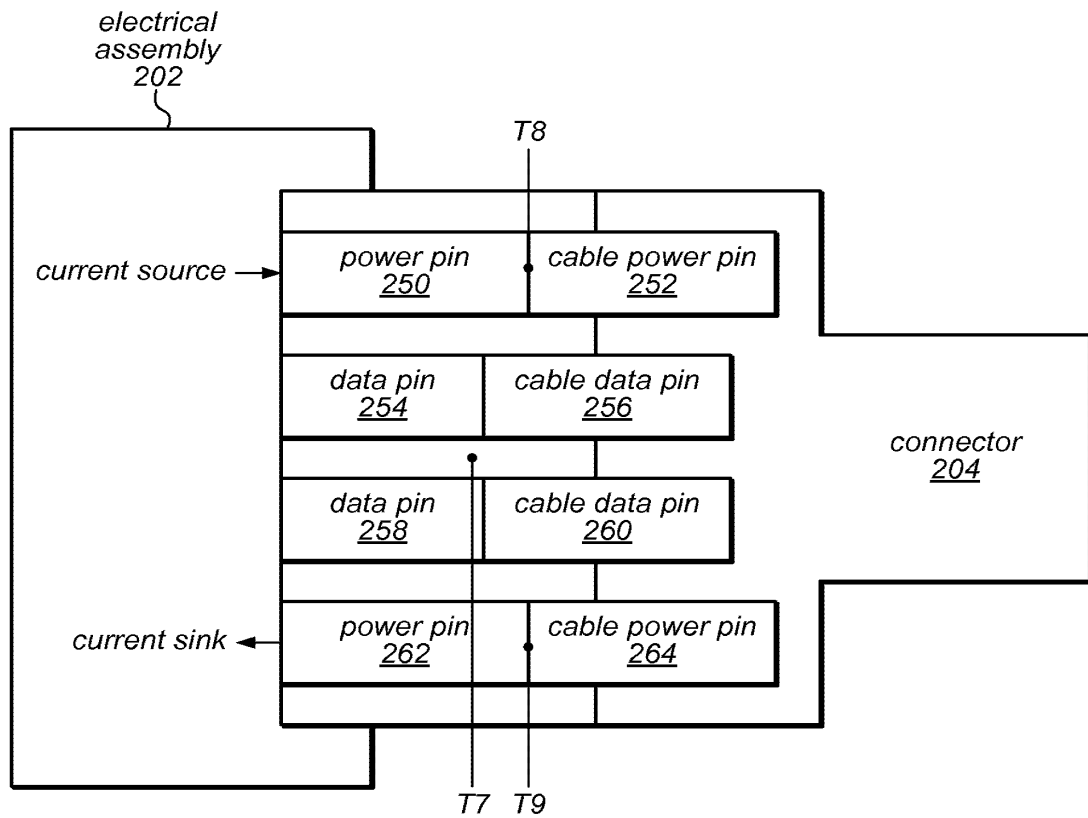


FIG. 2B

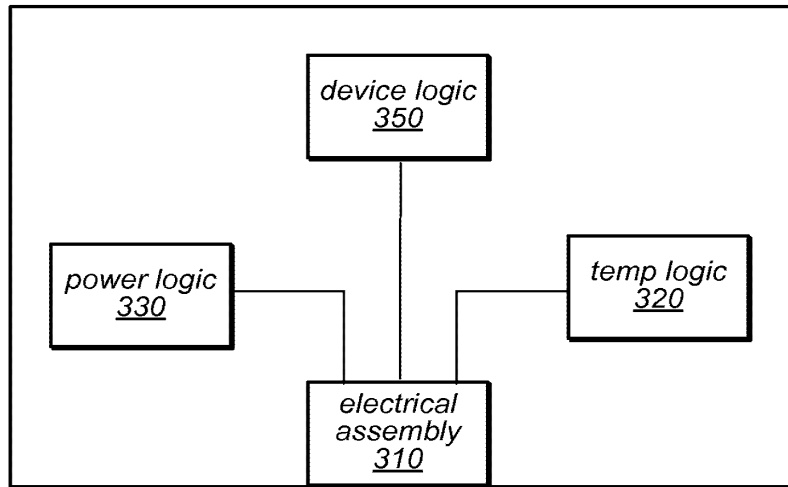


FIG. 3

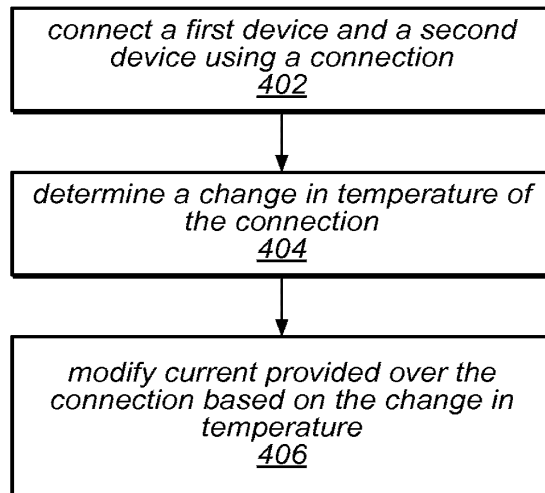


FIG. 4

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled "ADJUSTING DELIVERY OF CURRENT IN A CONNECTION BASED ON TEMPERATURE," the specification of which:

☒ is attached hereto.
☐ was filed on _____ as Application Serial No. _____
 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating at least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> (mm/dd/yy)	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> (mm/dd/yy)
N/A	

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

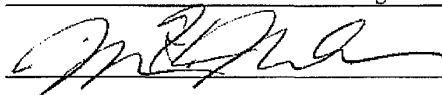
<u>Parent Application No.</u>	<u>Filing Date</u> (mm/dd/yy)	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

I hereby revoke any previous Powers of Attorney and appoint the practitioners at Customer Number 35690, which currently includes Jeffrey C. Hood, Reg. No. 35,198; B. Noël Kivlin, Reg. No. 33,929; Robert C. Kowert Reg. No. 39,255; Eric B. Meyertons, Reg. No. 34,876; Mark S. Williams, Reg. No. 50,658; and Mark K. Brightwell, Reg. No. 47,446; with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.

Please direct all communications to:

Jeffrey C. Hood
Customer Number 35690
Meyertons Hood Kivlin Kowert & Goetzel PC
P.O. Box 398
Austin, Texas 78767-0398
Phone: (512) 853-8800

I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Morgan H. Monks
Inventor's Signature:  Date: 5/9/11
City and State (or Foreign Country) of Residence: Tempe, AZ Citizenship: U.S.
Post Office and Residence Address: 8445 S. Hazelton Lane, Tempe, AZ 85284
(Include number, street name, city, state and zip code)

Inventor's Full Name: Kenneth W. Gay
Inventor's Signature: _____ Date: _____
City and State (or Foreign Country) of Residence: Tucson, AZ Citizenship: U.S.
Post Office and Residence Address: 7230 N. San Blas Drive, Tucson, AZ 85704
(Include number, street name, city, state and zip code)

Inventor's Full Name: Timothy J. Knowlton
Inventor's Signature: _____ Date: _____
City and State (or Foreign Country) of Residence: Benson, AZ Citizenship: U.S.
Post Office and Residence Address: 530 S. Pancho Place, Benson, AZ, 85602
(Include number, street name, city, state and zip code)

I hereby revoke any previous Powers of Attorney and appoint the practitioners at Customer Number 35690, which currently includes Jeffrey C. Hood, Reg. No. 35,198; B. Noël Kivlin, Reg. No. 33,929; Robert C. Kowert Reg. No. 39,255; Eric B. Meyertons, Reg. No. 34,876; Mark S. Williams, Reg. No. 50,658; and Mark K. Brightwell, Reg. No. 47,446; with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.

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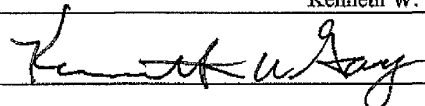
Inventor's Full Name: Morgan H. Monks

Inventor's Signature: Date:

City and State (or Foreign Country) of Residence: Tempe, AZ Citizenship: U.S.

Post Office and Residence Address: 8445 S. Hazelton Lane, Tempe, AZ 85284
(Include number, street name, city, state and zip code)

Inventor's Full Name: Kenneth W. Gay

Inventor's Signature:  Date: 5-10-2011

City and State (or Foreign Country) of Residence: Tucson, AZ Citizenship: U.S.

Post Office and Residence Address: 7230 N. San Blas Drive, Tucson, AZ 85704
(Include number, street name, city, state and zip code)

Inventor's Full Name: Timothy J. Knowlton

Inventor's Signature: Date:

City and State (or Foreign Country) of Residence: Benson, AZ Citizenship: U.S.

Post Office and Residence Address: 530 S. Pancho Place, Benson, AZ, 85602
(Include number, street name, city, state and zip code)

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Inventor's Full Name: Morgan H. Monks

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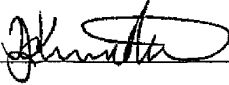
Inventor's Full Name: Kenneth W. Gay

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Post Office and Residence Address: 7230 N. San Blas Drive, Tucson, AZ 85704
(Include number, street name, city, state and zip code)

Inventor's Full Name: Timothy J. Knowlton

Inventor's Signature:  Date: 5/17/2011

City and State (or Foreign Country) of Residence: Benson, AZ Citizenship: U.S.

Post Office and Residence Address: 530 S. Pancho Place, Benson, AZ, 85602
(Include number, street name, city, state and zip code)

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Adjusting Delivery of Current in a Connection Based on Temperature		
First Named Inventor/Applicant Name:		Morgan H. Monks		
Filer:		Jeffrey C Hood/Jeannie Miranda		
Attorney Docket Number:		5707-25900		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1090

Electronic Acknowledgement Receipt	
EFS ID:	10108380
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	35690
Filer:	Jeffrey C Hood/Jeannie Miranda
Filer Authorized By:	Jeffrey C Hood
Attorney Docket Number:	5707-25900
Receipt Date:	17-MAY-2011
Filing Date:	
Time Stamp:	15:15:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1090
RAM confirmation Number	1603
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1		5707-25900_patent_app.pdf	123097	yes	24
			ee3b6b9b94497eff7a7971e9f5f376f714898c		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	18	
	Claims		19	23	
	Abstract		24	24	
Warnings:					
Information:					
2	Drawings-only black and white line drawings	5707-25900_formal_drawings.pdf	64170	no	4
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Warnings:					
Information:					
3	Oath or Declaration filed	5707-25900_signed_dec_poa.pdf	278956	no	4
			cf14751f6d0d3e1ef3320dc2bf67cb917c678448		
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	32692	no	2
			76f4043b0c092b86ee51f594936c8cb9eacc816e		
Warnings:					
Information:					
Total Files Size (in bytes):			498915		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
13/109,446	05/17/2011	3744	1090	5707-25900	20	3

CONFIRMATION NO. 1420

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

FILING RECEIPT



OC000000047931864

Date Mailed: 06/01/2011

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Morgan H. Monks, Tempe, AZ;
Kenneth W. Gay, Tucson, AZ;
Timothy J. Knowlton, Benson, AZ;

Power of Attorney: The patent practitioners associated with Customer Number 35690

Domestic Priority data as claimed by applicant

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

If Required, Foreign Filing License Granted: 05/27/2011

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/109,446**

Projected Publication Date: 11/22/2012

Non-Publication Request: No

Early Publication Request: No

Title

Adjusting Delivery of Current in a Connection Based on Temperature

Preliminary Class

062

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/109,446				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	330			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	540			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	220			
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *			OR	x 52 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 220 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL		TOTAL	1090			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
TOTAL ADD'L FEE								OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
TOTAL ADD'L FEE								OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13109446	
	Filing Date		2011-05-17	
	First Named Inventor	Morgan H. Monks		
	Art Unit	2855		
	Examiner Name			
	Attorney Docket Number	5707-25900		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	6072681		2000-06-06	Cogan, et al.			
	2	7797560		2010-09-14	Diab			
	3	5181026		1993-01-19	Granville			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13109446
	Filing Date		2011-05-17
	First Named Inventor	Morgan H. Monks	
	Art Unit	2855	
	Examiner Name		
	Attorney Docket Number	5707-25900	

If you wish to add additional Foreign Patent Document citation information please click the Add button				Add
NON-PATENT LITERATURE DOCUMENTS				Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.		T ⁵
	1			☐
If you wish to add additional non-patent literature document citation information please click the Add button				
EXAMINER SIGNATURE				
Examiner Signature				Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.				

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13109446
	Filing Date	2011-05-17
	First Named Inventor	Morgan H. Monks
	Art Unit	2855
	Examiner Name	
	Attorney Docket Number	5707-25900

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey C. Hood/	Date (YYYY-MM-DD)	2011-08-12
Name/Print	Jeffrey C. Hood	Registration Number	35,198

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	10722723
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	35690
Filer:	Jeffrey C Hood/Danielle Kramer
Filer Authorized By:	Jeffrey C Hood
Attorney Docket Number:	5707-25900
Receipt Date:	12-AUG-2011
Filing Date:	17-MAY-2011
Time Stamp:	10:36:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	5707-25900_IDS.pdf	612160 d1bd69befbdc8dbfcc53e093515229f4e665f49cf	no	4

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/109,446	05/17/2011	Morgan H. Monks	5707-25900

CONFIRMATION NO. 1420

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

PUBLICATION NOTICE



Title:Adjusting Delivery of Current in a Connection Based on Temperature

Publication No.US-2012-0294332-A1

Publication Date:11/22/2012

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number:

86528

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer Number:

86528

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

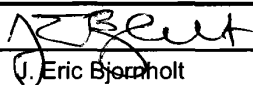
Assignee Name and Address:

SMSC Holdings S.a.r.l.
6 Rue Philippe II
Luxembourg, Luxembourg L-2340

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	4/13/13
Name	J. Eric Bjornholt	Telephone	480-792-7804
Title	Manager, SMSC Holdings S.a.r.l.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	14896758
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	35690
Filer:	Eric M. Grabski/Todd Rosson
Filer Authorized By:	Eric M. Grabski
Attorney Docket Number:	5707-25900
Receipt Date:	06-FEB-2013
Filing Date:	17-MAY-2011
Time Stamp:	20:47:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73.	373b_MTI3995US0.pdf	241638 1ac72397acced595845dfddad042c3425ae282e5	no	1

Warnings:

Information:

2	Power of Attorney	POA_SMSC.pdf	65279 aee36347b29e0bba26bedb5393f2e102f9a3917b	no	1
Warnings:					
Information:					
Total Files Size (in bytes):				306917	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Morgan H. Monks et al.

Application No./Patent No.: 13/109,446

Filed/Issue Date: May 17, 2011

Entitled:

SMSC Holdings S.a.r.l. a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title, and interest

The extent (by percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 026292, Frame 0053, or for which a copy thereof is attached.

OR

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

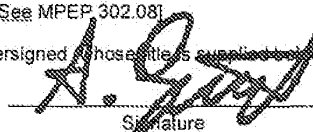
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.081.]

The undersigned, whose title is supplied below, is authorized to act on behalf of the assignee.


Signature

Andreas H. Grubert

Printed or Typed Name

Attorney for Applicant

Title

February 6, 2013

Date

(512) 457-2025

Telephone Number

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/109,446	05/17/2011	Morgan H. Monks	5707-25900

86528
King & Spalding LLP
401 Congress Avenue
Suite 3200
Austin, TX 78701

CONFIRMATION NO. 1420
POA ACCEPTANCE LETTER



Date Mailed: 02/15/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/06/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/gbien-aime/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/109,446	05/17/2011	Morgan H. Monks	5707-25900

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

CONFIRMATION NO. 1420
POWER OF ATTORNEY NOTICE



Date Mailed: 02/15/2013

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/06/2013.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/gbien-aime/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	5707-25900	1420
86528	7590	05/23/2013		
King & Spalding LLP 401 Congress Avenue Suite 3200 Austin, TX 78701			EXAMINER VERBITSKY, GAIL KAPLAN	
			ART UNIT 2856	PAPER NUMBER
			NOTIFICATION DATE 05/23/2013	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

AustinUSPTO@kslaw.com
AustinIP@kslaw.com
emitchell@kslaw.com

Office Action Summary	Application No. 13/109,446	Applicant(s) MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☐ Claim(s) _____ is/are rejected.
- 8) ☐ Claim(s) _____ is/are objected to.
- 9) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some * c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Interim copies:

- a) ☐ All b) ☐ Some c) ☐ None of the: Interim copies of the priority documents have been received.

Attachment(s)

- | | |
|---|---|
| 1) ☐ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413) |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08) | Paper No(s)/Mail Date. _____ |
| Paper No(s)/Mail Date _____ | 4) ☐ Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to device and method for adjusting current, classified in class 374, subclass 183.
- II. Claims 16-20, drawn to device (determining temperature of a connector), classified in class 702, subclass 130.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions: Invention I is directed to a device for adjusting current, Invention II is directed to a device and method comprising logic, not required by Invention I.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because at least the following reason(s) apply:

Different Inventions.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement

may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention.**

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lisa Caputo can be reached on 571/ 272-2388. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gail Verbitsky
Primary Patent Examiner, TC 2800

May 17, 2013
/Gail Verbitsky/
Primary Examiner, Art Unit 2856

<i>Index of Claims</i> 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant
 ☐ CPA
 ☐ T.D.
 ☐ R.1.47

CLAIM		DATE									
Final	Original	05/20/2013									
	1	÷									
	2	÷									
	3	÷									
	4	÷									
	5	÷									
	6	÷									
	7	÷									
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	18	÷									
	19	÷									
	20	÷									

ATTORNEY DOCKET
68354.225888

PATENT APPLICATION
13/109,446

1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Morgan H. Monks et al.
Serial No.:	13/109,446
Date Filed:	May 17, 2011
Group Art Unit:	2856
Confirmation No.:	1420
Examiner:	Verbitsky, Gail Kaplan
Title:	ADJUSTING DELIVERY OF CURRENT IN A CONNECTION BASED ON TEMPERATURE

MAIL STOP – AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO ELECTION RESTRICTION

In response to the Election Restriction mailed May 23, 2013, Applicants respectfully submit the following remarks and request favorable action thereon.

Amendments to Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. (Original) A method for adjusting current based on temperature, comprising:
determining a change in temperature of a connection between a first device and a second device, wherein said determining the change in temperature is performed while the first device provides current to the second device over the connection;
determining if the change in temperature is above a threshold;
if the change in temperature is above the threshold, reducing the current being provided from the first device to the second device.
2. (Original) The method of claim 1, wherein said determining the change in temperature, said determining if the change in temperature is above the threshold, and said reducing the current is performed a plurality of times while the first device provides current to the second device over the connection.
3. (Original) The method of claim 1, wherein said determining the change in temperature comprises:
determining an ambient temperature;
determining a temperature of a first connector of the connection; and
determining the difference between the ambient temperature and the temperature of the first connector of the connection.

4. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining an initial temperature of a first connector of the connection at a first time;
determining a current temperature of the first connector of the connection at a second time; and
determining the difference between the initial temperature and the current temperature.

5. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature of a first connector of the connection by measuring a temperature of an electrical assembly connected to the first connector of the first device or the second device.

6. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a power pin of a first connector of the connection.

7. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a data pin of a first connector of the connection.

8. (Original) The method of claim 1, wherein said determining the change in temperature uses an integrated circuit of the first device.

9. (Original) The method of claim 1, wherein said determining the change in temperature uses an integrated circuit of the second device.

10. (Original) The method of claim 1, wherein said reducing the current is performed by the first device.

11. (Original) A device, comprising:
a first port for coupling to a second device over a connection, wherein the first port is configured to receive a first connector of the connection;
first logic coupled to the first port, wherein the first logic is configured to determine a temperature of the connection; and
second logic, wherein the second logic is configured to provide current to the second device over the connection;
wherein, in response to the first logic determining a change in temperature above a threshold, the second logic is configured to reduce the current being provided from the first device to the second device.

12. (Original) The device of claim 11, wherein said determining the change in temperature comprises:
determining an ambient temperature;
determining a temperature of the first connector of the connection; and
determining the difference between the ambient temperature and the temperature of the first connector of the connection.

13. (Original) The device of claim 11, wherein said determining the change in temperature comprises:
determining an initial temperature of the first connector of the connection at a first time;
determining a current temperature of the first connector of the connection at a second time; and
determining the difference between the initial temperature and the current temperature.

14. (Original) The device of claim 11, wherein said determining the change in temperature comprises:

determining a temperature of the first connector of the connection by measuring a temperature of the port.

15. (Original) The device of claim 11, wherein said determining the change in temperature comprises one or more of:

determining a temperature near a power pin of the first connector of the connection; or
determining a temperature near a data pin of the first connector of the connection.

16-20. (Cancelled)

REMARKS

Applicants have reviewed this Application in light of the Election/Restriction Requirement mailed May 23, 2013. The Examiner sets forth an election of invention between the following allegedly distinct inventions:

Group 1: Claims 1-15 and

Group 2: Claims 16-20.

Applicants hereby elect with traverse to prosecute Claims 1-15 (Group 1). Non-elected Claims 16-20 are hereby cancelled. Applicants reserve the right to file one or more divisional applications for Claims 16-20 at a later date.

Applicants believe there are no fees due at this time. However, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-4871 of King & Spalding L.L.P. If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512-457-2025.

Respectfully submitted,
KING & SPALDING LLP
Attorney for Applicants



Andreas H. Grubert
Registration No. 59,143

Date: June 24, 2013

SEND CORRESPONDENCE TO:

KING & SPALDING L.L.P.

CUSTOMER ACCOUNT NO. **86528**

512-457-2025

512-457-2100 (fax)

Electronic Acknowledgement Receipt	
EFS ID:	16138394
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	86528
Filer:	Eric M. Grabski/Todd Rosson
Filer Authorized By:	Eric M. Grabski
Attorney Docket Number:	68354.225888
Receipt Date:	24-JUN-2013
Filing Date:	17-MAY-2011
Time Stamp:	18:00:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response_ER_225888.pdf	104060 b8d32c74d0b984357a54e5e4241f4cb3b4d e4bb8	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Response to Election / Restriction Filed	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	6
Warnings:			
Information:			
Total Files Size (in bytes):		104060	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 13/109,446		Filing Date 05/17/2011		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED – PART I									
(Column 1)		(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		X \$ =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		X \$ =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL					
APPLICATION AS AMENDED – PART II									
(Column 1)		(Column 2)		(Column 3)					
AMENDMENT	06/24/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0	X \$80 =		0	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$420 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
(Column 1)		(Column 2)		(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	68354.225888	1420

86528	7590	08/30/2013
King & Spalding LLP 401 Congress Avenue Suite 3200 Austin, TX 78701		

EXAMINER	
VERBITSKY, GAIL KAPLAN	

ART UNIT	PAPER NUMBER
2856	

NOTIFICATION DATE	DELIVERY MODE
08/30/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

AustinUSPTO@kslaw.com
AustinIP@kslaw.com
emitchell@kslaw.com

Office Action Summary	Application No. 13/109,446	Applicant(s) MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/24/13.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-15 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☒ Claim(s) 16-20 are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some * c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413) |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08) | Paper No(s)/Mail Date. ____ |
| Paper No(s)/Mail Date <u>08/12/11</u> . | 4) ☐ Other: ____ |

DETAILED ACTION

Election/Restrictions

Claims 16-20 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 06/24/13.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, **the logic, the integrated circuits** must be shown or the feature(s) canceled from the claim(s) 8-9, 11 with appropriate numerals. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 6-9, 11-15 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. In this case, the claim language is confusing because:

Claims 3, 12: it is not clear what particular ambient temperature is being measured.

Claims 6-7, 15: it is not clear from the claims how the power pin and the data pin are structurally related to the rest of claimed elements since it is not clear where "a connector" is positioned..

Claims 11-15: means for determining a change in temperature (claim 11), means for determining ambient temperature (claim 12), means for determining an initial

temperature and a current temperature (claim 13), means for determining temperature of a first connector and temperature of the port (claim 14), means for determining temperature of a power pin and a data pin (claim 15) have not been claimed (please remember, claims 11-15 are apparatus not method claims).

Claims 8-9: it is not clear how the integrated circuits are being used. Claim 8-9 provide for the use of the integrated circuits, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 8-9 are is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated Gase et al. (U.S. 20130100982, filed on 03/15/2011) [hereinafter Gase].

Gase discloses in Fig. 1 a device/ method for adjusting current based on temperature, comprising:

determining a change in temperature of a connection/ cable 10, 19 between a first device 20 and a second device 17, wherein said determining the change in temperature is performed while the first device 20 provides current to the second device over the connection;

determining if the change in temperature is above a threshold/ (exceeds a defined range, claim 19 of Gase);

if the change in temperature is above the threshold, reducing the current being provided from the first device to the second device (claim 19 of Gase).

The method claims will be met during the normal operation of the device stated above.

Claims 1-3, 5-7, 10 are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Baker et al. (U.S. 20090139972) [hereinafter Baker 1].

Baker 1 discloses in Fig. 1 a device/ method for adjusting current based on temperature, comprising:

determining a change in temperature (temperature sensor 42) of a connection 40 (para [0020]) between a first device/power input 60 and a second device HEC 30, 50 wherein said determining the change in temperature is performed while the first device 60 provides current to the second device 30 over the connection/ connector 40;

determining if the change in temperature is above a threshold (compared with a setpoint, Abstract);

if the change in temperature is above the threshold, reducing the current (or disconnect) being provided from the first device 60 by means of the first connector 40 and to an/ interface 80 to the electronic device by means of a connector 50 of the connection.

For claim 6: since the first connector 40 is nearby to a pin (power pin) of the second device/ 30, it is considered that the first connector would determine the second device temperature near the power pin (first connector).

Art Unit: 2856

For claim 7: Baker 1 teaches that the temperature near input pin/ data pin of the (first) connector 40 (Fig. 1).

For claims 4: it is very well known in the art to determine change in temperature by taking an initial temperature and a current temperature difference.

For claim 5: Baker 1 teaches to determine a temperature of a (first connector) 40 by measuring temperature of the pogo pin (electrical assembly) of the second device 50 (para [0029]).

For claim 3: said determining the change in temperature comprises: determining an ambient temperature (para [0023], [0026] and claim 8 of Baker) and comparing (difference) it to a threshold value (para [0026]). It is considered that the ambient temperature threshold value must be indicative of the desired temperature of the connector. Further actions include providing additional current to the heater to heat the connector.

For claim 2: since the connector 40 is a switch, it is inherent, that when the temperature is too high/ above the threshold, the current from the device 60 will be disconnected/ reduced. This, inherently, could be done a plurality of time (at least two), till a desired temperature has been reached,

For claim 10: said reducing the current is performed by the first device reduced current from the power 60.

The method claims will be met during the normal operation of the device stated above.

Claims 1, 4, 6-7, 11-15 are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Reusche et al. (U.S. 20070006603) [hereinafter Reusche].

Reusche discloses in Fig. 1 a device/ method for adjusting current based on temperature, comprising:

determining a change in temperature of a connection 305 between a first device 310 and a second device (to be connected to first ports 320), wherein said determining the change in temperature is performed while the first device 310 provides current to the second device 320 over the connection;

using a temperature sensor 150/350 and a control unit 140 determining if the change in temperature is above a threshold (para [0062]);

if the change in temperature is above the threshold, reducing (using a control switch 130) the current being provided from the first device 310 to the second device 320.

For claim 11: The control unit may comprise logic components (para [0038]), thus, having a (first) logic coupling to the second device 320 and a (second) logic coupling to the first device 310.

For claims 6-7, 15: as seen in Fig. 3, the temperature sensor is connected near an input terminal/ power pin and an output terminal/ data pin.

For claim 14: the temperature near the ports 320 is being measured.

For claims 4, 12-13: it is considered that the initial temperature is the same as the setpoint temperature. Reusche teaches to compare (difference) the initial/ setpoint/ ambient temperature with the temperature being measured during the operation of the device (current temperature).

The method claims will be met during the normal operation of the device stated above.

Claims 1, 11-13 are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Baker (U.S. 20060238169) [hereinafter Baker 2].

Baker 2 discloses in Fig. 1 a device/ method comprising a first device 20, a second device 30 a connector/ first connector 40 including temperature controlled current regulator (first logic/ second logic/ integrated circuits) 50 for determining CP1 temperature, comparing it (difference) with a base/ threshold/ set temperature and thus, regulating the current from the first device 20 to the second device 30.

The temperature controlled regulator 50, inherently (see Fig. 5), connected to a first port (connecting the connector 40 to the second device) and a second port (connecting the connector 40 to the first device 20), the regulator 50, inherently, comprising logic (first and second), the logic is configured to determine if the temperature is within a predetermined level (comparing/ determines differential with reference/ threshold (para [0007]) and decides if the current should be reduced based on the temperature difference.

The second device 30, inherently, has a (first) port to receive a (first) connector from the connection device 40.

First/ logic signal (part of the temperature controlled regulator) is, inherently, coupled to the (first and second) ports and the (first) connector coupled to either first or second ports, the first logic is determining the temperature of the connector 40 (para [0067] for logic [0068]).

Second/ logic signal (also a part of the temperature controlled regulator) is configured to provide a regulated current to the second device 30 and configured to regulate/ reduce the current (see Fig. 5, pos. 61) if necessary (para [0067], [0068] for logic).

For claim 12: Baker 2 teaches to measure operation temperature of a path CP1 of a (first) connector, and states that is a function of ambient temperature (para [0026]).

Therefore, the ambient temperature can be determined and the difference between the ambient and the operation temperature also can be determined.

For claim 13: it is very well known in the art to determine change in temperature by taking an initial temperature and a current temperature difference.
The method claims will be met during the normal operation of the device stated above.

Claims 1, 6, 7 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Williams (U.S. 6905362).

Williams discloses in Fig. 1 a device/ method for adjusting current based on temperature, comprising:
determining a change in temperature (temperature sensor 49 and alternative temperature sensor) of a connection/ connector 10 between a first device (charging system) and a second device (receptacle 37 of a vehicle), wherein said determining the change in temperature is performed while the first device provides current/ controls current flow to the second device over the connection;
determining if the change in temperature is above a threshold (col. 6, lines 30-33);
if the change in temperature is above the threshold, reducing the current being provided from the first device to the second device.
As shown in Fig. 1, the temperature sensor 49 is nearby sockets/ pins 20-24 and, when inserted, nearby an input (data) pin of the second device, thus, inherently indicative of their temperatures.
The method claims will be met during the normal operation of the device stated above.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 9 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Baker et al. (U.S. 20090139972) [hereinafter Baker 1].

For claim 8: Baker 1 discloses in Fig. 1 a device/ method for adjusting current based on temperature, comprising:
determining a change in temperature (temperature sensor 42 in a close proximity with a part of the second device/ integrated circuit of device 50) of a connection/ first connector 40 between a first device/ power input 60 and a second device/ heater HEC 70 and a connector/part of the second device 50 wherein said determining the change in temperature is performed while the first device 60 provides current to the second device 70 over the connection;
determining if the change in temperature is above a threshold (compared with a setpoint, Abstract);
if the change in temperature is above the threshold, reducing the current (or disconnect) being provided from the first device/ interface 80 to the electronic device/ the second device.
Baker does not explicitly teach all the limitations of claims 8, 9.

For claim 9: having a temperature sensor in proximity of a (integrated circuit) first device: it was held that there would be no invention in shifting the temperature sensor disclosed by Prior Art to a **different position** since the operation of the device would not thereby be modified. See In re Japikse, 86 USPQ 70 (CCPA 1950).

Please note since the device of Baker is directed to a docking connection, it is considered that the electronics comprises integrated circuits.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

**Ichikawa (U.S. 20120249066) discloses in Figs. 1, 7 a device/ method for adjusting current based on temperature, comprising:
determining a change in temperature of a connection/ cable 342 (with a first connector 40 with a limit switch 320) between a first device 50 and a second device 60, wherein said determining the change in temperature is performed while the first device provides current to the second device over the connection;
determining if the change in temperature is above a threshold;
if the change in temperature is above the threshold, reducing the current being provided from the first device to the second device.**

Noone et al. (U.S. 4791290) discloses a connector to be connected to an electronic device. Noone is concerned with the temperature of the connector pins.

Williams (U.S. 6430517) teaches to measure temperature near input/ output (power/ data) pin (claim 16 of Williams).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lisa Caputo can be reached on 571/ 272-2388. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gail Verbitsky
Primary Patent Examiner, TC 2800

August 19, 2013
/Gail Verbitsky/
Primary Examiner, Art Unit 2856

Notice of References Cited	Application/Control No. 13/109,446	Applicant(s)/Patent Under Reexamination MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2009/0139972	06-2009	Baker et al.	219/201
*	B	US-2013/0100982	04-2013	Gase et al.	374/45
*	C	US-2012/0249066	10-2012	Ichikawa, Shinji	320/109
*	D	US-5,185,594	02-1993	DeChurch, Robert M.	340/596
*	E	US-2007/0006603	01-2007	Reusche et al.	062/196.4
*	F	US-2006/0238169	10-2006	Baker, William	320/150
*	G	US-6,905,362	06-2005	Williams, Roger C.	439/490
*	H	US-2002/0126431	09-2002	Yanagisawa, Takashi	361/103
*	I	US-2011/0134575	06-2011	Ward et al.	361/42
*	J	US-2004/0058588	03-2004	Demeocq, Etienne	439/894
*	K	US-7,108,528	09-2006	Wambsganss et al.	439/188
*	L	US-7,074,089	07-2006	Kajiura et al.	439/620.01
*	M	US-6,893,153	05-2005	Hoffer et al.	374/152

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 13/109,446	Applicant(s)/Patent Under Reexamination MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,791,290	12-1988	Noone et al.	250/239
*	B	US-6,430,517	08-2002	Williams, Rodney O.	702/63
*	C	US-2009/0124131	05-2009	Breunsbach et al.	439/652
*	D	US-2002/0043978	04-2002	McDonald, Kevin B	324/508
*	E	US-2011/0181294	07-2011	Ziegler, William	324/538
*	F	US-6,780,060	08-2004	Kajjura et al.	439/620.21
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

WEST Search History for Application 13109446

Creation Date: 2013082609:13

Prior Art Searches

Query	DB	Op.	Plur.	Thes.	Date
(365/211, 212, 22, 201;374/170, 171, 172, 173, 178, 141, 1;702/99, 130, 132, 133, 134, 135, 136;327/536, 537, 513, 512)! [CCLS]	PGPB, USPT, USOC, EPAB, JPAB	ADJ	YES		08-19-2013
7724122.pn.	USPT	ADJ	YES		08-19-2013
6422744.pn.	USPT	ADJ	YES		08-20-2013
6072681.pn.	USPT	ADJ	YES		08-20-2013
374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(374/\$.ccls.) and (adapter or electrical outlet) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (374/\$.ccls. and (adapter or electrical outlet) near3 (temperature))	PGPB, USPT, USOC, EPAB,	ADJ	YES		08-20-2013

	JPAB, DWPI, TDBD, FPRS				
(power near adapter) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surrounding or external or environmental) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)	PGPB, USPT,	ADJ	YES		08-20-2013

	USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) and (ambient or surround\$3 or external or environment\$3) near (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) and (ambient or surround\$3 or external or environment\$3) near (temperature)) and (power near adapter)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013

(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) same (connector)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) same (connector) and (150)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(connector or adapter) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD,	ADJ	YES		08-20-2013

	FPRS				
((connector or adapter) near (temperature)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((connector or adapter) near (temperature) and (ambient or surround\$3 or external or environment\$3) near (temperature)) and (pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(dock\$4) near (station or connector) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(dock\$4) near (station or connector) near3 (temperature) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and ((dock\$4) near (station or connector) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (computer or PC or laptop) same (phone or telephone or cell phone)	PGPB, USPT, USOC, EPAB, JPAB,	ADJ	YES		08-20-2013

	DWPI, TDBD, FPRS				
20090139972	PGPB, USPT	ADJ	YES		08-20-2013
(20090139972) and (60)	PGPB, USPT	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
20060238169	PGPB, USPT	ADJ	YES		08-20-2013
(20060238169) and (temperature)	PGPB, USPT	ADJ	YES		08-20-2013
13109446	PGPB, USPT	ADJ	YES		08-20-2013
(13109446) and (first logic and second logic)	PGPB, USPT	ADJ	YES		08-20-2013
(13109446) and (logic)	PGPB, USPT	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or	PGPB, USPT,	ADJ	YES		08-20-2013

regulat\$4 or decreas\$4 or reduc\$4) near (current)) and (logic or digital)	USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic or digital)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic or digital)) and (power pin and data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(connector or adapter or docking station) and (power pin and data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((connector or adapter or docking station) and (power pin and data pin)) and (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
6072681.pn.	USPT	ADJ	YES		08-20-2013
7797560.pn.	USPT	ADJ	YES		08-20-2013
5181026.pn.	USPT	ADJ	YES		08-20-2013
power near pin near temperature	USPT	ADJ	YES		08-20-2013
power near pin near temperature	PGPB, USPT,	ADJ	YES		08-20-2013

	USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
data near pin near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
CN-201438744-U.did.	EPAB	ADJ	YES		08-20-2013
20130100982,	PGPB, USPT	ADJ	YES		08-23-2013
20060238169	PGPB, USPT	ADJ	YES		08-23-2013
(20060238169) and (ambient)	PGPB, USPT	ADJ	YES		08-23-2013
(connector) near5 (power pin) near5 (data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector or USB) near5 (power pin) near5 (data pin) near5 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector or USB) same (power pin or input pin) same (data pin or output pin) same (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013

(connector or USB) same (power pin or input pin or data pin or output pin) same (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(20060238169) and (pin or node or terminal)	PGPB, USPT	ADJ	YES		08-23-2013
(pin or node or terminal) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin or node or terminal) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(374/\$.ccls.) and ((pin near temperature))	PGPB, USPT, USOC, EPAB,	ADJ	YES		08-23-2013

	JPAB, DWPI, TDBD, FPRS				
439/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (USB) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (USB) near5 (temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (connector) near5 (temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls. and (connector) near5 (temperature sensor)) and (pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin near temperature)	PGPB, USPT,	ADJ	YES		08-23-2013

	USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
(connector pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(USB pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
6905362.pn.	USPT	ADJ	YES		08-23-2013
(6905362.pn.) and (PCB or integrated circuit or chip or logic or clock or counter)	USPT	ADJ	YES		08-23-2013
20070006603	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (350)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (350) and (PCB or integrated circuit or chip or logic or clock or counter)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (140) and (PCB or integrated circuit or chip or logic or clock or counter)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603 and (140) and (PCB or integrated circuit or chip or logic or clock or counter))	PGPB, USPT	ADJ	YES		08-23-2013
20070006603	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (ambient)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (ambient) and (internal)	PGPB, USPT	ADJ	YES		08-23-2013
13049716		ADJ	YES		08-23-2013

<i>Index of Claims</i> 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
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✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA				☐ T.D.				☐ R.1.47			
CLAIM		DATE													
Final	Original	05/20/2013	08/23/2013												
	1	÷	✓												
	2	÷	✓												
	3	÷	✓												
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	14	÷	✓												
	15	÷	✓												
	16	÷	N												
	17	÷	N												
	18	÷	N												
	19	÷	N												
	20	÷	N												

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

13109446 - GAI: 2856

Approved for use through 07/31/2012. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13109446	
	Filing Date		2011-05-17	
	First Named Inventor	Morgan H. Monks		
	Art Unit	2855		
	Examiner Name			
	Attorney Docket Number	5707-25900		

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6072681		2000-06-06	Cogan, et al.	
	2	7797560		2010-09-14	Diab	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13109446 13109446 - GAU: 2856
	Filing Date	2011-05-17
	First Named Inventor	Morgan H. Monks
	Art Unit	2855
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Examiner Signature	/Gail Verbitsky/		Date Considered	08/23/2013
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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.				

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13109446 13109446 - GAU: 2856
	Filing Date	2011-05-17
	First Named Inventor	Morgan H. Monks
	Art Unit	2855
	Examiner Name	
	Attorney Docket Number	5707-25900

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey C. Hood/	Date (YYYY-MM-DD)	2011-08-12
Name/Print	Jeffrey C. Hood	Registration Number	35,198

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.V./

Search Notes 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
374	170,1,163,183,141,152,208	08/19/13	gv
439	text	08/19/13	gv

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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ATTORNEY DOCKET
68354.225888

PATENT APPLICATION
13/109,446

I

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Morgan H. Monks et al.
Serial No.: 13/109,446
Date Filed: May 17, 2011
Group Art Unit: 2856
Confirmation No.: 1420
Examiner: Verbitsky, Gail Kaplan
Title: **ADJUSTING DELIVERY OF CURRENT IN A
CONNECTION BASED ON TEMPERATURE**

MAIL STOP – AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO OFFICE ACTION

In response to the Office Action mailed August 30, 2013, Applicants respectfully submit the following remarks and request favorable action thereon.

Amendments to Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

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CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. (Currently Amended) A method for adjusting current based on temperature, comprising:

determining a change temperature at a first device wherein said temperature is measured at a first port of the first device that is configured to receive a connection to a second device;

determining a change temperature at a second device wherein said temperature is measured at a second port of the second device that is configured to receive the connection to the first device;

determining the greater of the changes in temperature measured at the first device and the second device. ~~determining a change in temperature of a the connection between a the first device and a the second device;~~ wherein said determining ~~the change in temperature~~ is performed while the first device provides current to the second device over the connection;

determining if the greater of the changes in temperature is above a threshold;

if the greater of the changes in temperature is above the threshold, reducing the current being provided from the first device to the second device.

2. (Original) The method of claim 1, wherein said determining the change in temperature, said determining if the change in temperature is above the threshold, and said reducing the current is performed a plurality of times while the first device provides current to the second device over the connection.

3. (Currently Amended) The method of claim 1, wherein said determining the change in temperature comprises:

determining an ambient temperature at the first device;
determining a temperature of a first connector of the connection; and
determining the difference between the ambient temperature and the temperature of the first connector of the connection.

4. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining an initial temperature of a first connector of the connection at a first time;
determining a current temperature of the first connector of the connection at a second time; and
determining the difference between the initial temperature and the current temperature.

5. (Original) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature of a first connector of the connection by measuring a temperature of an electrical assembly connected to the first connector of the first device or the second device.

6. (Currently Amended) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a power pin of ~~a~~ the first connector of the connection.

7. (Currently Amended) The method of claim 1, wherein said determining the change in temperature comprises:

determining a temperature near a data pin of ~~a~~ the first connector of the connection.

8-9. (Cancelled)

10. (Original) The method of claim 1, wherein said reducing the current is performed by the first device.

11. (Currently Amended) A device, comprising:
a connection coupling a first device and a second device;
a first port of the first device for coupling to a second device over a connection, wherein the first port is configured to receive a first connector of the connection;
first logic of the first device coupled to the first port, wherein the first logic is configured to determine a temperature of the connection at the first connector; and
second logic of the first device, wherein the second logic is configured to provide current to the second device over the connection;
a second port of the second device, wherein the second port is configured to receive a second connector of the connection;
third logic of the second device coupled to the second port, wherein the third logic is configured to determine a temperature of the connection at the second connector;
wherein, in response to the greater of the first logic determining a change in temperature determined by the first logic and the change in temperature determined by the third logic being above a threshold, the second logic is configured to reduce the current being provided from the first device to the second device.

12. (Currently Amended) The device of claim 11, wherein said first logic is configured to: determining the change in temperature comprises:
determine determining an ambient temperature at the first device;
determining a temperature of the first connector of the connection; and
determine determining the difference between the ambient temperature and the temperature of the first connector of the connection.

13. (Currently Amended) The device of claim 11, wherein said first logic is configured to determining the change in temperature comprises:

determine determining an initial temperature of the first connector of the connection at a first time;

determine determining a current temperature of the first connector of the connection at a second time; and

determine determining the difference between the initial temperature and the current temperature.

14. (Currently Amended) The device of claim 11, wherein said first logic is configured to determining the change in temperature comprises:

determine determining a temperature of the first connector of the connection by measuring a temperature of the port.

15. (Currently Amended) The device of claim 11, wherein said first logic is configured to determining the change in temperature comprises one or more of:

determine determining a temperature near a power pin of the first connector of the connection; or

determine determining a temperature near a data pin of the first connector of the connection.

16-20. (Previously Cancelled)

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed August 30, 2013. At the time of the Office Action, Claims 1-15 were pending in this Application. Pending Claims 1-15 were rejected in the Office Action. Claims 16-20 were previously cancelled. Claims 1, 3, 6-7, and 11-15 are herein amended. Claims 8-9 are cancelled. Applicants respectfully request reconsideration and allowance of all pending claims.

Objections to Drawings

The drawings were objected to for failing to show every feature of the invention as specified in the claims. Specifically, Examiner objected to Claims 8-9 and Claim 11. Claims 8-9 have been cancelled. Claim 11 has been amended to clarify that the temperature and power logic that are claims are represented in Fig. 3.

Rejections under 35 U.S.C. § 101

Claims 8-9 were rejected by the Examiner under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Applicants have cancelled Claims 8-9, thereby mooting this basis for rejection.

Rejections under 35 U.S.C. § 112

Claims 3, 6-9, 11-15 were rejected by the Examiner under 35 U.S.C. §112, second paragraph, as being indefinite and failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants amend Claims 3, 6-7, 11-15 to overcome these rejections and respectfully request full allowance of Claims 3, 6-7, 11-15 as amended.

Applicants have amended Claims 3 and 12 to clarify that the ambient temperature measured is the ambient temperature measured at the first device.

Claims 6-7 have been amended to clarify that the data pin and power pin are structural component of the connector by which the electrical connection is coupled to the first device. This is illustrated in Fig. 2B and described in ¶ 0032. Claim 15 did not suffer from the same ambiguity present in Claims 6-7 such that Examiner's basis for rejection of Claim 15 is not exactly clear to applicant.

Claims 11-15 have been amended to conform the claimed subject matter to that of apparatus claims rather than method claims.

Claims 8-9 have been cancelled.

Rejections under 35 U.S.C. § 102

Claim 1 was rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by *Gase* (US 2013/0100982).

Claims 1-3, 5-7, and 10 were rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by *Baker 1* (US 2009/0139972).

Claims 1, 4, 6-7, and 11-15 were rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by *Reusche* (US 2007/0006603).

Claims 1 and 11-13 were rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by *Baker 2* (US 2006/0238169).

Claims 1 and 6-7 were rejected by the Examiner under 35 U.S.C. §102(b) as being anticipated by *Williams* (US 6,905,362).

Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “the identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co. Ltd.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that the cited art as anticipated by the Examiner cannot anticipate the rejected Claims, because the cited art does not show all the elements of the present Claims.

The Claims have been amended to clarify the distinctions between the claimed invention and the cited prior art. The amended Claims recite the measurement of temperature changes at both ends of the electrical connection between the first device and the second device. *See e.g.* ¶ 0041. And, the amended Claims recited that the current is of the electrical connection is adjusted based on the greater of the temperature change measurements made at the first and second devices. *Id.*

Gase discloses a method for determining a change in temperature of an electrical cable used to charge a device. *Gase*, ¶ 0005. Unlike the Claims, *Gase* monitors temperature changes at a single location on the connection used to charge the device. Instead of comparing two measurements of temperature changes made at the two ends of the connection, *Gase* measures temperature at a single location and determines a change based on a “reference” measurement obtained earlier at that same location. *Gase*, Fig. 1, ¶ 0018. *Gase* does not teach or suggest any temperature measurement scheme that utilizes measurements taken at both ends of an electrical connection.

Baker I discloses a mechanism for heating an electrical connector to prevent frost from forming on the connector. *See Baker I*, ¶ 0005. *Baker I* discloses that measurements made by an “ambient temperature sensor” are used to determine when frost conditions are present. *See Baker I*, ¶ 0023. Based on the measurements of the ambient temperature sensor, *Baker I*

discloses that electrical current is heated to prevent frosting by use of a “heating element” used “to provide indirect heating of the connector.” *See Baker 1*, ¶ 0020. Unlike the Claims, *Baker 1* does not teach adjusting the current in an electrical connection between a first and second device. Instead, *Baker 1* discloses only increasing the temperature of the electrical connection by use of a separate heating element. And, unlike the Claims, *Baker 1* does disclose comparing two measurements of temperature changes made at the two ends of the electrical connection. Instead, *Baker 1* utilizes a single measurement made by an ambient temperature sensor. *Baker 1* does not teach or suggest any temperature measurement scheme that utilizes measurements taken at both ends of an electrical connection.

Reusche discloses a mechanism for adjusting the power output of an electrical outlet based on measurements made by a temperature sensor. *Reusche*, ¶ 0018. *Reusche* discloses that multiple sensors may be included in the outlet. *Reusche*, ¶ 0043. No more detail of this embodiment is provided by *Reusche*, but these multiple sensors are unlike those of the Claims because they would all be on the same side of the electrical connection, rather than having sensors measuring temperature changes on both sides of the electrical connection, as claimed. *Reusche* also discloses the use of a remote temperature sensor in addition the temperature sensor located at the outlet. *See Reusche*, ¶¶ 0050-52. However, unlike the Claims, the remote temperature sensor disclosed by *Reusche* is not located on the other end of an electrical connection through which current is being provided. Instead, the remote sensor disclosed by *Reusche* is a separate component that communicates with the outlet either via a wireless connection or via a wired connection into a “jack” on the outlet. *See Reusche*, ¶¶ 0051. Thus, *Reusche* disclose remote temperature sensor is not a component of the device receiving current from the outlet via an electrical connection. Thus, *Reusche* does not teach or suggest any temperature measurement scheme that utilizes measurements taken at both ends of an electrical connection.

Baker 2 discloses a temperature regulator that adjusts the current in an electrical connection between a “current source” and a “load device”. *Baker 2*, ¶ 0020. However, much

like *Gase*, *Baker 2* discloses only the use of temperature measurement taken a single location on the current path using a single “temperature sensitive impedance component.” *Baker 2*, ¶ 0036. And, like *Gase*, *Baker 2* discloses adjustment of temperature based on the “differential between [a] base regulation temperature” (i.e., a reference temperature) and the operating temperature measured by the impedance component. *Baker 2*, ¶, 0037. Thus, *Baker 2* does not teach or suggest any temperature measurement scheme that utilizes measurements taken at both ends of an electrical connection.

Williams discloses an apparatus for charging an electrical vehicle. See *Williams*, Abstract. *Williams* discloses the use of a “resistance temperature detector” for use in adjusting the charging current. *Williams*, 6:14-34. All disclosed temperature measurements disclosed by *Williams* are captured on the charging apparatus. *Williams* does not disclose the use of temperature sensors located on both the charging apparatus and on the electrical vehicle being charged. Thus, *Williams* does not teach or suggest any temperature measurement scheme that utilizes measurements taken at both ends of an electrical connection.

Rejections under 35 U.S.C. §103

Claims 8-9 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Baker 1*. Applicants have cancelled Claims 8-9, thereby mooted this basis for rejection.

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PATENT APPLICATION
13/109,446

11

CONCLUSION

Applicants have made an earnest effort to place this case in condition for allowance in light of the remarks set forth above. Applicants respectfully request reconsideration of the pending claims.

Applicants believe there are no fees due at this time. However, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-4871 of King & Spalding L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512-457-2025.

Respectfully submitted,
KING & SPALDING LLP
Attorney for Applicants



Andreas H. Grubert
Registration No. 59,143

Date: December 2, 2013

SEND CORRESPONDENCE TO:
KING & SPALDING L.L.P.
CUSTOMER ACCOUNT NO. **86528**
512-457-2025
512-457-2100 (fax)

22008759

Electronic Acknowledgement Receipt	
EFS ID:	17544923
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	86528
Filer:	Eric M. Grabski/Todd Rosson
Filer Authorized By:	Eric M. Grabski
Attorney Docket Number:	68354.225888
Receipt Date:	02-DEC-2013
Filing Date:	17-MAY-2011
Time Stamp:	18:53:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response_OA_225888.pdf	223978 563f04e759468656ff28ecd9da1995681135e817	yes	11

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	6
Applicant Arguments/Remarks Made in an Amendment		7	11

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 13/109,446		Filing Date 05/17/2011		☐ To be Mailed		
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)							
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A		N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =	*		X \$ =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		X \$ =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			(Column 3)				
AMENDMENT	12/02/2013		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 13	Minus	** 20	= 0	X \$80 =		0	
	Independent (37 CFR 1.16(h))		* 2	Minus	***3	= 0	X \$420 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE						0			
(Column 1)			(Column 2)			(Column 3)				
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*	Minus	**	=	X \$ =			
	Independent (37 CFR 1.16(h))		*	Minus	***	=	X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE									
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

86528 7590 02/04/2014
King & Spalding LLP
401 Congress Avenue
Suite 3200
Austin, TX 78701

EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 02/04/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	68354.225888	1420

TITLE OF INVENTION: Adjusting Delivery of Current in a Connection Based on Temperature

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	05/05/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or **Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

86528 7590 02/04/2014
King & Spalding LLP
401 Congress Avenue
Suite 3200
Austin, TX 78701

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	68354.225888	1420

TITLE OF INVENTION: Adjusting Delivery of Current in a Connection Based on Temperature

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	05/05/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
VERBITSKY, GAIL KAPLAN	2856	374-183000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	68354.225888	1420

86528	7590	02/04/2014
King & Spalding LLP 401 Congress Avenue Suite 3200 Austin, TX 78701		

EXAMINER	
VERBITSKY, GAIL KAPLAN	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 02/04/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 308 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 308 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/109,446	Applicant(s) MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/02/13.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-7 and 10-15. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	

/GAIL VERBITSKY/ Primary Examiner, Art Unit 2856	
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Notice of References Cited	Application/Control No. 13/109,446	Applicant(s)/Patent Under Reexamination MONKS ET AL.	
	Examiner GAIL VERBITSKY	Art Unit 2856	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2011/0152844	06-2011	Charles, Steven T.	606/1
*	B	US-7,944,666	05-2011	Lin et al.	361/103
*	C	US-7,255,263	08-2007	Isaacson et al.	235/144SM
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
374	170,1,163,183,141,152,208,137,185,179,45	08/19/13	gv
439	text	08/19/13	gv
702	99,130	01/23/14	gv

SEARCH NOTES		
Search Notes	Date	Examiner
inventor name searched	01/23/14	gv

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	PGPUBs as required, see printout	01/23/14	gv

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WEST Search History for Application 13109446

Creation Date: 2014012408:23

Interference Searches

Query	DB	Op.	Plur.	Thes.	Date
429/ \$.ccls.	UPAD	ADJ	YES		01-23-2014
374/ \$.ccls.	UPAD	ADJ	YES		01-23-2014
(374/ \$.ccls.) or (429/ \$.ccls.)	UPAD	ADJ	YES		01-23-2014
(374/ \$.ccls. or 429/ \$.ccls.) and (connector or plug or cable or connecting wire or jack or port or terminal)	UPAD	ADJ	YES		01-23-2014

Prior Art Searches

Query	DB	Op.	Plur.	Thes.	Date
(365/211, 212, 22, 201;374/170, 171, 172, 173, 178, 141, 1;702/99, 130, 132, 133, 134, 135, 136;327/536, 537, 513, 512)! [CCLS]	PGPB, USPT, USOC, EPAB, JPAB	ADJ	YES		08-19-2013
7724122.pn.	USPT	ADJ	YES		08-19-2013
6422744.pn.	USPT	ADJ	YES		08-20-2013
6072681.pn.	USPT	ADJ	YES		08-20-2013
374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPL, TDBD, FPRS	ADJ	YES		08-20-2013
(374/\$.ccls.) and (adapter or electrical outlet) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPL, TDBD, FPRS	ADJ	YES		08-20-2013

(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (374/\$.ccls. and (adapter or electrical outlet) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surrounding or external or environmental) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD,	ADJ	YES		08-20-2013

	FPRS				
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) and (ambient or surround\$3 or external or environment\$3) near (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) and (ambient or surround\$3 or external or environment\$3) near (temperature)) and (power near adapter)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature)) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB,	ADJ	YES		08-20-2013

	DWPI, TDBD, FPRS				
((power near adapter or connector or cable or USB) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature)) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) same (connector)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) near3 (based near2 temperature) same (connector) and (150)	PGPB, USPT, USOC,	ADJ	YES		08-20-2013

	EPAB, JPAB, DWPI, TDBD, FPRS				
(connector or adapter) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((connector or adapter) near (temperature)) and (ambient or surround\$3 or external or environment\$3) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((connector or adapter) near (temperature) and (ambient or surround\$3 or external or environment\$3) near (temperature)) and (pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(dock\$4) near (station or connector) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(dock\$4) near (station or connector) near3 (temperature) and ((control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near3 (current) near3 (temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or	PGPB,	ADJ	YES		08-20-2013

reduc\$4) near (current) and ((dock\$4) near (station or connector) near3 (temperature))	USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
(power near adapter or connector or cable or USB) near3 (temperature) same (computer or PC or laptop) same (phone or telephone or cell phone)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
20090139972	PGPB, USPT	ADJ	YES		08-20-2013
(20090139972) and (60)	PGPB, USPT	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
20060238169	PGPB, USPT	ADJ	YES		08-20-2013

(20060238169) and (temperature)	PGPB, USPT	ADJ	YES		08-20-2013
13109446	PGPB, USPT	ADJ	YES		08-20-2013
(13109446) and (first logic and second logic)	PGPB, USPT	ADJ	YES		08-20-2013
(13109446) and (logic)	PGPB, USPT	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)) and (logic or digital)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic or digital)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((power near adapter or connector or cable or USB) near3 (temperature) same (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current) and (logic or digital)) and (power pin and data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
(connector or adapter or docking station) and (power pin and data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
((connector or adapter or docking station) and (power pin and data pin)) and (temperature) and (control\$4 or adjust\$4 or regulat\$4 or decreas\$4 or reduc\$4) near (current)	PGPB, USPT, USOC, EPAB, JPAB,	ADJ	YES		08-20-2013

	DWPI, TDBD, FPRS				
6072681.pn.	USPT	ADJ	YES		08-20-2013
7797560.pn.	USPT	ADJ	YES		08-20-2013
5181026.pn.	USPT	ADJ	YES		08-20-2013
power near pin near temperature	USPT	ADJ	YES		08-20-2013
power near pin near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
data near pin near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-20-2013
CN-201438744-U.did.	EPAB	ADJ	YES		08-20-2013
20130100982,	PGPB, USPT	ADJ	YES		08-23-2013
20060238169	PGPB, USPT	ADJ	YES		08-23-2013
(20060238169) and (ambient)	PGPB, USPT	ADJ	YES		08-23-2013
(connector) near5 (power pin) near5 (data pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector or USB) near5 (power pin) near5 (data pin) near5 (temperature)	PGPB, USPT, USOC, EPAB,	ADJ	YES		08-23-2013

	JPAB, DWPI, TDBD, FPRS				
(connector or USB) same (power pin or input pin) same (data pin or output pin) same (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector or USB) same (power pin or input pin or data pin or output pin) same (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(20060238169) and (pin or node or terminal)	PGPB, USPT	ADJ	YES		08-23-2013
(pin or node or terminal) near3 (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin or node or terminal) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013

374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(374/\$.ccls.) and ((pin near temperature))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
439/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (USB) near (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (USB) near5 (temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) and (connector) near5 (temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD,	ADJ	YES		08-23-2013

	FPRS				
(439/\$.ccls. and (connector) near5 (temperature sensor)) and (pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(USB pin near temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
6905362.pn.	USPT	ADJ	YES		08-23-2013
(6905362.pn.) and (PCB or integrated circuit or chip or logic or clock or counter)	USPT	ADJ	YES		08-23-2013
20070006603	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (350)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (350) and (PCB or integrated circuit or chip or logic or clock or counter)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (140) and (PCB or integrated circuit or chip or logic or clock or counter)	PGPB, USPT	ADJ	YES		08-23-2013

(20070006603 and (140) and (PCB or integrated circuit or chip or logic or clock or counter))	PGPB, USPT	ADJ	YES		08-23-2013
20070006603	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (ambient)	PGPB, USPT	ADJ	YES		08-23-2013
(20070006603) and (ambient) and (internal)	PGPB, USPT	ADJ	YES		08-23-2013
13049716	PGPB, USPT	ADJ	YES		08-23-2013
11940244	PGPB, USPT	ADJ	YES		08-23-2013
dapter near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
adapter near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(adapter near temperature or cable near temperature or connector near temperature) and (electronic) near2 (component or device)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013

439/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls.) or (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(439/\$.ccls. or 374/\$.ccls.) and ((adapter near temperature or cable near temperature or connector near temperature) and (electronic) near2 (component or device))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
thermocouple near adaptor or thermocouple adapter	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(thermocouple near adaptor or thermocouple adapter) and (pin)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
and ((adapter near temperature or cable near temperature or connector near temperature) and (electronic) near2 (component or device)) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD,	ADJ	YES		08-23-2013

	FPRS				
((adapter near temperature or cable near temperature or connector near temperature) and (electronic) near2 (component or device)) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
electrical connector near temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-23-2013
(connector or adapter or adaptor) same (power pin and data pin) same (temperature or thermal or thermocouple or thermistor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
(connector or adapter or adaptor) and (power pin and data pin) same (temperature or thermal or thermocouple or thermistor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
374/152	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
(374/152) and (power pin and data pin)	PGPB, USPT, USOC, EPAB, JPAB,	ADJ	YES		08-26-2013

	DWPI, TDBD, FPRS				
(power pin and data pin) or (input pin and output pin) same (temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
((power pin and data pin) or (input pin and output pin) same (temperature)) and (374/152)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
data pin near5 temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
input pin near5 temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
output pin near3 temperature or input pin near3 temperature or power pin near3 temperature	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
439/\$.ccls.	PGPB, USPT, USOC,	ADJ	YES		08-26-2013

	EPAB, JPAB, DWPI, TDBD, FPRS				
(439/\$.ccls.) and (output pin near3 temperature or input pin near3 temperature or power pin near3 temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
(output pin near3 temperature or input pin near3 temperature or power pin near3 temperature) and (374/152)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
702/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
(702/\$.ccls.) and (output pin near3 temperature or input pin near3 temperature or power pin near3 temperature)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		08-26-2013
((connector or adapter or adaptor) same (power pin and data pin) same (temperature or thermal or thermocouple or thermistor)) and (data pin and power pin)	PGPB	ADJ	YES		08-26-2013
13109446	PGPB, USPT	ADJ	YES		01-23-2014
(13109446) and (first device and second device)	PGPB, USPT	ADJ	YES		01-23-2014

20130100982	PGPB, USPT	ADJ	YES		01-23-2014
20090139972	PGPB, USPT	ADJ	YES		01-23-2014
20070006603	PGPB, USPT	ADJ	YES		01-23-2014
(13109446) and (temperature)	PGPB, USPT	ADJ	YES		01-23-2014
(13109446) and (temperature) same (first port) same (second port)	PGPB, USPT	ADJ	YES		01-23-2014
(13109446) and (port)	PGPB, USPT	ADJ	YES		01-23-2014
electrical connector	USPT	ADJ	YES		01-23-2014
439/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(439/\$.ccls.) and (temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(439/\$.ccls. and (temperature sensor)) and (first near2 temperature sensor and second near2 temperature sensor)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(374/100, 141, 170, 1, 163, 183, 185, 152, 208, 137, 110, 115, 112)! [CCLS]	PGPB, USPT, USOC, EPAB, JPAB	ADJ	YES		01-23-2014
		ADJ	YES		01-23-2014

((374/100, 141, 170, 1, 163, 183, 185, 152, 208, 137, 110, 115, 112):[CCLS]) and (connect\$4) near4 (components or devices or apparatus\$2)	PGPB, USPT, USOC, EPAB, JPAB				
(temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction)) or ((temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe)) same (connector or plug or cable or connecting wire)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe)) near3 (connector or plug or cable or connecting wire or jack or port or terminal)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
429/\$.ccls.	PGPB,	ADJ	YES		01-23-2014

	USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS				
374/\$.ccls.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(374/\$.ccls.) or (429/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(374/\$.ccls. or 429/\$.ccls.) and ((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe) near3 (connector or plug or cable or connecting wire or jack or port or terminal))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe)) near1 (connector or plug or cable or connecting wire or jack or port or terminal)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe) near1 (connector or plug or cable or connecting wire or jack or port or terminal)) and (374/\$.ccls. or 429/\$.ccls. and (thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014

(temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe) near3 (connector or plug or cable or connecting wire or jack or port or terminal))					
temperature near sens\$4 near cable	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(temperature near sens\$4 near cable) and (374/\$.ccls.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe)) near2 (docking station or docking connector)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	ADJ	YES		01-23-2014
(702/130, 132, 133, 134, 135, 136, 99;374/179, 185, 163)! [CCLS]	PGPB, USPT, USOC, EPAB, JPAB	ADJ	YES		01-23-2014
((702/130, 132, 133, 134, 135, 136, 99;374/179, 185, 163)! [CCLS]) and ((thermocouple or thermistor or RTD or thermometer or thermal diode or thermal junction) or (temperature or thermal or heat) near (sensor or detector or transducer or gauge or probe) near3 (connector or plug or cable or connecting wire or jack or port or terminal))	PGPB, USPT, USOC, EPAB, JPAB	ADJ	YES		01-23-2014
(powercord or power cord or USB or universal serial bus or electrical outlet) near2 (temperature or thermal\$2)	PGPB, USPT, USOC, EPAB, JPAB, DWPI,	ADJ	YES		01-24-2014

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CONFIRMATION NO. 1420

BIB (Rev. 05/07)

Issue Classification 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

CPC		
Symbol	Type	Version

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	13	
/GAIL VERBITSKY/ Primary Examiner.Art Unit 2856	01/24/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	11	1A,2A

Issue Classification 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION										
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED					
374		141				G	0	1	K	1 / 00 (2006.01.01)						
CROSS REFERENCE(S)						G	0	1	K	7 / 00 (2006.01.01)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)															
374	163	183														
702	130															

NONE		Total Claims Allowed:	
		13	
(Assistant Examiner)	(Date)		
/GAIL VERBITSKY/ Primary Examiner.Art Unit 2856	01/24/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	11	1A,2A

Issue Classification 	Application/Control No. 13109446	Applicant(s)/Patent Under Reexamination MONKS ET AL.
	Examiner GAIL VERBITSKY	Art Unit 2856

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1														
2	2														
3	3														
4	4														
5	5														
6	6														
7	7														
	8														
	9														
8	10														
9	11														
10	12														
11	13														
12	14														
13	15														

NONE		Total Claims Allowed:	
		13	
(Assistant Examiner)	(Date)		
/GAIL VERBITSKY/ Primary Examiner.Art Unit 2856	01/24/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	11	1A,2A

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
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Todd Rosson	(Depositor's name)
/Todd Rosson/	(Signature)
April 24, 2014	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	05/17/2011	Morgan H. Monks	68354.225888	1420

TITLE OF INVENTION: Adjusting Delivery of Current in a Connection Based on Temperature

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	05/05/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
VERBITSKY, GAIL KAPLAN	2856	374-183000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
 (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 King & Spalding L.L.P.
 (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

SMSC HOLDINGS S.A.R.L. LUXEMBOURG, LUXEMBOURG

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee
☐ Publication Fee (No small entity discount permitted)
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4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 50-4871 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Andreas H. Grubert/

Date April 24, 2014

Typed or printed name Andreas H. Grubert

Registration No. 59,143

Electronic Patent Application Fee Transmittal				
Application Number:		13109446		
Filing Date:		17-May-2011		
Title of Invention:		Adjusting Delivery of Current in a Connection Based on Temperature		
First Named Inventor/Applicant Name:		Morgan H. Monks		
Filer:		Eric M. Grabski/Todd Rosson		
Attorney Docket Number:		68354.225888		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt	
EFS ID:	18850397
Application Number:	13109446
International Application Number:	
Confirmation Number:	1420
Title of Invention:	Adjusting Delivery of Current in a Connection Based on Temperature
First Named Inventor/Applicant Name:	Morgan H. Monks
Customer Number:	86528
Filer:	Eric M. Grabski/Todd Rosson
Filer Authorized By:	Eric M. Grabski
Attorney Docket Number:	68354.225888
Receipt Date:	24-APR-2014
Filing Date:	17-MAY-2011
Time Stamp:	14:49:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 960
RAM confirmation Number	997
Deposit Account	504871
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Fee_225888.PDF	81487	no	1
			8285747518faac8b7afd5ca4ecc3c1b1cacdb430		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30367	no	2
			ef0ba3a0a673089bf025f3a8db08eedc1f424db		

Warnings:

Information:

Total Files Size (in bytes):	111854
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/109,446	06/03/2014	8740456	68354.225888	1420

86528 7590 05/14/2014
King & Spalding LLP
401 Congress Avenue
Suite 3200
Austin, TX 78701

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 327 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Morgan H. Monks, Tempe, AZ;
Kenneth W. Gay, Tucson, AZ;
Timothy J. Knowlton, Benson, AZ;

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