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FOR : **LIGHTING SYSTEM AND CONTROL THEREOF**

Enclosed are:

- ☒ 28 pages of specification (including Abstract page)
- ☒ 5 sheets of drawings
- ☒ 33 total pages
- ☒ Unexecuted Declaration
- ☒ Application Data Sheet. See 37 CFR 1.76.
- ☒ Applicant is entitled to Small Entity Status under 37 CFR 1.9 and 37 CFR 1.27

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Respectfully,

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APPLICATION FOR PATENT

Inventors: Roderick Allen GAMMONS, Andrew FRANCIS and
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Title: LIGHTING SYSTEM AND CONTROL THEREOF

Related Applications

10 This application claims the benefit of priority of U.S. Provisional Patent Application No. 62/319,809 filed on April 8, 2016, and United Kingdom Patent Application No. 1606907.2 filed on April 20, 2016. The contents of the above applications are incorporated herein by reference in their entirety.

15 Field and Background of invention

This invention relates to a lighting system, and the control of a lighting system, and the simulation of lighting special effects, and in particular to a lighting system for videography, broadcasting and cinematography.

In the film, broadcast and TV industry a lighting controller called a 'flicker box'
20 which is independent of a lighting device, is used to produce flickering light effects to mimic flickering light for example from a fire place, candle, electrical spark or lightning for on set television/broadcast production use.

The flicker effect provided by these devices is typically created using the analogue circuitry modulators contained within the 'flicker box', controlled
25 manually by dials and levers. Use of a flicker box is typically a complex, costly and time consuming process that requires the setup, connection and control of multiple pieces of hardware typically including external Digital Multiplex (DMX) and power distribution devices, as well as typically requiring a physical wired connection to the 'hot' light source desired to be controlled.

30 Typically such 'flicker boxes' require specialist knowledge and understanding to operate and remain inaccessible or 'out of reach' to lower budget television

productions.

Furthermore, many 'flicker boxes' are incompatible with LED light sources, and such systems require the use of 'hot' incandescent light sources which are energy inefficient and also pose health and safety risks to those working on set, typically therefore requiring qualified lighting gaffers and operators.

An improved solution is desired.

Summary of the Invention

According to one aspect of the invention, there is provided a method for controlling a lighting device to produce user customisable lighting effect, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect.

According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.

Preferably, the parameters of the effects including but not limited to speed, duration, power/brightness and colour temperature can be controlled locally via a simple user interface on the light itself.

Preferably, the start/stop "triggering" of the effects can be controlled locally via a simple user interface on the light itself, remotely via WiFi, Bluetooth, Zigbee

or wireless DMX from a smart phone or tablet, or from a wired 3.5mm minijack remote trigger, or a wired DMX trigger.

Preferably, the parameters of the effects can be controlled remotely via WiFi,
5 Bluetooth, Zigbee or wireless DMX from a smart phone or tablet.

Preferably, the parameters of the effects can be controlled Via a serial communications interface (eg. RS232, USB or DMX) from a PC running custom lighting control software.

10

Preferably, the light source containing in built special effects is in the form of an LED lighting fixture. Alternatively it is in the form of or 'hot' light incandescent fixture.

15 Preferably, multiple lights may be connected together via wired DMX, or via WiFi, Bluetooth, Zigbee or wireless DMX to produce a synchronised large area special effect.

Preferably, when multiple lights are connected together to produce a
20 synchronized large area special effect, the inter-relationship of those connected lights is customizable so as to allow all of the connected devices to fire at the same time if desired, or, to enable a staggered effect to take place over an extended time duration and with customizable power intensity, in order to create the effect that a static object is moving as the lights "chase"
25 around a scene.

Preferably the method further comprises receiving said at least one simulation parameter for characterising a lighting effect.

30 So as to recreate realistic effects, preferably the at least one simulation parameter for characterising a lighting effect is random; preferably the at least one simulation parameter for characterising a lighting effect is random within

predefined boundaries.

Preferably, the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters. Preferably, the random
5 simulation parameter is in a range determined in dependence on one or more user-selectable simulation parameters.

Preferably, the simulation parameter is a colour or colour temperature. Preferably, the colour or colour temperature varies in dependence on a
10 brightness lighting value.

Preferably the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a
15 brightness fluctuation period; and a colour fluctuation period.

Preferably, the method further comprises receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.
20

Preferably, the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; a fluctuation period; and a trigger.

Preferably, the simulation parameter comprises a camera recording frequency, frame rate, or shutter speed.
25

Preferably, the system includes rolling shutter compensation enabling the minimum light pulse width to be adjusted to suit the shutter speed or frame rate of the user's camera in order to prevent 'strobing' due to the light effect being out of phase/sync with the frame rate of the camera, ensuring that each
30 frame captured by the camera is fully illuminated.

Preferably the method further comprises receiving a recording frequency,

frame rate, or shutter speed of a camera and calculating said time varying lighting value based on said recording frequency, frame rate or shutter speed. Preferably, wherein the time varying lighting value is calculated so as to vary at a slower rate than said camera recording frequency, frame rate, or shutter speed. More preferably wherein the minimum pulse width of said time varying lighting value is longer than said recording frequency, frame rate or shutter speed.

Preferably, a light source can be designated as a 'master', and have connected 'slave' light sources which fire in synchronization with the 'master', or in a customizable sequence, with regard duration, power and/or colour temperature.

Preferably, the 'slave' light sources are connected to the 'master' light source via wired DMX, wireless DMX, wifi, Bluetooth, or RS232 sync cable.

Preferably, the light contained in built special effects, can be powered both from mains power, and/or via its own internal battery power source, providing greater flexibility and portability for location shooting.

Preferably, the light source is capable of producing customisable effects including, but not limited to: Fire, Lightning, Police light, TV simulation, Neon Flickering sign, Muzzle (gunshot), Welding, Spark/Short Circuit, Scan (e.g. fingerprint scanner), Papparazi flashes, Propeller, (Nuclear) Explosion and Wormhole.

Preferably, the simulation iterates through repeated cycles of receiving at least one random simulation parameter and simulating the lighting effect.

Preferably, the lighting effect is designed to mimic at least one or more of: fire flickering; police light; television; lightning flashing; electrical sparking; and fireworks.

Preferably, the lighting value comprises brightness and/or colour data.

Preferably, the method further comprises converting brightness and/or colour data into lighting signals and outputting the lighting signal data.

- 5 Preferably, the method further comprises controlling one or more light in dependence on the output. Preferably, the controlling comprises changing the brightness and/or colour of the light.

Preferably, the method further comprises receiving a definition of a trigger event; said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect.

- 10 Preferably, the method further comprises detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.

Preferably, the method further comprises storing the calculated lighting value.

- 15 Preferably, the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

Preferably, the method further comprises controlling a plurality of lights in dependence on the output. Preferably, the said plurality of lights output different lighting values so as to simulate a lighting effect. Preferably, the method further comprises the output of said plurality of lights is offset in time.

- 20 Preferably, the output of said plurality of lights overlap with one-another so as to simulate a moving light source.

Preferably, one light is a master light and the others of said plurality of lights are slaves.

According to another aspect of the invention there is provided a computing device adapted to perform a method as described herein.

According to another aspect of the invention there is provided a controller for a lighting device comprising the computing device as described herein.

- 5 According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over
10 time.

Preferably, the controller further comprises a random number source adapted to provide a random number for producing a random simulation parameter for characterising a lighting effect.

- 15 Preferably, the controller is adapted to control a plurality of lighting devices in dependence on the time varying lighting value.

Preferably, the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.

Preferably, the controller comprises an input interface adapted to receive a user input.

- 20 Preferably, the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.

Preferably, the controller further comprises a converter adapted to convert brightness and/or colour data from the simulator into lighting signals for output by the output.

5 According to another aspect of the invention there is provided a controller adapted to perform a method as described herein.

According to another aspect of the invention there is provided a lighting system comprising a controller as described herein and at least one lighting device.

10 Preferably, said controller and said lighting device are integrated in a combined unit.

Preferably, the lighting system further comprises a further lighting device separate from said controller.

Preferably, the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

15 The invention extends to any novel aspects or features described and/or illustrated herein.

Further features of the invention are characterised by the other independent and dependent claims

20 Any feature in one aspect of the invention may be applied to other aspects of the invention, in any appropriate combination. In particular, method aspects may be applied to apparatus aspects, and vice versa.

Furthermore, features implemented in hardware may be implemented in software, and vice versa. Any reference to software and hardware features herein should be construed accordingly.

Any apparatus feature as described herein may also be provided as a method
5 feature, and vice versa. As used herein, means plus function features may be expressed alternatively in terms of their corresponding structure, such as a suitably programmed processor and associated memory.

It should also be appreciated that particular combinations of the various features described and defined in any aspects of the invention can be
10 implemented and/or supplied and/or used independently.

The invention also provides a computer program and a computer program product comprising software code adapted, when executed on a data processing apparatus, to perform any of the methods described herein, including any or all of their component steps.

15 The invention also provides a computer program and a computer program product comprising software code which, when executed on a data processing apparatus, comprises any of the apparatus features described herein.

The invention also provides a computer program and a computer program product having an operating system which supports a computer program for
20 carrying out any of the methods described herein and/or for embodying any of the apparatus features described herein.

The invention also provides a computer readable medium having stored thereon the computer program as aforesaid.

The invention also provides a signal carrying the computer program as
25 aforesaid, and a method of transmitting such a signal.

The invention extends to methods and/or apparatus substantially as herein described with reference to the accompanying drawings.

Brief Description of the Several Views of the Drawings

The invention will now be described by way of example, with references to the
5 accompanying drawings in which:

- Figure 1 is a schematic diagram of a 'flickerbox' lighting system;
Figure 2 is a schematic diagram of a further lighting system;
Figure 3 is a flow diagram of a method for adjusting a lighting device;
Figure 4 is a schematic diagram of a further lighting system;
10 Figure 5 shows a time/brightness plot for a system of linked lights;
Figure 6 is a graphic user interface for user input of simulation parameters;
and
Figure 7 is a graph of light brightness over time.

Description of Specific Embodiments of the Invention

- 15 In the present description the term 'camera' may be understood to mean a camera (such as a digital camera, or 'film' camera) operable to record moving images. The lighting system may therefore be for a lighting system for videography, broadcasting, cinematography, studio filming and/or location filming.
- 20 Figure 1 shows a schematic diagram of a 'flickerbox' lighting control system. The system comprises an analogue effect simulator, 300, a DMX distribution hub 302, an AC power generator 306, an AC power distribution module 302 and a plurality of incandescent lights 102. The analogue effect simulator 300 simulates a lighting effect such as fire, or electrical sparking based on various
25 parameters 104. The analogue effect simulator 300 produces data 106 such as brightness parameters that vary over time for producing the desired lighting effect. The data 106 is used to modulate the light 102 such that the desired lighting effect is produced. The user has very limited ability to alter many of the parameters to adapt the lighting effect as desired

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the lamp device is an array of LEDs, preferably of differing colours. This arrangement does not require the DMX distribution hub 302, power elements 304, 306 as described above, and is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp 120 for performing calculations. A control panel is provided at a back panel of the light 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an effect. In a variant a simple digital interface is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the light 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation parameters and transmitting that data to the light 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

Having the ability to control the special FX from the light source, which in itself is a bi-colour LED Fixture also entirely eliminates that aspect of the process, the user can simply adjust the colour temperature from the back of the unit, with a visible numeric display of that number eliminating significant time from the process.

This is also a significant limiting factor in the creation of effects such as fire which typically burn blue on hotter peaks. It would be possible using an LED light source containing in built special effects to reproduce both the warm “orange” light output near the tungsten end of the scale, whilst also adding a
5 “colour swing blue” on the peaks from the same light source, something that would not be possible using a legacy system.

Examples of user defined parameters that the light containing in built special effects can customize in simulating a lighting effect are now described in more detail:

- 10 ♦ **Brightness:** The peak luminance of the effect from 1% to 100% of the lamp’s available luminance output.
- ♦ **Colour:** For multicolour effects this sets the range of colours used over the spectrum of red, green and blue. For single colour effects it sets the colour temperature of the light.
- 15 ♦ **Trigger:** To start the effect running. For example, a manual trigger may be selected for manually triggering the start of a lightning burst, TV screen, or other effect.
- ♦ **Frequency:** typically from 0.5Hz to 50Hz. This sets an average period between light peaks – e.g. a roaring fire may have a higher frequency than
20 a single candle flame.
- ♦ **Depth:** typically from 0% to 90%. This sets a base level of illumination of the effect. For example a fire may have a base level of 50% illumination superimposed on a level varying from 50% to 100% to simulate flickering flames.
- 25 ♦ **Rolling Shutter Compensation:** Film and TV cameras typically operate at frequencies between 24Hz and 60Hz. In order to provide consistent illumination during each camera frame, short time-period (e.g. stroboscopic) lighting effects should have a minimum pulse width which lasts at least one camera frame period. This parameter can be adjusted to

suit the camera and frame rate.

- ◆ **'Colour Swing Blue'** simulates the effect of flame going up the chimney, 'peaks' within the fire effect can be switched to transition between yellow and blue, to match the colour of a flame, creating a more dynamic and 3D fire effect. The brighter the 'spark' the more blue the light output is. The colour of the output is therefore dependent on the brightness of the output (or vice versa).

Further examples of lighting effects are for example to mimic television screen flicker, cinema illumination, illumination in a vehicle passing through a tunnel, or any situation where the lighting varies over time in a characteristic manner. A simulation can be defined that represents the characteristics of the lighting effect, and suitable random parameters can be used to introduce a realistic variance in the lighting effect.

In a variant the simulator operates with pre-defined parameters and random numbers, without further user input of parameters. This can still provide a realistic lighting effect, albeit with less adaptation to the user's preferences.

Figure 3 illustrates a simple example of a method for simulating a lighting effect. In a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters. Where a random parameter is algorithmically generated it is only pseudo-random, but for the purposes of the simulation a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter. In a second step S2 a simulation is performed based on a simulation model and the received parameters. The nature of the simulation model can vary greatly, depending on the lighting effect that is desired and the sophistication of the desired simulation. The simulation calculates how the lighting changes over time in order to produce the desired lighting effect. Following simulation in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, in order to produce the desired lighting effect.

Figure 4 schematically shows an example showing a master light source 102 built into a lighting control unit 130 and a 'slave' light source 102-1 separate from the lighting control unit. The lighting effect simulator 100 creates data 106 characterising a lighting effect and controls the master light 102 as described above. The data 106 is transmitted to the slave light 102-1 via (for example) a serial communication interface (e.g. RS232, USB or DMX) or by wireless transmission (e.g. Wi-Fi®, Bluetooth® Zigbee®, or via a mobile communication network utilising protocols such as GSM (Groupe Special Mobile) 3GPP (3rd Generation Partnership), or 4G LTE (Long term evolution)).

5 The additional 'slave' light source 102-1 thereby allows the production of a lighting effect with more than one light device but without duplication of controllers 130. Such additional light sources can for example increase the area of illumination or increase the power of the lighting effect.

The use of multiple lights 102 affords additional options for producing advanced effects. Figure 5 shows a time/brightness plot of a 'chase' effect. In this example, three lights produce outputs 200, 202 and 204 separated in time. In such a way, an effect of a light source (such as a passing car) can be replicated. The relative timing of the light sources can be adjusted depending on the relative location of the sources, and the speed of the effect to be replicated. It should be noted that the 'fade up' and 'fade down' portions of each light output 200, 202, 204 overlap with one-another to more accurately replicate the effect of a moving object, as opposed to a element jumping from one location to another.

15 20

Related effects utilising similar timing controls are be 'paparazzi' of multiple flashes coming from different locations, or a 'propeller' simulating a light source being obscured by a rotating propeller. The use of a single controller 130 may be used to control all of the lights 102 so as to ensure an appropriate delay (or absence of delay).

25

Figure 6 shows an example of a graphic user interface 800 for user input of simulation parameters. In the illustrated example the lighting effect to be simulated is a fire effect. The user can select a fire activity (with a slider

30

positioned from 'low' to 'high') to set a frequency parameter as described above; a fire colour; a peak brightness; a baseline brightness to set a depth parameter as described above; and a camera frequency. A wide range of further parameters can be provided for user input, for example if the fire activity, brightness and/or colour is to change over time (to mimic a fire dying
5 down and reducing to embers or to mimic addition of fuel to a fire). The user may also be provided with an option of superimposing different types of lighting effects, for example to mimic candlelight during a lightning storm.

In one example, the rolling shutter compensation controls a minimum light
10 pulse to match the shutter speed or frame rate of the user's camera (camera frequency) to ensure even illumination across the frame and eliminate possible strobing. Therefore, the duration of the light pulse is longer than one period of the camera's recording frequency, or in other words, the lighting value varies at a lower frequency than the frequency of the camera.

15 The lighting effect simulator 100 typically provides data 106 in the form of brightness and/or colour values that vary over time. In order to cause the light 102 to produce the desired effect a lighting data converter may convert the data 106 from the lighting effect simulator 100 into a suitable signal for a particular light 102. For example for a light emitting diode (LED) array lighting
20 the data conversion occurs at an LED lamp control logic that produces and supplies a separate pulse-width-modulation output for each LED colour to an LED drive circuit. A lighting data converter may be provided separately from the lighting effect simulator 100 and the light 102 or it may be integrated with one or the other or both.

25 The light 102 in one example comprises an array of different types of LEDs, preferably red, green, blue and white LEDs, or a bi colour fixture comprising warm typically 2800K LEDs and 'cool' 7000K LEDs which blend together to create a range of colour from 3200-6300K. The array may be a panel, flood light, spot light, a cluster or any other arrangement of LEDs. This provides the
30 ability for the lighting to produce light of any visible colour by varying the relative intensities of the different LEDs. The lighting may alternatively be a

filament (incandescent), halogen or other type of lighting.

The simulation may be performed on the fly, with lighting data values output from the simulator 100 to the light 102 in near-real time, or the simulation may be performed in advance and the lighting data values output for storage and
5 later use to enable quick reproduction on set or location.

The lighting control system can reduce the number of devices required to provide lighting effects, especially where the lighting effect simulator is integrated in a light. This can significantly reduce equipment costs and time required to set up equipment. The system is also more portable allowing
10 power from its on internal power source or battery instead of requiring an external power generator or mains powered solution. The lighting control system can be used for studio and location filming lighting systems, and more generally for videography, broadcast and/or cinematography.

15 A non-exhaustive list of example effects that may be produced by the system are as follows:

- Strobe - The strobe range in one example is from 1hz up to 4hz. The last used strobe parameters are stored in non-volatile memory (which applies to any effect described herein). A user may rotate a knob on
20 the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras.
- Lightning – this effect simulates lightning in a random manner, but a user may control the speed at which the lighting bursts re-occur. This effect is most realistic if the brightness is set to 100% and colour
25 temperature is set at 6000K. A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras. The duration of the lightning flashes in one example is 20ms. The lightning strikes in one example come in bursts of between 2 and 8 random length pulses.
- Throb - Throb is a regular smoothly pulsing light
30
- Weld - this effect replicates a welding arc.

- Colour cycle – This is a regular smoothly pulsing light which fades between the tungsten and blue LEDs
- Fire – this effect replicates a fire with ‘dancing flames’ as is described in more detail below.
- 5 • Police – This effect is an emulation of an emergency services light, and may be most realistic in blue light.
- Television – This effect is an emulation of someone watching TV.

It should be appreciated that due to the nature of the light 102, the effects
10 may be customised by a user, for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user-customised effects may be stored and recalled at a later time. The effects may be triggered on cue (for example from a director) by sending a signal over a
15 wired remote trigger or wireless device.

It should also be appreciated that multiple effects may be emulated simultaneously, for example, fire and lightning may be present simultaneously using a single lighting unit.

An example of a simulation for producing a fire effect is now described in
20 more detail.

Fire is simulated as a series of ‘sparks’. Each spark has the following random parameters:

- ♦ **Interval:** New sparks are generated at an interval which varies randomly between a defined maximum and minimum interval.
- 25 ♦ **Peak:** The peak luminance of each spark varies randomly between a defined minimum and maximum.
- ♦ **Ramp-up time:** The luminance of each spark ramps up to the peak at a randomly generated rate.

- ♦ **Fade-down time:** The fade from the peak is linked to the ramp-up time but is much slower – simulating the gradual decline in luminance of a burning ember.
- 5 If the interval is short with respect to the ramp-up and fade-down time, then sparks can overlap in time – in which case the brightest spark determines the lamp luminance.

The lighting effect simulator typically cycles round a loop calculating new lamp brightness and colour values. Alternatively the calculation can be triggered by
10 an interrupt generated by a timer. The calculation is typically performed every 250µs.

The duration of each spark can be controlled by choosing whether or not to perform a new brightness calculation based on the value of a counter which is decremented every time an interrupt occurs. When the counter reaches zero it
15 is either reset to its previous start value or, for a new spark, a new count start value is randomly generated. In this way each spark has a different speed, duration and peak – simulating the look of a real flame.

Generating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of
20 a real flame and replaying it at different speeds.

An example sequence of instructions for the simulation is as follows:

At the end of a spark up and down period:

- Reset duration for next spark to between 2.5s to 5s
- Generate new brightness targets for the next spark between 12.5% and
25 100% of current maximum brightness setting.
- Offset the random brightness targets by the requested brightness floor value

- Set the new peak brightness target for the new spark
- Ensure the new targets are greater than the existing faded brightness value to prevent downward jumps
- Set the fade direction to UP

5

Start new animation frame:

- Calculate brightness fade step sizes:
 - Fade up fast, progressively larger fade step sizes
 - Change fade direction at peak
 - Fade down slow, progressively smaller fade step sizes
- Set the frame rate for the new spark to a random value
 - prevent the curtailment of a long fade by a new short pulse: if the faded brightness is still > 25% of max then don't allow new FramePeriod to be less than old.

15

Figure 7 shows an example of the brightness varying over time produced according to a simulation as described above. Two peaks can be seen, one reaching 100% intensity and the other reaching 91% intensity. The first peak fades up from 10% to 100% in 0.85 seconds, and back down to 56% in 0.75 seconds. The second peak fades up from 56% to 91% in 0.33 seconds, and back down to 60% in 1.07 seconds. The fade up starts shallower and becomes steeper as it progresses. The fade down starts steep and becomes shallower as it progresses. A toggle switch is also shown which toggles between 'Colour Swing Blue' and 'Monochrome'. Colour Swing Blue represents modifying the colour of peaks in brightness so as to replicate the increased temperature of sparks in a fire, Monochrome may be used when (for example) filming in black and white, or when altering colour of the effect may have deleterious effects on other elements of the scene (for example, rendering text difficult to read).

- 30 An example of a simulation for producing a lightning effect is now described in more detail. Lightning is simulated as a sequence of 'bursts' or groups of flashes. The number of flashes in each burst, the delay between bursts, the

- delay between each flash within the burst, and the amplitude of each flash are all set randomly within certain boundaries. The minimum 'on' time period of each flash can be set by the user to ensure full illumination of the camera frame. The lamp can also be set into a mode where a burst of flashes is triggered by the push of a button. In this way the effect can be triggered on demand by the user.

An example sequence of instructions for the simulation of lightning, with a series of bursts of flashes, is as follows:

- At the end of a burst of flashes recalculate the parameters for the next burst:
- 10 • Reset the number of flashes in a burst to a random number between 2 and 10
 - Reset the period to next burst to a random number between 2.5 and 5s.
- 15 Calculate parameters for each flash in a burst of flashes:
- Randomly modulate brightness of each flash slightly
 - Reset the time to next flash to a random number between 8ms and 220ms
 - Reset the 'on' flash duration to a random number between 8ms and 120ms
 - 20 ○ ensure a minimum off-period is maintained between flashes
 - For the final flash set the duration to a random number between 10ms and 113ms

- The lighting system, lighting effect simulator, lighting controller, lighting device, computing device, and/or computer program product may have one or more of the following features:
- 25 • built-in capability to generate a range of cinematic special effects by modulating the colour and brightness of the light output.

- the parameters of the effects can be controlled via a simple user interface on the lamp itself.
 - the parameters of the effects can be controlled remotely via WiFi or DMX from a smart phone or tablet.
- 5 • networked with other lights to produce a synchronised large area special effect.
- minimum light pulse width can be adjusted to suit the shutter speed or frame rate of the user's camera to ensure even illumination across the frame.
- 10 Various other modifications will be apparent to those skilled in the art. It will be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention. For example, it should be appreciated that the effect simulator 100 or the computing device 130 may be separate from any light 102, and
- 15 connectable to lights 102, by either a wired or wireless connection.

The lighting effect simulator 100 may be provided by way of a suitably adapted computing device 120 or 130 such as a PC, tablet or smart phone, with suitable software for user input of simulation parameters. The computing device 120 or 130 may be a suitably adapted light controller device with

20 suitable controls for user input of simulation parameters

Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.

WHAT IS CLAIMED IS:

1. A method for controlling a lighting device to produce user customisable lighting effects, the method comprising:
 - calculating a time varying lighting value based on at least one simulation parameter; and
 - outputting said time varying lighting value thereby to simulate a lighting effect.
2. A method according to Claim 1 further comprising receiving said at least one simulation parameter for characterising a lighting effect.
3. A method according to Claim 1 or 2 wherein said at least one simulation parameter for characterising a lighting effect is random.
4. A method according to Claim 3 wherein said at least one simulation parameter for characterising a lighting effect is random within predefined boundaries.
5. A method according to Claim 3 or 4, wherein the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters.
6. A method according to Claim 5, wherein the random simulation parameter is in a range determined in dependence on one or more user-selectable simulation parameters.
7. A method according to any of the preceding claims, wherein the simulation parameter is a colour or colour temperature.
8. A method according to Claim 7 wherein the colour or colour temperature varies in dependence on a brightness lighting value.
9. A method according to any of the preceding claims, wherein the simulation parameter is related to one or more of: a rate of increase of

brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.

10. A method according to any of Claims 2 to 9 further comprising receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.
11. A method according to any preceding claim, wherein the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; a fluctuation period; and a trigger.
12. A method according to any preceding claim, wherein the simulation parameter comprises a camera recording frequency, frame rate, or shutter speed.
13. A method according to any preceding claim further comprising receiving a recording frequency, frame rate, or shutter speed of a camera and calculating said time varying lighting value based on said recording frequency, frame rate or shutter speed.
14. A method according to Claim 12 or 13 wherein the time varying lighting value is calculated so as to vary at a slower rate than said camera recording frequency, frame rate, or shutter speed.
15. A method according to Claim 14 wherein the minimum pulse width of said time varying lighting value is longer than said recording frequency, frame rate or shutter speed.
16. A method according to any of the preceding claims, wherein the simulation iterates through repeated cycles of receiving at least one random simulation parameter and simulating the lighting effect.
17. A method according to any of the preceding claims, wherein the lighting effect is designed to mimic at least one or more of: fire flickering; police light; television; lightning flashing; electrical sparking; and fireworks.

18. A method according to any of the preceding claims, wherein the lighting value comprises brightness and/or colour data.
19. A method according to Claim 18, further comprising converting brightness and/or colour data into lighting signals and outputting the lighting signal data.
20. A method according to any of the preceding claims, further comprising controlling one or more light in dependence on the output.
21. A method according to Claim 20, wherein the controlling comprises changing the brightness and/or colour of the light.
22. A method according to any of the preceding claims, further comprising receiving a definition of a trigger event, said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect.
23. A method according to Claim 22 further comprising detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.
24. A method according to any of the preceding claims, further comprising storing the calculated lighting value.
25. A method according to any of the preceding claims, wherein the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.
26. A method according to any preceding claim comprising controlling a plurality of lights in dependence on the output.
27. A method according to claim 26 wherein the said plurality of lights output different lighting values so as to simulate a lighting effect.
28. A method according to claim 27 wherein the output of said plurality of lights is offset in time.

29. A method according to claim 28 wherein the output of said plurality of lights overlap with one-another so as to simulate a moving light source.
30. A method according to any of claims 26 to 29 wherein one light is a master light and the others of said plurality of lights are slaves.
31. A computing device adapted to perform a method according to any one of the preceding claims.
32. A controller for a lighting device comprising a computing device according to Claim 31.
33. A controller for controlling a lighting device to produce a lighting effect, the controller comprising:
 - a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and
 - an output adapted to control a lighting device according to the determined variation of lighting over time.
34. A controller according to Claim 30 or 31 further comprising a random number source adapted to provide a random number for producing a random simulation parameter for characterising a lighting effect.
35. A controller according to any of Claims 32 to 34, wherein the controller is adapted to control a plurality of lighting devices in dependence on the time varying lighting value.
36. A controller according to any one of Claims 32 to 35, wherein the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.
37. A controller according to any one of Claims 32 to 36, wherein the controller comprises an input interface adapted to receive a user input.
38. A controller according to Claim 37, wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.

39. A controller according to any one of Claims 32 to 38, further comprising a converter adapted to convert brightness and/or colour data from the simulator into lighting signals for output by the output.
40. A controller according to any one of Claims 32 to 39, adapted to perform a method according to any one of Claims 1 to 30.
41. A lighting system comprising a controller according to any one of Claims 32 to 40 and at least one lighting device.
42. A lighting system according to Claim 41 wherein said controller and said lighting device are integrated in a combined unit.
43. A lighting system according to Claim 42 further comprising a further lighting device separate from said controller.
44. A lighting system according to any of Claims 41 to 43 wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.
45. A lighting device comprising a controller according to any one of Claims 32 to 40.
46. A lighting device according to Claim 45 wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.
47. A computer program product for controlling a lighting device to produce a lighting effect, the computer program product adapted to perform, when executed, the steps of:
 - calculating a time varying lighting value based on at least one simulation parameter; and
 - outputting said time varying lighting value thereby to simulate a lighting effect.

- 48. A computer program product according to Claim 47, adapted to perform, when executed, the steps of a method according to any one of Claims 2 to 30.
- 49. A method substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 50. A computing device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 51. A controller for a lighting device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 52. A lighting system substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 53. A lighting device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 54. A computer program product substantially as herein described and/or as illustrated with reference to the accompanying figures.

Abstract

The present invention relates to a method for controlling a lighting device to produce user customisable lighting effects, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect. The invention also relates to a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time. In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.

Doc Code: Oath

PTO/AIA/08 (06-12)

Document Description: Oath or declaration filed

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☒ Declaration
Submitted
With Initial
Filing

☐ Declaration
Submitted After initial
Filing (surcharge
(37 CFR 1.16(f))
required

Attorney Docket
Number

69726

First Named Inventor

Roderick Allen GAMMONS

COMPLETE IF KNOWN

Application Number

Filing Date

Art Unit

Examiners Name

LIGHTING SYSTEM AND CONTROL THEREOF

(Title of the invention)

As below named inventor, I hereby declare that:

This declaration is directed to:

☒ The attached application,
OR

☐ United States Application or PCT Number _____
Filed On _____.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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.

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Attorney Docket Number: 69726

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<p>I have reviewed and understand the contents of the above identified application.</p> <p>I acknowledge the duty to disclose information material to the patentability of the claims, as defined by 37 CFR 1.56.</p>						
LEGAL NAME OF SOLE OR FIRST INVENTOR:						
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)						
Roderick Allen GAMMONS						
Inventor's Signature				Date (Optional)		
Residence: City		State		Country		
Staines Upon Thames		Surrey		Great Britain		
Mailing Address						
135 Chertsey Lane						
City		State		Zip		Country
Staines Upon Thames		Surrey		TW18 3LR		Great Britain
☒ Additional inventors are being named on the <u>1</u> supplemental sheet(s) PTO/AIA/10 attached hereto						

Attorney Docket Number: 69726

PTO/AIA/10 (06-12)

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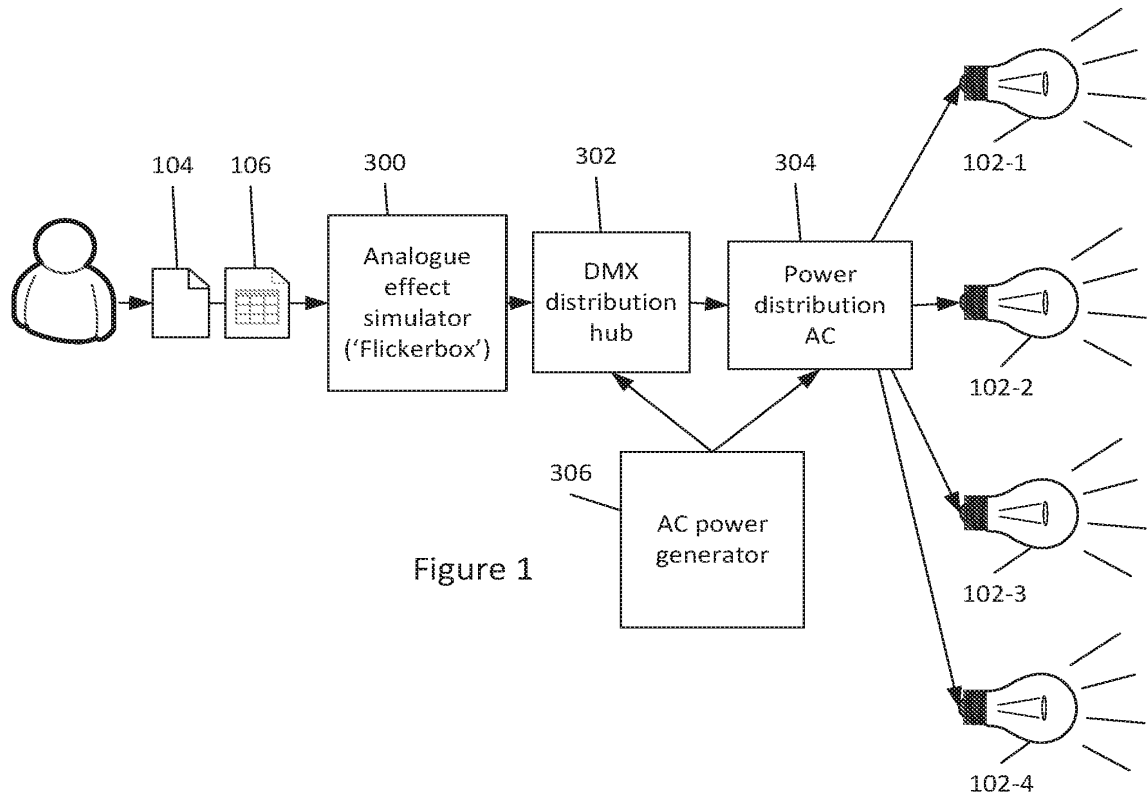
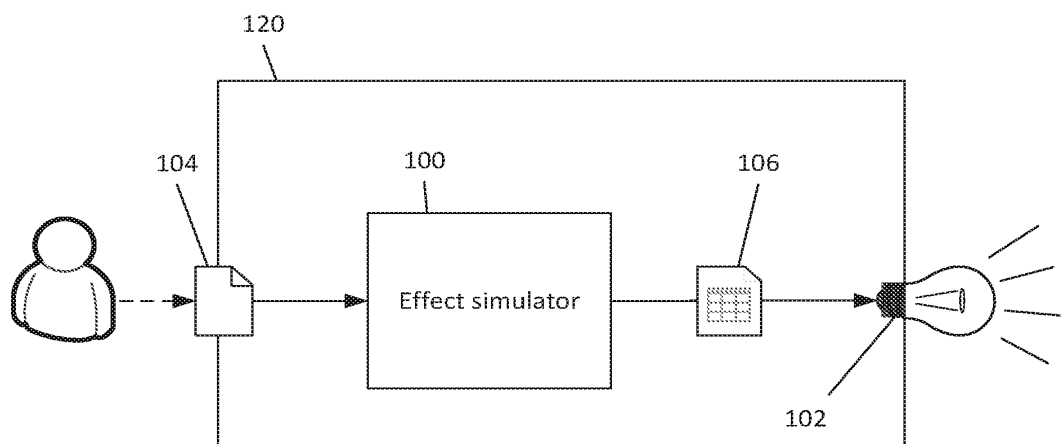
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SUPPLEMENTAL SHEET FOR DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet (for PTO/AIA/08,09)
Page <u>1</u> of <u>1</u>	

Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname) Andrew FRANCIS			
Inventor's Signature			Date (Optional)
Witham Residence: City	Essex State	Great Britain Country	
4 Wickham Bishops Mailing Address			
Witham City	Essex State	CM8 3NU Zip	Great Britain Country
Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname) Roderick Aaron GAMMONS			
Inventor's Signature			Date (Optional)
Winkfield Residence: City	Windsor State	Country	
Vetch Cottage, Lovel Road, Mailing Address			
Winkfield City	Windsor State	SL4 2EU Zip	Great Britain Country
Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Inventor's Signature			Date (Optional)
Residence: City	State	Great Britain Country	
Mailing Address			
City	State	Zip	Country

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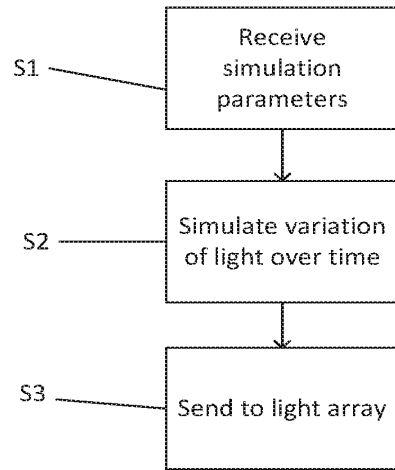


Figure 3

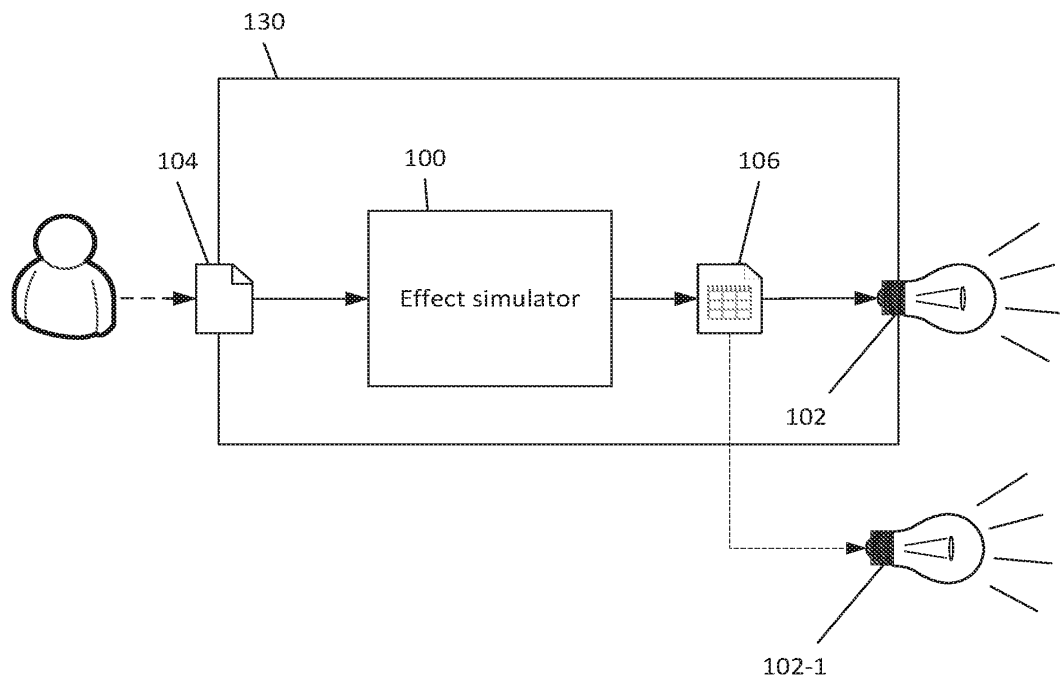
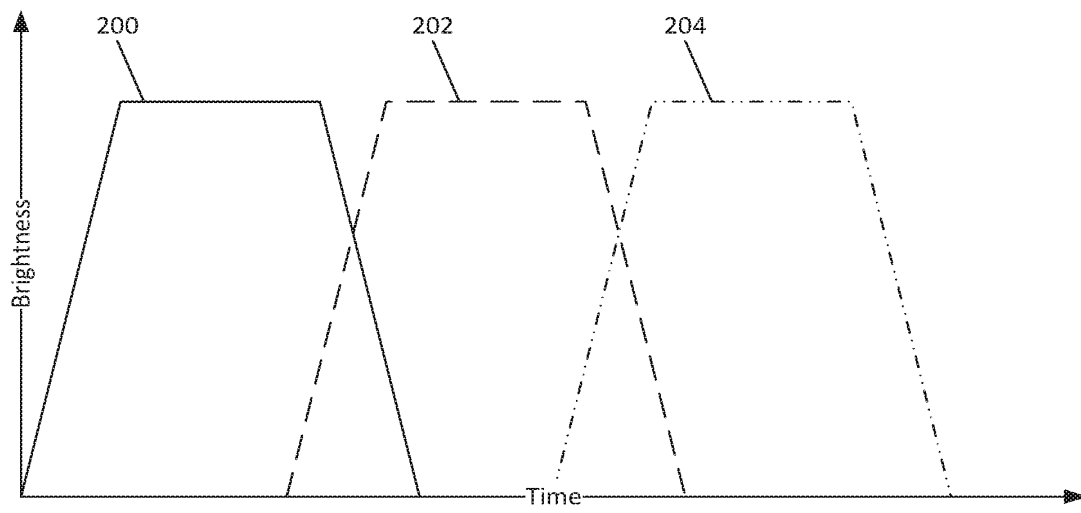


Figure 4



800

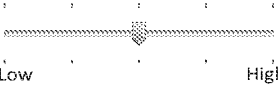
Light control system	
Fire effect	
Parameter	Setting
<small>More info</small> Fire activity	
<small>More info</small> Fire colour	<div>2000K</div>
<small>More info</small> Peak brightness	<div>80%</div>
<small>More info</small> Baseline brightness	<div>40%</div>
<small>More info</small> Camera frequency	<div>60Hz</div>
<div>  </div>	
Colour Swing Blue	Monochrome

Figure 6

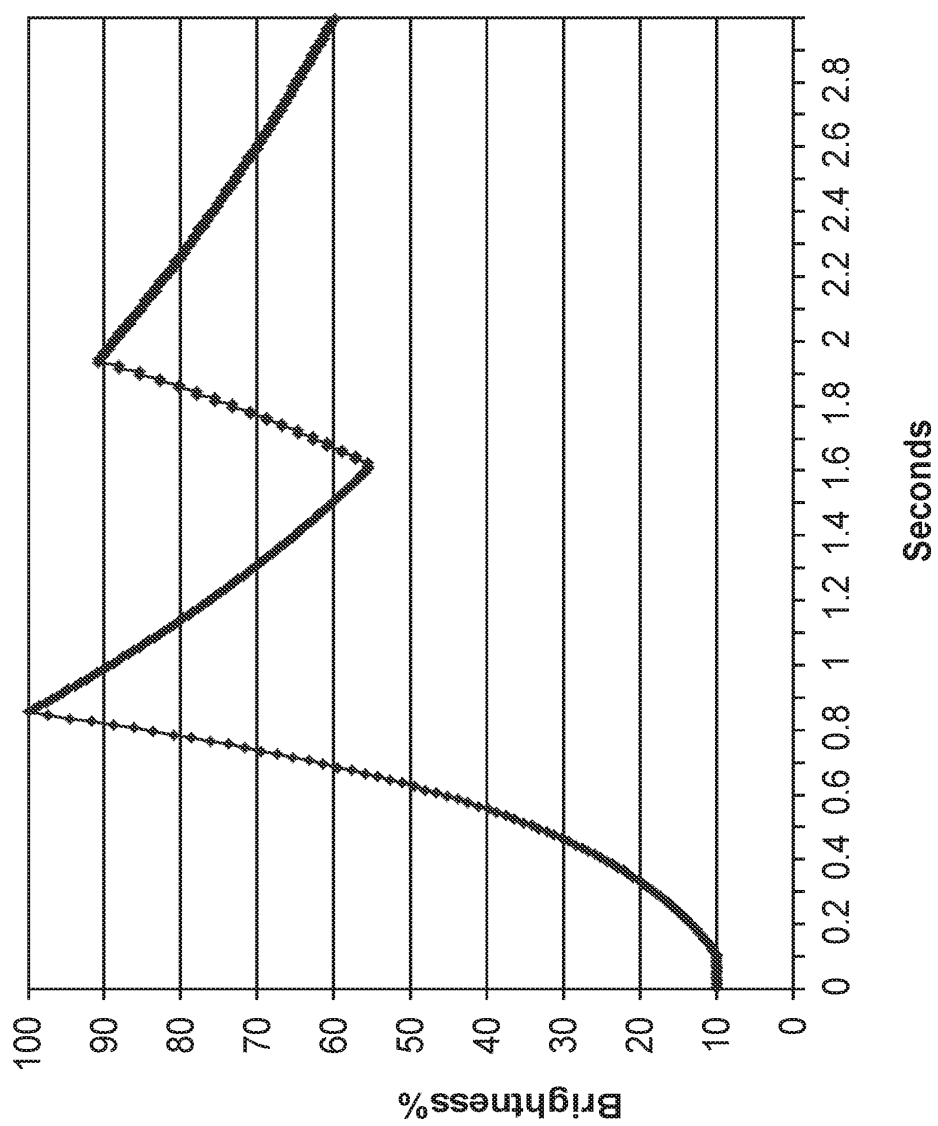


Figure 7

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.

This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Roderick Allen		GAMMONS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
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Postal Code	TW18 3LR	Country	GB		
Inventor 2					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Andrew		FRANCIS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
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Mailing Address of Inventor:					
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Address 2					
City	Witham	State/Province	Essex		
Postal Code	CM8 3NU	Country	GB		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

Inventor 3					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Roderick Aaron		GAMMONS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Winkfield	State/Province	Windsor	Country	GB
Mailing Address of Inventor:					
Address 1	Vetch Cottage, Lovel Road				
Address 2					
City	Winkfield	State/Province	Windsor		
Postal Code	SL4 2EU	Country	GB		

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐

An Address is being provided for the correspondence Information of this application.

Customer Number	67801
Email Address	martin@ipatent.co.il

Application Information:

Title of the Invention	LIGHTING SYSTEM AND CONTROL THEREOF		
Attorney Docket Number	69726	Small Entity Status Claimed ☒	
Application Type	Non Provisional		
Subject Matter	Utility		
Suggested Class (If any)		Sub Class (If any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	5	Suggested Figure for Publication (if any)	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

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Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

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This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Claims benefit of provisional	62/319,809	2016-04-08

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Application Number	Country	Filing Date (YYYY-MM-DD)	Priority Claimed
1606907.2	GB	2016-04-20	☒ Yes ☐ No

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

Applicant Information:

Applicant 1			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
☒ Assignee		☐ Legal representative under 35 U.S.C 117	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient propriety interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor :			
If the Assignee is an Organization check here. ☒			
Organization Name	Rotolight Limited		
Mailing Address Information:			
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Address 2			
City	London	State/Province	
Country	GB	Postal Code	SW19 5SB
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Email Address			

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/Martin D. Moynihan/			Date (YYYY-MM-DD)	2017-04-07
First Name	Martin	Last Name	Moynihan	Registration Number	40338

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EFS ID:	28859541
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	07-APR-2017
Filing Date:	
Time Stamp:	00:55:16
Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	1-69726TransmittalSheetUtiliy Application.pdf	32731 f47b724a0f806c8992487b3dcf0246a0e8e6607b	no	1
Warnings:					

Information:					
2	Specification	2-69726Specification.pdf	130400	no	28
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Warnings:					
Information:					
3	Oath or Declaration filed	3-69726Declaration.pdf	139094	no	3
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Warnings:					
Information:					
4	Drawings-only black and white line drawings	4-69726Figures.pdf	120994	no	5
			4e104c852c7fd82dd567087fd8aa83a0a70944a		
Warnings:					
Information:					
5	Application Data Sheet	5-69726ApplicationDataSheet.pdf	69888	no	4
			d13e246e249f4f3b8f9cda08001557f5cae29566		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
Total Files Size (in bytes):			493107		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/481,460	04/07/2017	2844	0.00	69726	54	9

CONFIRMATION NO. 5642

FILING RECEIPT

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215



Date Mailed: 04/18/2017

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**

Inventor(s)

Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM;
Andrew FRANCIS, Witham, UNITED KINGDOM;
Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM;

Applicant(s)

Rotolight Limited, London, UNITED KINGDOM;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/319,809 04/08/2016

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.)

UNITED KINGDOM 1606907.2 04/20/2016 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/14/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/481,460**

page 1 of 3

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LIGHTING SYSTEM AND CONTROL THEREOF

Preliminary Class

315

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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 (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726

CONFIRMATION NO. 5642

FORMALITIES LETTER



OC000000090666838

Date Mailed: 04/18/2017

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Additional claim fees of \$ **3090** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.
The surcharge is due for any one of:
 - late submission of the basic filing fee, search fee, or examination fee,
 - late submission of inventor's oath or declaration,
 - filing an application that does not contain at least one claim on filing, or
 - submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ **70** basic filing fee.
- \$ **70** surcharge.
- \$ **300** search fee.
- \$ **360** examination fee.
- \$ **1260** for **6** independent claims over 3.
- \$ **1440** for **36** total claims over 20.
- \$ **390** for multiple dependent claim surcharge.

page 1 of 2

- \$(0) previous unapplied payment amount.
- **\$ 3890** TOTAL FEE BALANCE DUE.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
Roderick Allen GAMMONS
Andrew FRANCIS
Roderick Aaron GAMMONS

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".

<https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/tqlam/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/481,460	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	70		N/A	
SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	56	minus 20 = *	36	x 40 =	1440		
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	9	minus 3 = *	6	x 210 =	1260		
APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	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).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				390			
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	3820	TOTAL	
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	x =		x =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	x =		x =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		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.							

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET							Application Number		Filing Date		
Substitute for Form PTO-1360 (For use with Form PTO/SB/06)							15481460				
							Applicant(s) Roderick Allen GAMMONS				
							* May be used for additional claims or amendments				
CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT			*		*	
	Indep	Depend	Indep	Depend	Indep	Depend		Indep	Depend	Indep	Depend
1	1										
2		1									
3		2									
4		2									
5		(1)									
6		(1)									
7		(1)									
8		(1)									
9		(1)									
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46		(1)									
47	1										
48		1									
49	1										
50	1										
Total Indep	9		0		0						
Total Depend	47		0		0						
Total Claims	56		0		0						
51	1										
52	1										
53	1										
54	1										
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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.

**Request to Retrieve Electronic
Priority Application(s)**Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

COMPLETE IF KNOWN	
Application Number	15/481,460
Filing Date	April 7, 2017
First Named Inventor	Roderick Allen GAMMONS
Art Unit	2844
Examiner Name	Not Yet Assigned
Attorney Docket Number	69726

Pursuant to 37 CFR 1.55(h), the undersigned hereby requests that the USPTO retrieve an electronic copy of each of the following foreign applications for which priority has been claimed under 35 U.S.C. 119(a)-(d) from a foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement. This Request must be submitted:

- within the later of sixteen months from the filing date of the prior foreign application or four months from the actual filing date of an application under 35 U.S.C. 111(a),
- within four months from the later of the date of commencement (37 CFR 1.491(a)) or the date of the initial submission under 35 U.S.C. 371 of an application entering the national stage under 35 U.S.C. 371, or
- with a petition under 37 CFR 1.55(e).

☐ **OPTION A**

Please retrieve the priority application identified in Column C, a certified copy of which is contained in the EP or JP application identified in Columns A and B:

A		B		C	
Code for Participating Office (EP or JP only)		Application containing the non-participating priority application		Non-participating priority application to be retrieved	
		App. No.	Filing Date	Country Code	App. No.
1					

☒ **OPTION B**

This Request may be used for the infrequent circumstance when a claim for priority to an application filed in a participating foreign intellectual property office was made prior to that foreign intellectual property office becoming a participating foreign intellectual property office.

Please retrieve the priority application identified in Columns A and B:

A		B		
Code for Participating Office (e.g., EP, JP, KR, CN) or WIPO DAS Depositing Office (e.g., AU, DK, ES, FI, GB, IB, SE)	Application to be retrieved			
	App. No.	Filing Date	Access Code (for WIPO DAS Depositing Office)	
1 GB	1606907.2	2016-04-20	CF91	
2				

The USPTO will not attempt to retrieve the identified priority application(s) unless an identical claim for foreign priority to the application identified above is made pursuant to 37 CFR 1.55(d) or a petition is granted under 37 CFR 1.55(e). Applicants are advised to consult Private PAIR (accessed through www.uspto.gov) to assure that the retrieval has been successful. The applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period set forth in 37 CFR 1.55(g)(1).

I hereby declare that I have the authority to grant access to the above-identified foreign application(s).

/Martin D. Moynihan/

Signature

Martin D. Moynihan

Printed or Typed Name

Title

May 15, 2017

Date

718.930.5399

Telephone Number

40338

Registration Number, if applicable

This collection of information is required by 37 CFR 1.55(d). 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 8 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:	29202545
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	15-MAY-2017
Filing Date:	07-APR-2017
Time Stamp:	04:37:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for USPTO to retrieve priority docs	69726Formsb0038.pdf	149164 <small>f00c288e8cf7088d30258a1746922f379c865719</small>	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	149164
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
Roderick Allen GAMMONS et al.	§	Confirmation No.: 5642
	§	
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	
Examiner: Not Yet Assigned	§	Attorney Docket: 69726
	§	

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

PRELIMINARY AMENDMENT

Sir:

Prior to examination, please amend the above-identified application as follows:

In the claims:

1-54. (Cancelled)

55. (New) A method for controlling a lighting device to produce user customisable realistic lighting effects, the method comprising:

calculating a time varying lighting value based on at least one simulation parameter;

and

outputting said time varying lighting value thereby to simulate a realistic lighting effect.

56. (New) A method according to Claim 55, further comprising receiving said at least one simulation parameter for characterising a lighting effect.

57. (New) A method according to Claim 55, wherein said at least one simulation parameter for characterising a lighting effect is random; preferably random within predefined boundaries.

58. (New) A method according to Claim 57, wherein the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters; preferably in a range determined in dependence on one or more user-selectable simulation parameters.

59. (New) A method according to Claim 55, wherein the simulation parameter is related to one or more of: a maximum brightness; a minimum brightness; a duration; an interval; a number of pulses; a ramp up time; a ramp down time; a trigger; a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; a colour; a colour temperature, and a colour fluctuation period.

60. (New) A method according to Claim 55, wherein the simulation parameter comprises a user selectable camera frequency.

61. (New) A method according to Claim 60, wherein a minimum pulse width of said time varying lighting value is determined by said camera frequency so as to avoid rolling shutter artefacts.

62. (New) A method according to Claim 55, wherein the lighting effect is designed to mimic at least one or more of: fire; lightning; police car light; television; a neon flickering sign; a candle; muzzle (gunshot); welding; spark/short circuit; a scan (e.g. fingerprint scanner); paparazzi flashes; fireworks; flashes (strobe); a propeller; a (nuclear) explosion; and a wormhole.

63. (New) A method according to Claim 55, further comprising receiving a definition of a trigger event, said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect, and preferably further comprising detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.

64. (New) A method according to Claim 55, further comprising storing the calculated lighting value corresponding to said user customisable realistic lighting effect as a recallable pre-set.

65. (New) A method according to Claim 55, further comprising controlling a plurality of lights in dependence on the output; preferably wherein the said plurality of lights output different lighting values so as to simulate a lighting effect.

66. (New) A method according to Claim 65, wherein the output of said plurality of lights is offset in time; preferably wherein the output of said plurality of lights overlap with one-another so as to simulate a moving light source.

67. (New) A controller for controlling a lighting device to produce user customisable realistic lighting effects, the controller comprising:
a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and
an output adapted to control a lighting device according to the determined variation of lighting over time.

68. (New) A controller according to Claim 67, wherein the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.

69. (New) A controller according to Claim 67, wherein the controller comprises an input interface adapted to receive a user input; preferably wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.

70. (New) A lighting system comprising a controller according to Claim 67 and at least one lighting device.

71. (New) A lighting system according to Claim 70, wherein said controller and said lighting device are integrated in a combined unit.

72. (New) A lighting system according to Claim 71, further comprising a further lighting device separate from said controller.

73. (New) A lighting system according to Claim 70, wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

74. (New) A computer program product for controlling a lighting device to produce user customisable realistic lighting effects, the computer program product adapted to perform, when executed, the steps of:

- calculating a time varying lighting value based on at least one simulation parameter;
- and
- outputting said time varying lighting value thereby to simulate a realistic lighting effect.

REMARKS

By way of this Amendment, Applicant has cancelled claims 1 – 54, thereby removing all multiple dependent claims. New claims 55 – 74 are also added herewith. No new matter is introduced by way of this amendment.

An early and favorable action is respectfully requested.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: August 17, 2017

Doc Code: Oath

PTO/AIA/08 (06-12)

Document Description: Oath or declaration filed

Approved for use through 01/31/2014. OMB 0651-0032

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☒ Declaration
Submitted
With Initial
Filing

☐ Declaration
Submitted After initial
Filing (surcharge
(37 CFR 1.16(f))
required

Attorney Docket
Number

69726

First Named Inventor

Roderick Allen GAMMONS

COMPLETE IF KNOWN

Application Number

Filing Date

Art Unit

Examiners Name

LIGHTING SYSTEM AND CONTROL THEREOF

(Title of the invention)

As below named inventor, I hereby declare that:

This declaration is directed to:

☒ The attached application,
OR

☐ United States Application or PCT Number _____
Filed On _____.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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.

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Attorney Docket Number: 69726

PTO/AIA/08 (08-12)
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DECLARATION — Utility or Design Patent Application

Direct all Correspondence to:	☒ The address associated with Customer Number:	67801	OR	☐ Correspondence address below
Name				
Address				
City		State	Zip	
Country	Telephone		Email	
<p>I have reviewed and understand the contents of the above identified application.</p> <p>I acknowledge the duty to disclose information material to the patentability of the claims, as defined by 37 CFR 1.56.</p>				
LEGAL NAME OF SOLE OR FIRST INVENTOR: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)				
Roderick Allen GATMINGS				
Inventor's Signature		Date (Optional)		
Residence: City	State	Country		
Staines Upon Thames	Surrey	Great Britain		
Mailing Address				
135 Chertsey Lane				
City	State	Zip	Country	
Staines Upon Thames	Surrey	TW16 3LR	Great Britain	
☒ Additional inventors are being named on the ____ supplemental sheet(s) PTO/AIA/10 attached hereto				

Attorney Docket Number: 69726

PTO/AIA/10 (DR-12)B

Approved for use through 01/31/2014 OMB 0651-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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SUPPLEMENTAL SHEET FOR DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet (for PTO/AIA/08,09)
Page 1 of 1	

Legal Name of Additional Joint Inventor, if any:

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Andrew FRANCIS

Inventor's Signature <i>A. Francis</i>	Date (Optional) <i>April 2017</i>
--	-----------------------------------

Witham Residence: City	Essex State	Great Britain Country
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4 Wickham Bishops

Mailing Address

Witham City	Essex State	CM8 3NU Zip	Great Britain Country
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Legal Name of Additional Joint Inventor, if any:

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Roderick Aaron GAMMONS

Inventor's Signature <i>[Signature]</i>	Date (Optional) <i>April 7th 2017</i>
---	---------------------------------------

Winkfield Residence: City	Windsor State	Country
------------------------------	------------------	---------

Vetch Cottage, Lovel Road,

Mailing Address

Winkfield City	Windsor State	SL4 2EU Zip	Great Britain Country
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Legal Name of Additional Joint Inventor, if any:

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Inventor's Signature	Date (Optional) <i>April 7th 2017</i>
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Residence: City	State	Great Britain Country
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Mailing Address

City	State	Zip	Country
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This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.03. This information is required to obtain or retain a benefit by the public which is to be (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 21 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.

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Doc Code: ECOMM.AUTH/ECOMM.WTDW

Doc Description: Internet Communications Authorized/Internet Communications Authorization Withdrawn

PTO/SB/439 (11-15)

AUTHORIZATION FOR INTERNET COMMUNICATIONS IN A PATENT APPLICATION OR REQUEST TO WITHDRAW AUTHORIZATION FOR INTERNET COMMUNICATIONS	Application No.	15/481,460
	Filing Date	April 7, 2017
	First Named Inventor	Roderick Allen GAMMONS
	Art Unit	2844
	Examiner Name	Not Yet Assigned
	Practitioner Docket No.	69728

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

I. To authorize permission for Internet Communications.

☒ Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications will be made of record in the application file. (MPEP 502.03)

II. To withdraw authorization for Internet Communications.

☐ The authorization given on _____, to the USPTO to communicate with the undersigned and any practitioner in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via Internet communications such as video conferencing, instant messaging, or electronic mail is hereby withdrawn. I understand that the withdrawal is effective when approved rather than when received.

I am the

- ☐ applicant.
- ☒ attorney or agent of record. Registration number 40338.
- ☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Martin D. Moynihan/
Signature

August 17, 2017
Date

Martin D. Moynihan
Typed or printed name

(703) 859-9634
Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Juristic entities must be represented by a patent practitioner (see 37 CFR 1.31, which is applicable to any paper filed on or after September 16, 2012, that is presented on behalf of a juristic entity, regardless of application filing date). Submit multiple forms if more than one signature is required, see below*.

☒ * Total of 1 forms are submitted.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)

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**TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE
REGISTERED PRACTITIONERS**

Attorney Docket Number: 69726

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	15/481,460
Filing Date	April 7, 2017
First Named Inventor	Roderick Allen GAMMONS
Title	LIGHTING SYSTEM AND CONTROL THEREOF
Art Unit	2844
Examiner Name	Not Yet Assigned
Attorney Docket Number	69726

SIGNATURE of Applicant or Patent Practitioner

Signature	/Martin D. Moynihan/	Date (Optional)	August 17, 2017
Name	Martin D. Moynihan	Registration Number	40338
Title (if Applicant is a juristic entity)			
Applicant Name (If Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☒ *Total of 4 forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.

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POWER OF ATTORNEY BY APPLICANT

Attorney Docket Number: 68728
Title: LIGHTING SYSTEM AND CONTROL THEREOF
By: Roderick Allen GAMMONS et al

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

67801

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Rotolight Limited

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	MARCH 2017
Name	RODERICK GAMMONS (SAR)		
Title	CHIEF OF PATENT ROTOLIGHT		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Roderick Allen GAMMONS et al.Application No./Patent No.: 15/481,460Filed/Issue Date: April 7, 2017Titled: LIGHTING SYSTEM AND CONTROL THEREOFRotolight Limited,
(Name of Assignee)a Corporation
(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- 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 _____, Frame _____, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

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.
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The document was recorded in the United States Patent and Trademark Office at
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[Page 1 of 2]

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**

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____
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4. From: _____ To: _____
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5. From: _____ To: _____
 The document was recorded in the United States Patent and Trademark Office at
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6. From: _____ To: _____
 The document was recorded in the United States Patent and Trademark Office at
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- ☐ Additional documents in the chain of title are listed on a supplemental sheet(s).
- ☐ As required by 37 CFR 3.73(c)(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 assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

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

 Signature /Martin D. Moynihan/

 Printed or typed Name Martin D. Moynihan

 Date August 17, 2017

 Title or Registration Number 40338

ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned (hereinafter called the "Assignors"):

Roderick Allen GAMMONS	135 Chertsey Lane, Staines Upon Thames, TW18 3LR Surrey, Great Britain
Andrew FRANCIS	4 Wickham Bishops, Witham, CM8 3NU Essex, Great Britain
Roderick Aaron GAMMONS	Vetch Cottage, Lovel Road, Winkfield, SL4 2EU Windsor, Great Britain

hereby sell(s), assign(s) and transfer(s) to:

Rotolight Limited
c/o London Law, The White House
57-63 Church Road
Wimbledon Village
SW19 5SB London
Great Britain

(hereinafter called the "Assignee"), its successors, assigns, nominees or other legal representatives, the undersigned's entire rights, title and interest in and to the invention titled:

LIGHTING SYSTEM AND CONTROL THEREOF

described and claimed in the following Patent Application:

Patent Application to be filed in the USA,
executed the same date as this assignment,
and identified as Attorney Docket No. 69726

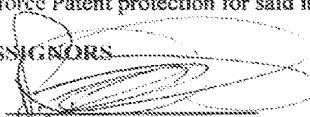
and in and to said Patent Application, and all original and reissued Patents granted therefore, and all divisions and continuations thereof, any corresponding PCT Patent Application and the National Phases thereof, including the right to apply and obtain Patents in all other countries, the right to claim priority under International Conventions, and the Letters Patent which may be granted thereon:

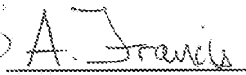
covenant that the undersigned have (has) the full right to convey the entire interest therein assigned;

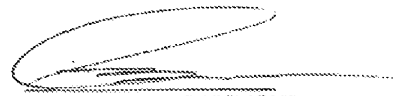
authorize(s) and request(s) the Registrar of Patents, and any Official of any country whose duty it is to issue Patents on applications as aforesaid, to issue the said Letters Patent to the said Assignee;

and agree(s) to sign all lawful papers, make all rightful oaths, do all lawful acts requisite for such Patent Applications, and do everything possible to aid said Assignee to apply for, obtain and enforce Patent protection for said invention.

ASSIGNORS


Roderick Allen GAMMONS


Andrew FRANCIS


Roderick Aaron GAMMONS

Date: 7th April '17

Date: 7th April '17

Date: 7th April '17

ASSIGNEE

Rotolight Limited

Signature : H. M. GARNER
Name : Heke MARY GARNER
Capacity : FINANCIAL DIRECTOR
Date : April 7th 2017

Patent Application to be filed in the USA,
executed the same date as this assignment,
and identified as Attorney Docket No. 69726

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	70	70
UTILITY SEARCH FEE	2111	1	300	300
UTILITY EXAMINATION FEE	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	2051	1	70	70
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with \$0 paid	2252	1	300	300
Miscellaneous:				
Total in USD (\$)				1100

Electronic Acknowledgement Receipt	
EFS ID:	30105083
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	17-AUG-2017
Filing Date:	07-APR-2017
Time Stamp:	11:23:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 1100
RAM confirmation Number	081717INTEFSW00009713501407
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	69726PetitionandFeeforExtension of Time in Response to Notice of File Missing Parts.pdf	26244	no	1
			ced9981f133d33db935d0154f7af8a1cab629e9a		
Warnings:					
Information:					
2	Applicant Response to Pre-Exam Formalities Notice	69726ResponsetoNoticetoFile MissingParts.pdf	21055	no	1
			58e04188f56157999ae10caa34ff00fb44f0c11		
Warnings:					
Information:					
3	Preliminary Amendment	69726PreliminaryAmendment.pdf	31451	no	5
			530e7781915d9256fcbfa55be3e2749fdb29db47		
Warnings:					
Information:					
4	Oath or Declaration filed	69726ExecutedDeclaration.pdf	844261	no	3
			aa8a1b967f30ed47b8fb539e7f77183cbd1d830		
Warnings:					
Information:					
5	Internet Communications Authorized	69726sb0439.pdf	66701	no	1
			6a0e54451472ff6492c5b71ce1327c6a2582a39a		
Warnings:					
Information:					
6	Power of Attorney	69726ExecutedPowerofAttorney.pdf	642942	no	4
			1de124b975c988157c55069cb5c10c40a1581fb8		
Warnings:					
Information:					

7	Assignee showing of ownership per 37 CFR 3.73	69726ExecutedAssignment.pdf	598520	no	2
			bcd28ab7f4643d416980dd73070cce40f9e a118b		
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	38582	no	2
			7a69fdc0ca5245bee0baea979ecffb61a0d3 aaca		
Warnings:					
Information:					
Total Files Size (in bytes):			2269756		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§		
	§		
Roderick Allen GAMMONS et al.	§	Confirmation No.:	5642
	§		
Serial No.: 15/481,460	§		
	§		
Filed: April 7, 2017	§	Group Art Unit:	2844
	§		
For: LIGHTING SYSTEM AND CONTROL THEREOF	§		
	§		
	§	Attorney Docket:	69726
Examiner: Not Yet Assigned	§		

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

PETITION AND FEE FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136(a)

Sir:

- (1) This is a petition for an extension of time to respond to the Notice to File Missing Parts mailed **April 18, 2017**, for a period of **two (2) months**.
- (2) Applicant is a:
X small entity ___ verified statement attached
 ___ verified statement filed
- (3)
- | Extensions | Fees for | Fee for other than |
|--|---------------------|---------------------|
| <u>(months)</u> | <u>small entity</u> | <u>small entity</u> |
| ☒ two months | \$ 300.00 | \$ 600.00 |
- (4) An response X is filed herewith
 ___ has been filed
- (5) Please charge the extension fee and any other amount required to Deposit Account No. **50-1407**.
- (6) The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. **50-1407**. This authorization and request is not limited to payment of all fees associated with this communication, including any Extension of Time fee, not covered by check or specific authorization, but is also intended to include all fees for the presentation of extra claims under 37 CFR §1.16 and all patent processing fees under 37 CFR §1.17 throughout the prosecution of the case. This blanket authorization does not include patent issue fees under 37 CFR §1.18.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: August 17, 2017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
Roderick Allen GAMMONS et al.	§	Confirmation No.: 5642
	§	
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	
Examiner: Not Yet Assigned	§	Attorney Docket: 69726
	§	

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

RESPONSE TO NOTICE TO FILE MISSING PARTS

Sir:

This is in response to the Notice to File Missing Parts dated April 18, 2017, which response is being made on or before August 18, 2017, and for which a two (2) month extension of time fee is due and enclosed herewith.

Applicant attaches herewith a Preliminary Amendment which includes amendments to the claims (eliminating the multiple dependencies and cancelling claims).

Pursuant to MPEP 607 III, that recites that a Preliminary Amendment filed concurrently with a response to a Notice to File Missing Parts of Application that required the fees set forth in 37 CFR 1.16, which Preliminary Amendment cancels or adds claims, will be taken into account in determining the appropriate fees due in response to the Notice to File Missing Parts. Therefore, Applicant respectfully asserts that no additional claim fees are due, nor is the multiple dependent claim surcharge.

Attached is an executed Declaration. Also attached is an executed Power of Attorney together with a supporting executed Assignment form.

In view of the attached Preliminary Amendment, please charge a total of **\$800**, and any additional fees if required, to Deposit Account No. 50-1407 (the breakdown of this **\$800** total is as follows: \$70 Surcharge; \$70 Basic Filing Fee, \$300 Search Fee, \$360 Examination Fee).

An early and favorable action is respectfully requested.

Respectfully submitted,
/Martin D. Moynihan/
Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: August 17, 2017

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 15/481,460		Filing Date 04/07/2017		☐ 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), (l), 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 \$40 =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		x \$210 =			
☐ 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									
AMENDMENT		(Column 1)		(Column 2)		(Column 3)			
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)	
		ADDITIONAL FEE (\$)							
		Total (37 CFR 1.16(i))		* 20 Minus ** 56 = 0		x \$40 =		0	
		Independent (37 CFR 1.16(h))		* 3 Minus *** 9 = 0		x \$210 =		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	
AMENDMENT		(Column 1)		(Column 2)		(Column 3)			
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)	
		ADDITIONAL FEE (\$)							
		Total (37 CFR 1.16(i))		* Minus ** =		x \$0 =			
		Independent (37 CFR 1.16(h))		* Minus *** =		x \$0 =			
		☐ 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.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/SULONDA D STEVENSON/			
*** 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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/481,460	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	70		N/A	
SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	20	minus 20 = *	x 40 =	0.00			
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	3	minus 3 = *	x 210 =	0.00			
APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	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).			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	
				730			
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	x =		x =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	x =		x =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
<div style="font-size: x-small;"> * 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. </div>							



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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	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/481,460	04/07/2017	2844	800	69726	20	3

CONFIRMATION NO. 5642
UPDATED FILING RECEIPT

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215



Date Mailed: 08/21/2017

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**

Inventor(s)

Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM;
Andrew FRANCIS, Witham, UNITED KINGDOM;
Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM;

Applicant(s)

Rotolight Limited, London, UNITED KINGDOM;

Power of Attorney: The patent practitioners associated with Customer Number 67801

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/319,809 04/08/2016

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.)

UNITED KINGDOM 1606907.2 04/20/2016 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/14/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/481,460**

Projected Publication Date: 11/30/2017

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LIGHTING SYSTEM AND CONTROL THEREOF

Preliminary Class

315

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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 (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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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
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

CONFIRMATION NO. 5642
POA ACCEPTANCE LETTER



Date Mailed: 08/21/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/17/2017.

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.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/lphan/

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

<p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p><i>(use as many sheets as necessary)</i></p>				<p>Complete if Known</p>		
				Application Number		15/481,460
				Filing Date		April 07, 2017
				First Named Inventor		GAMMONS Roderick Allen et al
				Art Unit		2844
				Examiner Name		
Sheet	1	of	2	Attorney Docket Number		69726
<p align="center">U.S. PATENT DOCUMENTS</p>						
Examiner Initials*	Cite No. ¹	Document Number	Publication Date DD-MMM-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Number-Kind Code ² (if known)				
	1	2007/0159347	12-Jul-2007	Weitzel		
	2	2008/0129226	05-Jun-2008	DeWitt et al.		
	3	5,307,295	26-Apr-1994	Taylor et al.		
	4	5,921,659	13-Jul-1999	Hunt et al.		
	5	5,924,784	20-Jul-1999	Chliwnyj et al.		
	6	7,038,399	02-May-2006	Lys et al.		
	7	7,353,071	01-Apr-2008	Blackwell et al.		
<p align="center">FOREIGN PATENT DOCUMENTS</p>						
Examiner Initials*	Cite No. ¹	Foreign Patent Documents	Publication Date DD-MMM-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	8	GB 2209229	04-May-1989	Pearce-Harvey et al.		
	9	EP 2383608	02-Nov-2011	Wu		
	10	GB 2424525	27-Sep-2006	Rafter et al.		
	11	GB 2482562	08-Feb-2012	Hjerde		
	12	JP H0448588	18-Feb-1992	Iwata		
	13	WO 01/05195	18-Jan-2001	Lys et al.		
	14	WO 2005/052751	09-Jun-2005	Chemel et al.		
Examiner Signature				Date Considered		

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

6 Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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

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

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/481,460
				Filing Date	April 07, 2017
				First Named Inventor	GAMMONS Roderick Allen et al
				Group Art Unit	2844
				Examiner Name	
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	15	European Search Report and the European Search Opinion Dated 01 August 2017 From the European Patent Office Re. Application No. 17165609.3. (7 Pages)			
	16	Patents Act 1977: Combined Search and Examination Report Under Sections 17 and 18(3) Dated 13 June 2016 From the Intellectual Property Office of the United Kingdom Re. Application No. GB1606907.2. (7 Pages)			
	17	Patents Act 1977: Examination Report under Section 18(3) Dated 30 August 2017 From the Intellectual Property Office of the United Kingdom Re. Application No. GB1606907.2 (3 Pages)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF [CineSFX]	§	Group Art Unit: 2844
	§	
Examiner:	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☒ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☐

☒ No Fee is Due.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 24 November 2017

Electronic Acknowledgement Receipt	
EFS ID:	31055127
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Benjamin Frohlinger
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	28-NOV-2017
Filing Date:	07-APR-2017
Time Stamp:	03:21:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
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)	_form1449.pdf	43847 8a517d74efd6a5ed9b6360829f74dbbe356998f	no	2
Warnings:					

Information:					
This is not an USPTO supplied IDS fillable form					
2	Transmittal Letter	_USPTOltr.pdf	22159	no	3
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Warnings:					
Information:					
3	Foreign Reference	8-281764.pdf	688045	no	24
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Warnings:					
Information:					
4	Foreign Reference	9-281783.pdf	191169	no	14
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Warnings:					
Information:					
5	Foreign Reference	10-281780.pdf	704477	no	33
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Information:					
6	Foreign Reference	11-281782.pdf	2128592	no	51
			9868aed668f907b6d028aa32078116c8ace9beec		
Warnings:					
Information:					
7	Non Patent Literature	12-281766.pdf	669939	no	10
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Warnings:					
Information:					
8	Foreign Reference	13-281756.pdf	2229886	no	47
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Warnings:					
Information:					

9	Foreign Reference	14-281754.pdf	7670342	no	170
			388cde656c2eaf30c1cdfce1026868ae2a2652a8		
Warnings:					
Information:					
10	Non Patent Literature	15-281779.pdf	205510	no	7
			98149ea566353ab264738c1814831ed3a5372e6f		
Warnings:					
Information:					
11	Non Patent Literature	16-281753.pdf	269065	no	7
			c2b84d20018cd8622538ddd4400fcd95510beaa8		
Warnings:					
Information:					
12	Non Patent Literature	17-281770.pdf	339181	no	3
			97f694a9776ecd7f0f4e9dd1583c86b72209af56		
Warnings:					
Information:					
Total Files Size (in bytes):			15162212		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726

CONFIRMATION NO. 5642

PUBLICATION NOTICE



67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

Title:LIGHTING SYSTEM AND CONTROL THEREOF

Publication No.US-2017-0343197-A1

Publication Date:11/30/2017

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 publicly 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 Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, 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 <https://portal.uspto.gov/pair/PublicPair>. 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

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.

**Request to Retrieve Electronic
Priority Application(s)**Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

COMPLETE IF KNOWN

Application Number	15/481,460
Filing Date	April 7, 2017
First Named Inventor	Roderick Allen GAMMONS
Art Unit	2844
Examiner Name	CARIASO ALAN B
Attorney Docket Number	69726

Pursuant to 37 CFR 1.55(h), the undersigned hereby requests that the USPTO retrieve an electronic copy of each of the following foreign applications for which priority has been claimed under 35 U.S.C. 119(a)-(d) from a foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement. This Request must be submitted:

- within the later of sixteen months from the filing date of the prior foreign application or four months from the actual filing date of an application under 35 U.S.C. 111(a),
- within four months from the later of the date of commencement (37 CFR 1.491(a)) or the date of the initial submission under 35 U.S.C. 371 of an application entering the national stage under 35 U.S.C. 371, or
- with a petition under 37 CFR 1.55(e).

☐ **OPTION A**

Please retrieve the priority application identified in Column C, a certified copy of which is contained in the EP or JP application identified in Columns A and B:

Application identified in columns A and B:				
A	B		C	
Code for Participating Office (EP or JP only)	Application containing the non-participating priority application		Non-participating priority application to be retrieved	
	App. No.	Filing Date	Country Code	App. No.
1				

☒ **OPTION B**

This Request may be used for the infrequent circumstance when a claim for priority to an application filed in a participating foreign intellectual property office was made prior to that foreign intellectual property office becoming a participating foreign intellectual property office.

Please retrieve the priority application identified in Columns A and B:

A		B	
Code for Participating Office (e.g., EP, JP, KR, CN) or WIPO DAS Depositing Office (e.g., AU, DK, ES, FI, GB, IB, SE)	Application to be retrieved		
	App. No.	Filing Date	Access Code (for WIPO DAS Depositing Office)
1 GB	1606907.2	2016-04-20	CF91
2			

The USPTO will not attempt to retrieve the identified priority application(s) unless an identical claim for foreign priority to the application identified above is made pursuant to 37 CFR 1.55(d) or a petition is granted under 37 CFR 1.55(e). Applicants are advised to consult Private PAIR (accessed through www.uspto.gov) to assure that the retrieval has been successful. The applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period set forth in 37 CFR 1.55(g)(1).

I hereby declare that I have the authority to grant access to the above-identified foreign application(s).

/Martin D. Moynihan/

Signature

Martin D. Moynihan

Printed or Typed Name

Title

December 20, 2017

Date

718.930.5399

Telephone Number

40338

Registration Number, if applicable

This collection of information is required by 37 CFR 1.55(d). 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 8 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:	31281706
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	20-DEC-2017
Filing Date:	07-APR-2017
Time Stamp:	01:15:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for USPTO to retrieve priority docs	69726Forms0038.pdf	148679 7a77b6c52a9d6511428b9d4idf11d30c2774 4bfa3	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	148679
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>	



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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	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO.	TOT CLAIMS	IND CLAIMS
15/481,460	04/07/2017	2875	800	69726	20	3

CONFIRMATION NO. 5642
REPLACEMENT FILING RECEIPT

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215



Date Mailed: 12/21/2017

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**

Inventor(s)

Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM;
Andrew FRANCIS, Witham, UNITED KINGDOM;
Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM;

Applicant(s)

Rotolight Limited, London, UNITED KINGDOM;

Power of Attorney: The patent practitioners associated with Customer Number 67801

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/319,809 04/08/2016

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.)

UNITED KINGDOM 1606907.2 04/20/2016 Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

Request to Retrieve - This application either claims priority to one or more applications filed in an intellectual property Office that participates in the Priority Document Exchange (PDX) program or contains a proper **Request to**

Retrieve Electronic Priority Application(s) (PTO/SB/38 or its equivalent). Consequently, the USPTO will attempt to electronically retrieve these priority documents.

If Required, Foreign Filing License Granted: 12/20/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/481,460**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LIGHTING SYSTEM AND CONTROL THEREOF

Preliminary Class

362

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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

page 2 of 4

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 (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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United States of America	62/319,809	08 Apr 2016	
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Lighting system and control thereof

Field of invention

This invention relates to a lighting system, and the control of a lighting system, and the simulation of lighting special effects, and in particular to a lighting system for
5 videography, broadcasting and cinematography.

Background

In the film, broadcast and TV industry a lighting controller called a 'flicker box' which is independent of a lighting device, is used to produce flickering light effects to mimic flickering light for example from a fire place, candle, electrical spark or lightning for on set
10 television/broadcast production use.

The flicker effect provided by these devices is typically created using the analogue circuitry modulators contained within the 'flicker box', controlled manually by dials and levers. Use of a flicker box is typically a complex, costly and time consuming process that requires the setup, connection and control of multiple pieces of hardware typically
15 including external Digital Multiplex (DMX) and power distribution devices, as well as typically requiring a physical wired connection to the 'hot' light source desired to be controlled.

Typically such 'flicker boxes' require specialist knowledge and understanding to operate and remain inaccessible or 'out of reach' to lower budget television productions.

20 Furthermore, many 'flicker boxes' are incompatible with LED light sources, and such systems require the use of 'hot' incandescent light sources which are energy inefficient and also pose health and safety risks to those working on set, typically therefore requiring qualified lighting gaffers and operators.

An improved solution is desired.

25 According to one aspect of the invention, there is provided a method for controlling a lighting device to produce user customisable lighting effect, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect.

30 According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation

parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

5 In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.

10 Preferably, the parameters of the effects including but not limited to speed, duration, power/brightness and colour temperature can be controlled locally via a simple user interface on the light itself.

15 Preferably, the start/stop "triggering" of the effects can be controlled locally via a simple user interface on the light itself, remotely via WiFi, Bluetooth, Zigbee or wireless DMX from a smart phone or tablet, or from a wired 3.5mm minijack remote trigger, or a wired DMX trigger.

20 Preferably, the parameters of the effects can be controlled remotely via WiFi, Bluetooth, Zigbee or wireless DMX from a smart phone or tablet.

Preferably, the parameters of the effects can be controlled Via a serial communications interface (eg. RS232, USB or DMX) from a PC running custom lighting control software.

25 Preferably, the light source containing in built special effects is in the form of an LED lighting fixture. Alternatively it is in the form of or 'hot' light incandescent fixture.

Preferably, multiple lights may be connected together via wired DMX, or via WiFi, Bluetooth, Zigbee or wireless DMX to produce a synchronised large area special effect.

30 Preferably, when multiple lights are connected together to produce a synchronized large area special effect, the inter-relationship of those connected lights is customizable so as to allow all of the connected devices to fire at the same time if desired, or, to enable a staggered effect to take place over an extended time duration and with customizable power intensity, in order to create the effect that a static object is moving as the lights
35 "chase" around a scene.

Preferably, the system includes rolling shutter compensation enabling the minimum light pulse width to be adjusted to suit the shutter speed or frame rate of the user's camera in

order to prevent 'strobing' due to the light effect being out of phase/sync with the frame rate of the camera, ensuring that each frame captured by the camera is fully illuminated.

- 5 Preferably, a light source can be designated as a 'master', and have connected 'slave' light sources which fire in synchronization with the 'master', or in a customizable sequence, with regard duration, power and/or colour temperature.

- 10 Preferably, the 'slave' light sources are connected to the 'master' light source via wired DMX, wireless DMX, wifi, Bluetooth, or RS232 sync cable.

Preferably, the light contained in built special effects, can be powered both from mains power, and/or via its own internal battery power source, providing greater flexibility and portability for location shooting.

- 15 Preferably, the light source is capable of producing customisable effects including, but not limited to : Fire, Lightning, Police light, TV simulation, Neon Flickering sign, Muzzle (gunshot), Welding, Spark/Short Circuit, Scan (e.g. fingerprint scanner), Papparrazi flashes, Propeller, (Nuclear) Explosion and Wormhole.

- 20 The invention extends to any novel aspects or features described and/or illustrated herein.

Further features of the invention are characterised by the other independent and dependent claims

- 25 Any feature in one aspect of the invention may be applied to other aspects of the invention, in any appropriate combination. In particular, method aspects may be applied to apparatus aspects, and vice versa.

Furthermore, features implemented in hardware may be implemented in software, and vice versa. Any reference to software and hardware features herein should be construed accordingly.

- 30 Any apparatus feature as described herein may also be provided as a method feature, and vice versa. As used herein, means plus function features may be expressed alternatively in terms of their corresponding structure, such as a suitably programmed processor and associated memory.

It should also be appreciated that particular combinations of the various features described and defined in any aspects of the invention can be implemented and/or supplied and/or used independently.

5 The invention also provides a computer program and a computer program product comprising software code adapted, when executed on a data processing apparatus, to perform any of the methods described herein, including any or all of their component steps.

10 The invention also provides a computer program and a computer program product comprising software code which, when executed on a data processing apparatus, comprises any of the apparatus features described herein.

The invention also provides a computer program and a computer program product having an operating system which supports a computer program for carrying out any of the methods described herein and/or for embodying any of the apparatus features described herein.

15 The invention also provides a computer readable medium having stored thereon the computer program as aforesaid.

The invention also provides a signal carrying the computer program as aforesaid, and a method of transmitting such a signal.

20 The invention extends to methods and/or apparatus substantially as herein described with reference to the accompanying drawings.

The invention will now be described by way of example, with references to the accompanying drawings in which:

- Figure 1 is a schematic diagram of a 'flickerbox' lighting system;
Figure 2 is a schematic diagram of a further lighting system;
25 Figure 3 is a flow diagram of a method for adjusting a lighting device;
Figure 4 is a schematic diagram of a further lighting system;
Figure 5 shows a time/brightness plot for a system of linked lights;
Figure 6 is a graphic user interface for user input of simulation parameters; and

Figure 7 is a graph of light brightness over time.

Detailed description

5 In the present description the term 'camera' may be understood to mean a camera (such as a digital camera, or 'film' camera) operable to record moving images. The lighting system may therefore be for a lighting system for videography, broadcasting, cinematography, studio filming and/or location filming.

Figure 1 shows a schematic diagram of a 'flickerbox' lighting control system. The system comprises an analogue effect simulator, 300, a DMX distribution hub 302, an AC power generator 306, an AC power distribution module 302 and a plurality of incandescent
10 lights 102. The analogue effect simulator 300 simulates a lighting effect such as fire, or electrical sparking based on various parameters 104. The analogue effect simulator 300 produces data 106 such as brightness parameters that vary over time for producing the desired lighting effect. The data 106 is used to modulate the light 102 such that the desired lighting effect is produced. The user has very limited ability to alter many of the
15 parameters to adapt the lighting effect as desired

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the lamp device is an array of LEDs, preferably of differing colours. This arrangement does not require the DMX distribution hub 302, power elements 304, 306 as described above, and
20 is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp 120 for performing calculations. A control panel is provided at a back panel of the light 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an effect. In a variant a simple digital interface
25 is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the light 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation
30 parameters and transmitting that data to the light 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the
35 significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect

would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

- 5 Having the ability to control the special FX from the light source, which in itself is a bi-colour LED Fixture also entirely eliminates that aspect of the process, the user can simply adjust the colour temperature from the back of the unit, with a visible numeric display of that number eliminating significant time from the process.

- 10 This is also a significant limiting factor in the creation of effects such as fire which typically burn blue on hotter peaks. It would be possible using an LED light source containing in built special effects to reproduce both the warm “orange” light output near the tungsten end of the scale, whilst also adding a “colour swing blue” on the peaks from the same light source, something that would not be possible using a legacy system.

Examples of user defined parameters that the light containing in built special effects can customize in simulating a lighting effect are now described in more detail:

- 15 ♦ **Brightness:** The peak luminance of the effect from 1% to 100% of the lamp’s available luminance output.
- ♦ **Colour:** For multicolour effects this sets the range of colours used over the spectrum of red, green and blue. For single colour effects it sets the colour temperature of the light.
- 20 ♦ **Trigger:** To start the effect running. For example, a manual trigger may be selected for manually triggering the start of a lightning burst, TV screen, or other effect.
- ♦ **Frequency:** typically from 0.5Hz to 50Hz. This sets an average period between light peaks – e.g. a roaring fire may have a higher frequency than a single candle flame.
- 25 ♦ **Depth:** typically from 0% to 90%. This sets a base level of illumination of the effect. For example a fire may have a base level of 50% illumination superimposed on a level varying from 50% to 100% to simulate flickering flames.
- 30 ♦ **Rolling Shutter Compensation:** Film and TV cameras typically operate at frequencies between 24Hz and 60Hz. In order to provide consistent illumination during each camera frame, short time-period (e.g. stroboscopic) lighting effects should have a minimum pulse width which lasts at least one camera frame period. This parameter can be adjusted to suit the camera and frame rate.

- ◆ **'Colour Swing Blue'** simulates the effect of flame going up the chimney, 'peaks' within the fire effect can be switched to transition between yellow and blue, to match the colour of a flame, creating a more dynamic and 3D fire effect. The brighter the 'spark' the more blue the light output is. The colour of the output is therefore dependent on the brightness of the output (or vice versa).

Further examples of lighting effects are for example to mimic television screen flicker, cinema illumination, illumination in a vehicle passing through a tunnel, or any situation where the lighting varies over time in a characteristic manner. A simulation can be defined that represents the characteristics of the lighting effect, and suitable random parameters can be used to introduce a realistic variance in the lighting effect.

In a variant the simulator operates with pre-defined parameters and random numbers, without further user input of parameters. This can still provide a realistic lighting effect, albeit with less adaptation to the user's preferences.

Figure 3 illustrates a simple example of a method for simulating a lighting effect. In a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters. Where a random parameter is algorithmically generated it is only pseudo-random, but for the purposes of the simulation a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter. In a second step S2 a simulation is performed based on a simulation model and the received parameters. The nature of the simulation model can vary greatly, depending on the lighting effect that is desired and the sophistication of the desired simulation. The simulation calculates how the lighting changes over time in order to produce the desired lighting effect. Following simulation in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, in order to produce the desired lighting effect.

Figure 4 schematically shows an example showing a master light source 102 built into a lighting control unit 130 and a 'slave' light source 102-1 separate from the lighting control unit. The lighting effect simulator 100 creates data 106 characterising a lighting effect and controls the master light 102 as described above. The data 106 is transmitted to the slave light 102-1 via (for example) a serial communication interface (e.g. RS232, USB or DMX) or by wireless transmission (e.g. Wi-Fi®, Bluetooth® Zigbee®, or via a mobile communication network utilising protocols such as GSM (Groupe Special Mobile) 3GPP (3rd Generation Partnership), or 4G LTE (Long term evolution)). The additional 'slave' light source 102-1 thereby allows the production of a lighting effect with more than one light device but without duplication of controllers 130. Such additional light sources can for example increase the area of illumination or increase the power of the lighting effect.

The use of multiple lights 102 affords additional options for producing advanced effects. Figure 5 shows a time/brightness plot of a 'chase' effect. In this example, three lights produce outputs 200, 202 and 204 separated in time. In such a way, an effect of a light source (such as a passing car) can be replicated. The relative timing of the light sources
5 can be adjusted depending on the relative location of the sources, and the speed of the effect to be replicated. It should be noted that the 'fade up' and 'fade down' portions of each light output 200, 202, 204 overlap with one-another to more accurately replicate the effect of a moving object, as opposed to a element jumping from one location to another.

Related effects utilising similar timing controls are be 'paparazzi' of multiple flashes
10 coming from different locations, or a 'propeller' simulating a light source being obscured by a rotating propeller. The use of a single controller 130 may be used to control all of the lights 102 so as to ensure an appropriate delay (or absence of delay).

Figure 6 shows an example of a graphic user interface 800 for user input of simulation parameters. In the illustrated example the lighting effect to be simulated is a fire effect.
15 The user can select a fire activity (with a slider positioned from 'low' to 'high') to set a frequency parameter as described above; a fire colour; a peak brightness; a baseline brightness to set a depth parameter as described above; and a camera frequency. A wide range of further parameters can be provided for user input, for example if the fire activity, brightness and/or colour is to change over time (to mimic a fire dying down and
20 reducing to embers or to mimic addition of fuel to a fire). The user may also be provided with an option of superimposing different types of lighting effects, for example to mimic candlelight during a lightning storm.

In one example, the rolling shutter compensation controls a minimum light pulse to match the shutter speed or frame rate of the user's camera (camera frequency) to ensure even
25 illumination across the frame and eliminate possible strobing. Therefore, the duration of the light pulse is longer than one period of the camera's recording frequency, or in other words, the lighting value varies at a lower frequency than the frequency of the camera.

The lighting effect simulator 100 typically provides data 106 in the form of brightness and/or colour values that vary over time. In order to cause the light 102 to produce the
30 desired effect a lighting data converter may convert the data 106 from the lighting effect simulator 100 into a suitable signal for a particular light 102. For example for a light emitting diode (LED) array lighting the data conversion occurs at an LED lamp control logic that produces and supplies a separate pulse-width-modulation output for each LED colour to an LED drive circuit. A lighting data converter may be provided separately from
35 the lighting effect simulator 100 and the light 102 or it may be integrated with one or the other or both.

5 The light 102 in one example comprises an array of different types of LEDs, preferably red, green, blue and white LEDs, or a bi colour fixture comprising warm typically 2800K LEDs and 'cool' 7000K LEDs which blend together to create a range of colour from 3200-6300K. The array may be a panel, flood light, spot light, a cluster or any other arrangement of LEDs. This provides the ability for the lighting to produce light of any visible colour by varying the relative intensities of the different LEDs. The lighting may alternatively be a filament (incandescent), halogen or other type of lighting.

10 The simulation may be performed on the fly, with lighting data values output from the simulator 100 to the light 102 in near-real time, or the simulation may be performed in advance and the lighting data values output for storage and later use to enable quick reproduction on set or location.

15 The lighting control system can reduce the number of devices required to provide lighting effects, especially where the lighting effect simulator is integrated in a light. This can significantly reduce equipment costs and time required to set up equipment. The system is also more portable allowing power from its on internal power source or battery instead of requiring an external power generator or mains powered solution. The lighting control system can be used for studio and location filming lighting systems, and more generally for videography, broadcast and/or cinematography.

20 A non-exhaustive list of example effects that may be produced by the system are as follows:

- 25 • Strobe - The strobe range in one example is from 1hz up to 4hz. The last used strobe parameters are stored in non-volatile memory (which applies to any effect described herein). A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras.
- 30 • Lightning – this effect simulates lightning in a random manner, but a user may control the speed at which the lighting bursts re-occur. This effect is most realistic if the brightness is set to 100% and colour temperature is set at 6000K. A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras. The duration of the lightning flashes in one example is 20ms. The lightning strikes in one example come in bursts of between 2 and 8 random length pulses.
- Throb - Throb is a regular smoothly pulsing light
- Weld - this effect replicates a welding arc.
- 35 • Colour cycle – This is a regular smoothly pulsing light which fades between the tungsten and blue LEDs

- Fire – this effect replicates a fire with ‘dancing flames’ as is described in more detail below.
- Police – This effect is an emulation of an emergency services light, and may be most realistic in blue light.
- 5 • Television – This effect is an emulation of someone watching TV.

It should be appreciated that due to the nature of the light 102, the effects may be customised by a user, for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user-customised effects may be stored and recalled at a later time. The effects may be triggered on cue (for example from a director) by sending a signal over a wired remote trigger or wireless device.

It should also be appreciated that multiple effects may be emulated simultaneously, for example, fire and lightning may be present simultaneously using a single lighting unit.

15 An example of a simulation for producing a fire effect is now described in more detail.

Fire is simulated as a series of ‘sparks’. Each spark has the following random parameters:

- ♦ **Interval:** New sparks are generated at an interval which varies randomly between a defined maximum and minimum interval.
- 20 ♦ **Peak:** The peak luminance of each spark varies randomly between a defined minimum and maximum.
- ♦ **Ramp-up time:** The luminance of each spark ramps up to the peak at a randomly generated rate.
- ♦ **Fade-down time:** The fade from the peak is linked to the ramp-up time but is much slower – simulating the gradual decline in luminance of a burning ember.
- 25

If the interval is short with respect to the ramp-up and fade-down time, then sparks can overlap in time – in which case the brightest spark determines the lamp luminance.

The lighting effect simulator typically cycles round a loop calculating new lamp brightness and colour values. Alternatively the calculation can be triggered by an interrupt generated by a timer. The calculation is typically performed every 250µs.

30

The duration of each spark can be controlled by choosing whether or not to perform a new brightness calculation based on the value of a counter which is decremented every time an interrupt occurs. When the counter reaches zero it is either reset to its previous start value or, for a new spark, a new count start value is randomly generated. In this way
5 each spark has a different speed, duration and peak – simulating the look of a real flame.

Generating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of a real flame and replaying it at different speeds.

An example sequence of instructions for the simulation is as follows:

- 10 At the end of a spark up and down period:
 - Reset duration for next spark to between 2.5s to 5s
 - Generate new brightness targets for the next spark between 12.5% and 100% of current maximum brightness setting.
 - Offset the random brightness targets by the requested brightness floor value
- 15
 - Set the new peak brightness target for the new spark
 - Ensure the new targets are greater than the existing faded brightness value to prevent downward jumps
 - Set the fade direction to UP
- 20 Start new animation frame:
 - Calculate brightness fade step sizes:
 - Fade up fast, progressively larger fade step sizes
 - Change fade direction at peak
 - Fade down slow, progressively smaller fade step sizes
- 25
 - Set the frame rate for the new spark to a random value
 - prevent the curtailment of a long fade by a new short pulse: if the faded brightness is still > 25% of max then don't allow new FramePeriod to be less than old.
- 30 Figure 7 shows an example of the brightness varying over time produced according to a simulation as described above. Two peaks can be seen, one reaching 100% intensity and the other reaching 91% intensity. The first peak fades up from 10% to 100% in 0.85 seconds, and back down to 56% in 0.75 seconds. The second peak fades up from 56% to 91% in 0.33 seconds, and back down to 60% in 1.07 seconds. The fade up starts

shallower and becomes steeper as it progresses. The fade down starts steep and becomes shallower as it progresses. A toggle switch is also shown which toggles between 'Colour Swing Blue' and 'Monochrome'. Colour Swing Blue represents modifying the colour of peaks in brightness so as to replicate the increased temperature of sparks in a fire, Monochrome may be used when (for example) filming in black and white, or when altering colour of the effect may have deleterious effects on other elements of the scene (for example, rendering text difficult to read).

An example of a simulation for producing a lightning effect is now described in more detail. Lightning is simulated as a sequence of 'bursts' or groups of flashes. The number of flashes in each burst, the delay between bursts, the delay between each flash within the burst, and the amplitude of each flash are all set randomly within certain boundaries. The minimum 'on' time period of each flash can be set by the user to ensure full illumination of the camera frame. The lamp can also be set into a mode where a burst of flashes is triggered by the push of a button. In this way the effect can be triggered on demand by the user.

An example sequence of instructions for the simulation of lightning, with a series of bursts of flashes, is as follows:

At the end of a burst of flashes recalculate the parameters for the next burst:

- Reset the number of flashes in a burst to a random number between 2 and 10
- Reset the period to next burst to a random number between 2.5 and 5s.

Calculate parameters for each flash in a burst of flashes:

- Randomly modulate brightness of each flash slightly
- Reset the time to next flash to a random number between 8ms and 220ms
- Reset the 'on' flash duration to a random number between 8ms and 120ms
 - ensure a minimum off-period is maintained between flashes
- For the final flash set the duration to a random number between 10ms and 113ms

The lighting system, lighting effect simulator, lighting controller, lighting device, computing device, and/or computer program product may have one or more of the following features:

- built-in capability to generate a range of cinematic special effects by modulating the colour and brightness of the light output.

- the parameters of the effects can be controlled via a simple user interface on the lamp itself.
 - the parameters of the effects can be controlled remotely via WiFi or DMX from a smart phone or tablet.
- 5
- networked with other lights to produce a synchronised large area special effect.
 - minimum light pulse width can be adjusted to suit the shutter speed or frame rate of the user's camera to ensure even illumination across the frame.

Various other modifications will be apparent to those skilled in the art. It will be understood that the present invention has been described above purely by way of
10 example, and modifications of detail can be made within the scope of the invention. For example, it should be appreciated that the effect simulator 100 or the computing device 130 may be separate from any light 102, and connectable to lights 102, by either a wired or wireless connection.

The lighting effect simulator 100 may be provided by way of a suitably adapted
15 computing device 120 or 130 such as a PC, tablet or smart phone, with suitable software for user input of simulation parameters. The computing device 120 or 130 may be a suitably adapted light controller device with suitable controls for user input of simulation parameters

Reference numerals appearing in the claims are by way of illustration only and shall have
20 no limiting effect on the scope of the claims.

Claims

1. A method for controlling a lighting device to produce user customisable lighting effects, the method comprising:
 - calculating a time varying lighting value based on at least one simulation parameter; and
 - outputting said time varying lighting value thereby to simulate a lighting effect.
2. A method according to Claim 1 further comprising receiving said at least one simulation parameter for characterising a lighting effect.
3. A method according to Claim 1 or 2 wherein said at least one simulation parameter for characterising a lighting effect is random.
4. A method according to Claim 3 wherein said at least one simulation parameter for characterising a lighting effect is random within predefined boundaries.
5. A method according to Claim 3 or 4, wherein the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters.
6. A method according to Claim 5, wherein the random simulation parameter is in a range determined in dependence on one or more user-selectable simulation parameters.
7. A method according to any of the preceding claims, wherein the simulation parameter is a colour or colour temperature.
8. A method according to Claim 7 wherein the colour or colour temperature varies in dependence on a brightness lighting value.
9. A method according to any of the preceding claims, wherein the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.
10. A method according to any of Claims 2 to 9 further comprising receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.

11. A method according to any preceding claim, wherein the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; a fluctuation period; and a trigger.
12. A method according to any preceding claim, wherein the simulation parameter comprises a camera recording frequency.
13. A method according to Claim 12 wherein the time varying lighting value is calculated so as to vary at a slower rate than said camera recording frequency.
14. A method according to any of the preceding claims, wherein the simulation iterates through repeated cycles of receiving at least one random simulation parameter and simulating the lighting effect.
15. A method according to any of the preceding claims, wherein the lighting effect is designed to mimic at least one or more of: fire flickering; police light; television; lightning flashing; electrical sparking; and fireworks.
16. A method according to any of the preceding claims, wherein the lighting value comprises brightness and/or colour data.
17. A method according to Claim 16, further comprising converting brightness and/or colour data into lighting signals and outputting the lighting signal data.
18. A method according to any of the preceding claims, further comprising controlling one or more light in dependence on the output.
19. A method according to Claim 18, wherein the controlling comprises changing the brightness and/or colour of the light.
20. A method according to any of the preceding claims, further comprising receiving a definition of a trigger event, said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect.
21. A method according to Claim 20 further comprising detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.
22. A method according to any of the preceding claims, further comprising storing the calculated lighting value.
23. A method according to any of the preceding claims, wherein the controlling is for a

lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

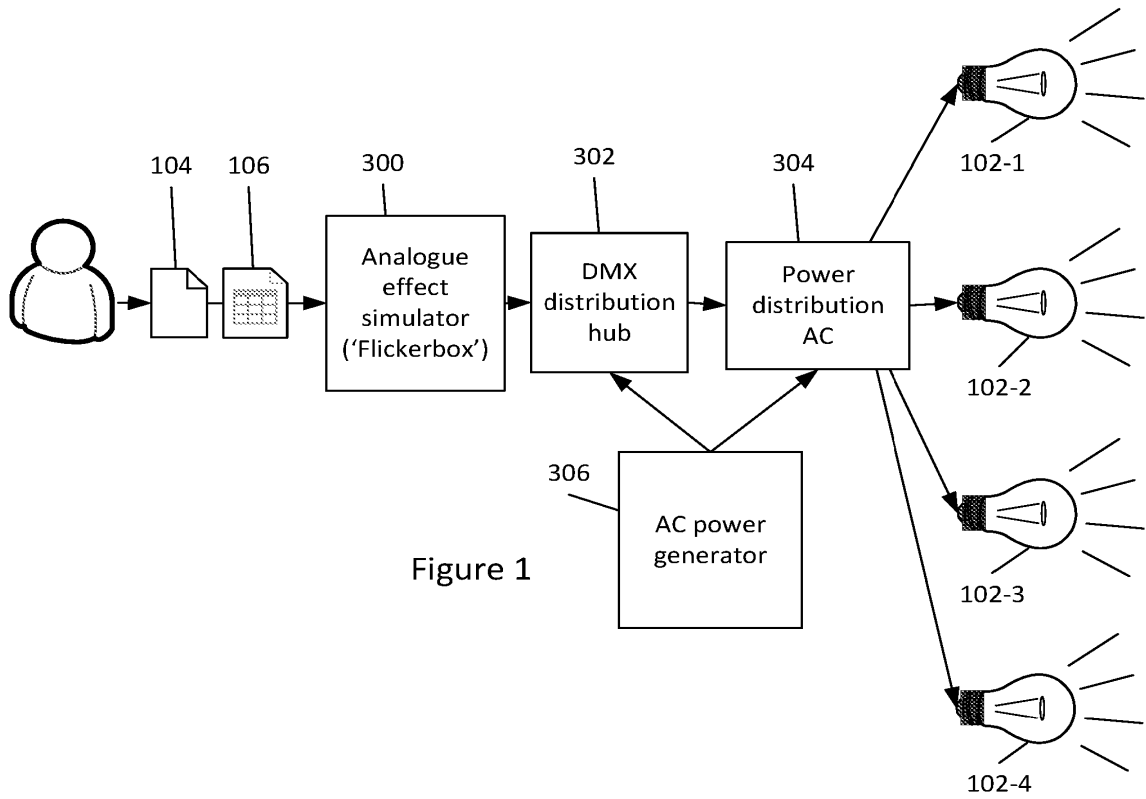
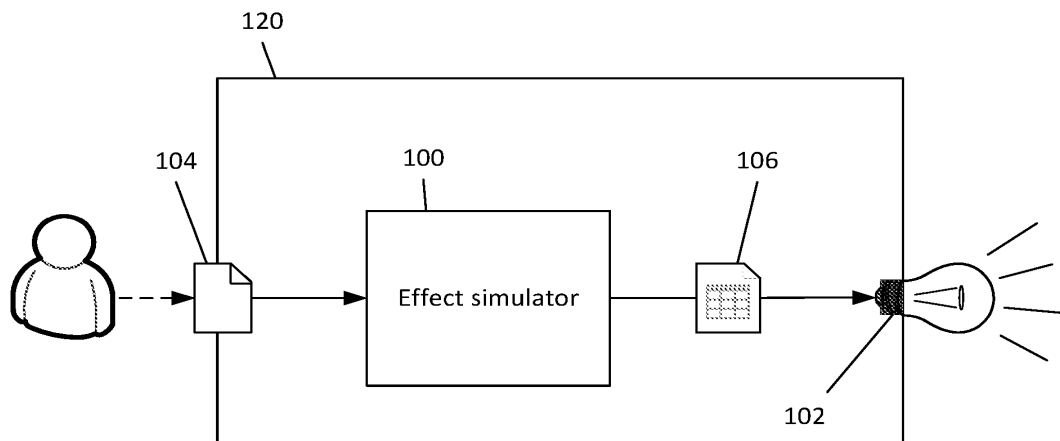
24. A method according to any preceding claim comprising controlling a plurality of lights in dependence on the output.
25. A method according to claim 24 wherein the said plurality of lights output different lighting values so as to simulate a lighting effect.
26. A method according to claim 25 wherein the output of said plurality of lights is offset in time.
27. A method according to claim 26 wherein the output of said plurality of lights overlap with one-another so as to simulate a moving light source.
28. A method according to any of claims 24 to 27 wherein one light is a master light and the others of said plurality of lights are slaves.
29. A computing device adapted to perform a method according to any one of the preceding claims.
30. A controller for a lighting device comprising a computing device according to Claim 29.
31. A controller for controlling a lighting device to produce a lighting effect, the controller comprising:
 - a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and
 - an output adapted to control a lighting device according to the determined variation of lighting over time.
32. A controller according to Claim 30 or 31 further comprising a random number source adapted to provide a random number for producing a random simulation parameter for characterising a lighting effect.
33. A controller according to any of Claims 30 to 32, wherein the controller is adapted to control a plurality of lighting devices in dependence on the time varying lighting value.
34. A controller according to any one of Claims 30 to 33, wherein the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.

35. A controller according to any one of Claims 30 to 34, wherein the controller comprises an input interface adapted to receive a user input.
36. A controller according to Claim 35, wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.
37. A controller according to any one of Claims 30 to 36, further comprising a converter adapted to convert brightness and/or colour data from the simulator into lighting signals for output by the output.
38. A controller according to any one of Claims 30 to 37, adapted to perform a method according to any one of Claims 1 to 28.
39. A lighting system comprising a controller according to any one of Claims 30 to 38 and at least one lighting device.
40. A lighting system according to Claim 39 wherein said controller and said lighting device are integrated in a combined unit.
41. A lighting system according to Claim 40 further comprising a further lighting device separate from said controller.
42. A lighting system according to any of Claims 39 to 41 wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.
43. A lighting device comprising a controller according to any one of Claims 30 to 38.
44. A lighting device according to Claim 43 wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.
45. A computer program product for controlling a lighting device to produce a lighting effect, the computer program product adapted to perform, when executed, the steps of:
 - calculating a time varying lighting value based on at least one simulation parameter; and
 - outputting said time varying lighting value thereby to simulate a lighting effect.
46. A computer program product according to Claim 45, adapted to perform, when executed, the steps of a method according to any one of Claims 2 to 28.

- 47. A method substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 48. A computing device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 49. A controller for a lighting device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 50. A lighting system substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 51. A lighting device substantially as herein described and/or as illustrated with reference to the accompanying figures.
- 52. A computer program product substantially as herein described and/or as illustrated with reference to the accompanying figures.

Abstract

The present invention relates to a method for controlling a lighting device to produce user customisable lighting effects, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect. The invention also relates to a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time. In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.



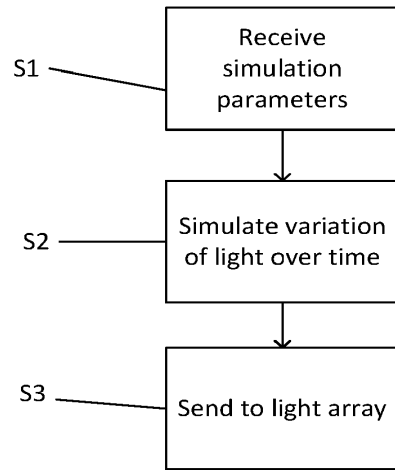


Figure 3

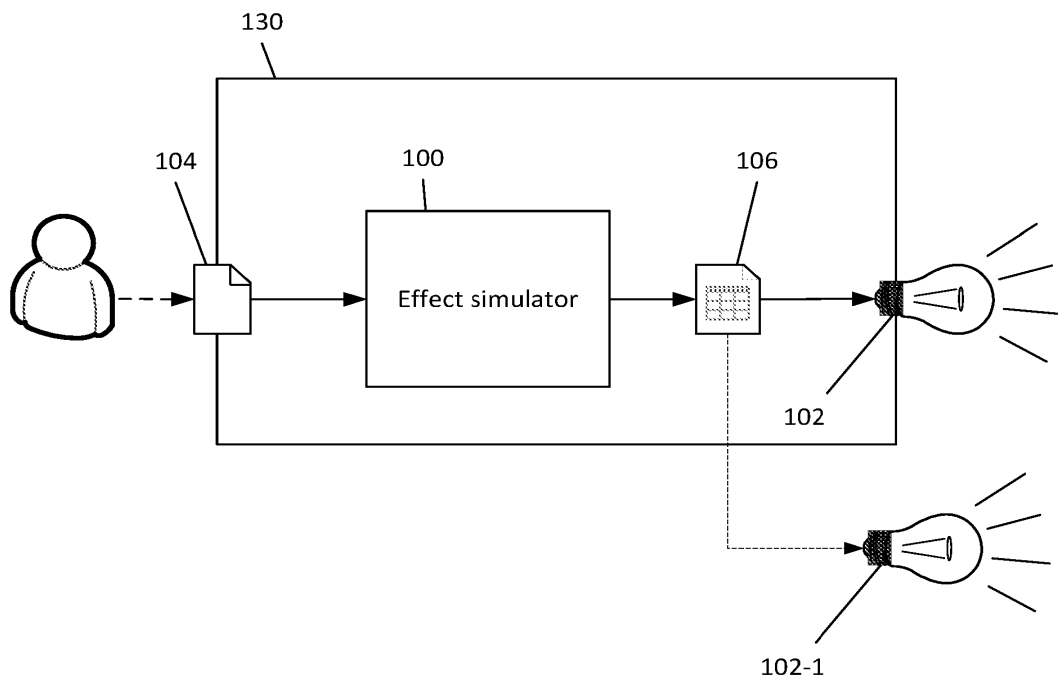


Figure 4

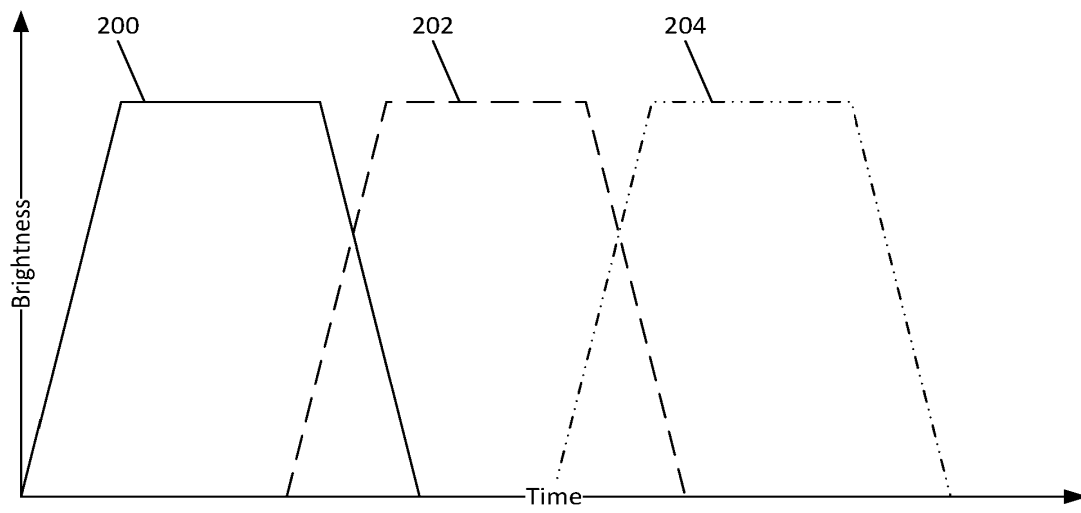


Figure 5

800

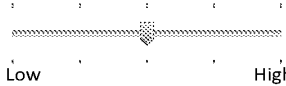
Light control system	
Fire effect	
Parameter	Setting
More info Fire activity	 Low High
More info Fire colour	<div>2000K</div>
More info Peak brightness	<div>80%</div>
More info Baseline brightness	<div>40%</div>
More info Camera frequency	<div>60Hz</div>
<div></div> <div>Colour Swing Blue Monochrome</div>	

Figure 6

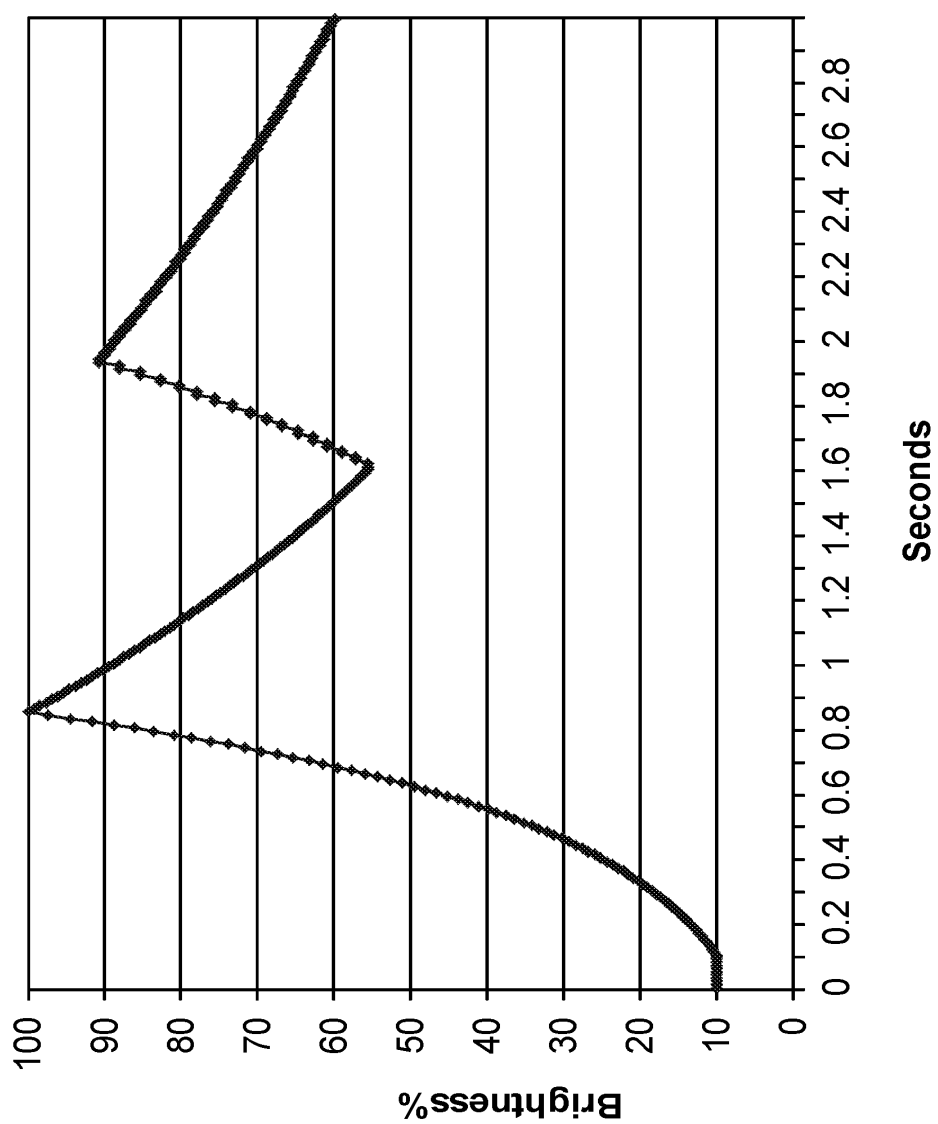


Figure 7



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

67801	7590	03/09/2018
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.		
P.O. BOX 16446		
ARLINGTON, VA 22215		

EXAMINER	
PHAM, THAI N	

ART UNIT	PAPER NUMBER
2844	

NOTIFICATION DATE	DELIVERY MODE
03/09/2018	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):

usptomail@ipatent.co.il

Office Action Summary	Application No. 15/481,460	Applicant(s) GAMMONS ET AL.	
	Examiner THAI PHAM	Art Unit 2844	AIA (First Inventor to File) Status Yes

-- 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 MONTHS 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 08/17/2017.
☐ 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) 55-74 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) 55-74 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ 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 04/07/2017 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)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 11/28/2017

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

4) ☐ Other: _____

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Receipt of preliminary amendment filed on 10/10/2013 is acknowledged. Claims 1-54 have canceled. Claims 55-74 are newly added. Thus claims 55-74 are pending in the instant application.

Priority

Receipt is acknowledged of certified copies of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDSs) submitted on 11/28/2017 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

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 limitation recites "a controller for controlling at least one lighting device," "a calculating device" "a wired or wireless interface," and "a random number source" must be shown or the feature(s) canceled from the claim(s). 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.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show **"a controller for controlling at least one lighting device," "a calculating device" "a wired or wireless interface," and "a random number source"** as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). 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.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

Claims 55-74 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of copending application No. 15820469. Although the claims at issue are not identical, they are not patentably distinct from each other because the claim limitations of the copending application no. 15820469 clearly anticipated the claim limitations of the pending application. They are containing the same essential limitations. They are both containing same structure includes controller couple to a bicycle wheel configured to do the same function.

Regarding claims 55, 67 and 74, the limitations of the applicant's claims are obvious variations of the mapped claims above. While the pending claim uses different

vernacular than the copending claims, one of ordinary skilled in the art would recognize that the claims are directed to substantially the same invention. The principle difference is that the pending claims are broader in scope than the copending claims. It is generally understood that anticipation is the epitome of obviousness. Alternatively, the elimination of an element and its function is generally held to be within the skill of the art.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI PHAM whose telephone number is (571)270-5518. The examiner can normally be reached on 5/4/9 M-F 9:00 AM - 6:30PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571)272-1662. 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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/THAI PHAM/
Primary Examiner, Art Unit 2844
03/05/2018

Notice of References Cited	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS ET AL.	
	Examiner THAI PHAM	Art Unit 2844	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
	A	US-				
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
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	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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.

<p><i>Index of Claims</i></p> 	<p>Application/Control No.</p> <p>15481460</p>	<p>Applicant(s)/Patent Under Reexamination</p> <p>GAMMONS ET AL.</p>
	<p>Examiner</p> <p>THAI PHAM</p>	<p>Art Unit</p> <p>2844</p>

✓	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	03/05/2018							
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	4	-							
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	36	-							

<i>Index of Claims</i> 	Application/Control No. 15481460	Applicant(s)/Patent Under Reexamination GAMMONS ET AL.
	Examiner THAI PHAM	Art Unit 2844

✓	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									
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<i>Index of Claims</i> 	Application/Control No. 15481460	Applicant(s)/Patent Under Reexamination GAMMONS ET AL.
	Examiner THAI PHAM	Art Unit 2844

✓	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	03/05/2018							
	73	✓							
	74	✓							



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BIB DATA SHEET

CONFIRMATION NO. 5642

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
15/481,460	04/07/2017	315	2844	69726		
APPLICANTS Rotolight Limited, London, UNITED KINGDOM; INVENTORS Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM; Andrew FRANCIS, Witham, UNITED KINGDOM; Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM; ** CONTINUING DATA ***** This appln claims benefit of 62/319,809 04/08/2016 ** FOREIGN APPLICATIONS ***** UNITED KINGDOM 1606907.2 04/20/2016 ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 12/20/2017						
Foreign Priority claimed ☒ Yes ☐ No 35 USC 119(a-d) conditions met ☒ Yes ☐ No Verified and Acknowledged <u>/THAI N PHAM/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY UNITED KINGDOM	SHEETS DRAWINGS 5	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
ADDRESS MARTIN D. MOYNIHAN d/b/a PRTSI, INC. P.O. BOX 16446 ARLINGTON, VA 22215 UNITED STATES						
TITLE LIGHTING SYSTEM AND CONTROL THEREOF						
FILING FEE RECEIVED 800	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

Search Notes 	Application/Control No. 15481460	Applicant(s)/Patent Under Reexamination GAMMONS ET AL.
	Examiner THAI PHAM	Art Unit 2844

CPC- SEARCHED		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP

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

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"15481460"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:32
S2	4	((("GAMMONS") near3 ("Roderick") near3 ("Allen"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:33
S3	378	((("FRANCIS") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S4	3	((("GAMMONS") near3 ("Roderick") near3 ("Aaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S5	3	S2 and S3 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:34
S6	1	((("ROTOLIGHT") near3 ("LIMITED"))).AANM.	USPAT	OR	ON	2018/02/20 11:35
S8	22	("20070159347" "20080129226" "5307295" "5921659" "5924784" "7038399" "7353071").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:44
S9	3	("3787752").PN. OR ("7365649").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:46
S10	26	"2424525"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:48
S11	48723	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:23
S12	4	"20080129226"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:24
S13	1	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 15:21
S14	5	"2005052751"	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/01 18:49

EAST Search History

S15	9	light\$4 with control\$4 with simulat\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:39
S16	574	light\$4 with control\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S17	48822	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S18	37	S17 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S19	181	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:50

3/ 5/ 2018 2:20:27 PM

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional).

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3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

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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 2 hours 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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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	15/481,460		
		Filing Date	April 07, 2017		
		First Named Inventor	GAMMONS Roderick Allen et al		
		Group Art Unit	2844		
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	15	Official Action Dated 10 April 2018 From the US Patent and Trademark Office Re. Application No. 15/820,469. (19 pages)			
	16	Official Action Dated 22 March 2018 From the US Patent and Trademark Office Re. Application No. 15/849,793. (14 pages)			
	17	Official Action Dated 28 March 2018 From the US Patent and Trademark Office Re. Application No. 15/849,819. (17 pages)			
	18	Philips "Controlling LED Lighting: Transform Environments, Provide Confort and Security, Save Energy", Philips Color Kinetics, Product Catalog, P.1-36, 2011.			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
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¹ Applicant's unique citation designation number (optional).

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³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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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Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan/Benjamin Frohlinger		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
Total in USD (\$)				120

Electronic Acknowledgement Receipt	
EFS ID:	33312042
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Benjamin Frohlinger
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	30-JUL-2018
Filing Date:	07-APR-2017
Time Stamp:	08:17:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 120
RAM confirmation Number	073018INTEFSW00007849501407
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	_USPTOltr.pdf	24120	no	3
			89fbba10b54332a91f8dc5b7a5e587acd28794		
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	_form1449.pdf	45160	no	2
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Warnings:					
Information:					
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3	Foreign Reference	8-298091.pdf	1654556	no	21
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Warnings:					
Information:					
4	Foreign Reference	9-298092.pdf	875610	no	15
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Warnings:					
Information:					
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Information:					
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Information:					
7	Foreign Reference	12-298094.pdf	448652	no	14
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Information:					

14	Fee Worksheet (SB06)	fee-info.pdf	30415 1ae6c8d2690e0bc5fd2320bab64dfc5509228301	no	2
Warnings:					
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Total Files Size (in bytes):			28407715		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF [CineSFX]	§	Group Art Unit: 2844
Examiner: PHAM Thai N.	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☐ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☒ Please charge the fee of \$120 (Small Entity Status) set forth in 37 CFR 1.17(p) to Deposit Account 501407. Appropriate fee attached.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 27 July 2018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

RESPONSE

Sir:

This is in response to the United States Patent and Trademark Office Action mailed March 9, 2018, which response is being made on or before September 9, 2018, and for which a three month extension of time fee is due and enclosed herewith.

Applicant submits this response for entry into the record, in which:

Amendments to the Specification begin on page 2.

Amendments to the Claims begin on page 4.

Amendments to the Drawings begin on page 8.

Remarks begin on page 9.

Please amend the above-identified application as follows:

In the Specification:

Please insert at Page 10, line 14, the following paragraph:

Figure 8 is a flow diagram of a method for controlling a lighting device

Please amend the Paragraph beginning at Page 10, line 20, as follows:

Figure 1 shows a schematic diagram of a 'flickerbox' lighting control system. The system comprises an analogue effect simulator, 300, a DMX distribution hub 302, an AC power generator 306, an AC power distribution module 302 and a plurality of incandescent lights 102. The analogue effect simulator 300 simulates a lighting effect such as fire, or electrical sparking based on various parameters—104. The analogue effect simulator 300 produces data 106 such as brightness parameters that vary over time for producing the desired lighting effect. The data 106 is used to modulate the light 102 such that the desired lighting effect is produced. The user has very limited ability to alter many of the parameters to adapt the lighting effect as desired.

Please amend the Paragraph beginning at Page 11, line 1, as follows:

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the ~~lamp device~~ light 102 is an array of LEDs, preferably of differing colours. This arrangement does not require the DMX distribution hub 302, power elements 304, 306 as described above, and is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp device 120 for performing calculations. An input interface 105 including a control panel is provided at a back panel of the ~~light-lamp device~~ 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an effect. The user input simulation parameters are optionally stored in memory 220. In a variant a simple digital interface is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the ~~light-lamp device~~ 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the

lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation parameters and transmitting that data to the ~~light-lamp device~~ 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

Please amend the Paragraph beginning at Page 17, line 9, as follows:

It should be appreciated that due to the nature of the light 102, the effects may be customised by a user. As shown in Figure 8, a user may input simulation parameters 802 in order to customise a lighting effect, for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user-~~customised effects~~ input simulation parameters may be stored 804 in memory 220 and recalled 806 from the memory 220 at a later time. A time varying lighting value is calculated 808 based on the recalled simulation parameter and output 810 to the light 102. The effects may be triggered on cue (for example from a director) by sending a signal over a wired remote trigger or wireless device.

In the Claims:

1-74. (Cancelled).

75. (New) A method for controlling a lighting device to produce a range of different user customisable lighting effects, the method comprising:

receiving user input of at least one user input simulation parameter to customise a lighting effect;

storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;

recalling from said memory said at least one stored user input simulation parameter;

calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and

outputting to said lighting device said time varying lighting value thereby to simulate the lighting effect.

76. (New) The method according to Claim 75, wherein said user customisable simulation parameter is stored locally.

77. (New) The method according to Claim 75, wherein the simulation parameter comprises a colour or colour temperature.

78. (New) The method according to Claim 75, wherein the simulation parameter is related to at least one of: an effect frequency; an effect speed; a colour; a colour temperature; a trigger; a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal (peak) brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation time period.

79. (New) The method according to Claim 75, wherein the lighting effect comprises a short time-period (e.g. stroboscopic) lighting effect with a user adjustable minimum pulse width.

80. (New) The method according to Claim 75, wherein the user customisable simulation parameter comprises a parameter indicative of a group consisting of: a camera recording frequency; a camera shutter speed; and a camera frame rate.

81. (New) The method according to Claim 75, wherein the lighting effect is designed to mimic at least one of: fire; lightning; police car light; television; a neon flickering sign; a candle; muzzle (gunshot); welding; spark/short circuit; a scan (e.g. fingerprint scanner); paparazzi flashes; fireworks; flashes (strobe); a propeller; a (nuclear) explosion; and a wormhole.

82. (New) The method according to Claim 75, wherein the lighting value comprises brightness and/or colour data.

83. (New) The method according to Claim 75, further comprising converting at least one of brightness and colour data into a lighting signal and outputting the lighting signal to the lighting device.

84. (New) The method according to Claim 75, wherein the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

85. (New) The method according to Claim 75, further comprising controlling at least one further lighting device.

86. (New) A controller adapted to control a lighting device to produce a range of different user customisable lighting effects, the controller comprising:
an input interface adapted to receive user input of at least one user input simulation parameter to customise a lighting effect;

a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and
 an effect simulator adapted to:

recall from said memory said at least one stored user input simulation parameter; and
 calculate a time varying lighting value based on said recalled simulation parameter;

wherein the effect simulator is adapted to output said calculated time varying lighting value to the lighting device thereby to simulate a lighting effect.

87. (New) The controller according to Claim 86, wherein the controller is adapted to control at least one further lighting device.

88. (New) The controller according to Claim 86, wherein the controller comprises an input interface and wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons.

89. (New) A lighting system comprising the controller according to Claim 86, and at least one lighting device.

90. (New) The lighting system according to Claim 89, wherein said controller and said lighting device are integrated in a combined unit.

91. (New) The lighting system according to Claim 89, wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

92. (New) A lighting device comprising the controller according to Claim 86, wherein the lighting device comprises at least one light emitting diode.

93. (New) A lighting device according to Claim 92, wherein the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

94. (New) A computer program product comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects, the computer program product adapted to perform, when executed, the steps of:

- receiving user input of at least one user input simulation parameter to customise a lighting effect;
- storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;
- recalling from said memory said at least one stored user input simulation parameter;
- calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and
- outputting to said lighting device said time varying lighting value thereby to simulate a lighting effect.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

LETTER TO CHIEF DRAFTSMAN

Sir:

Permission is requested to add new Figure 8.

Statement

The content of the new drawing includes no new matter.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 7, 2018

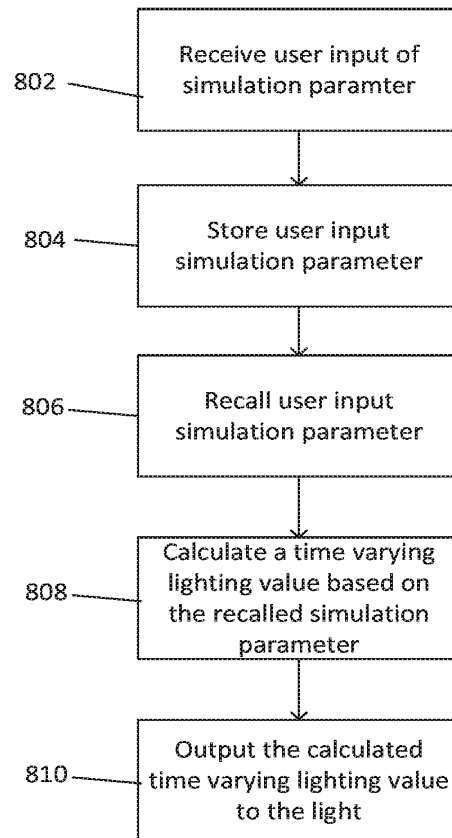


Figure 8

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

LETTER TO CHIEF DRAFTSMAN

Sir:

Permission is requested to correct Figures 2 and 4 as shown in red ink on the attached photocopies.

Since the foregoing are all relative minor changes and do not include new matter, the formal drawings, which are being submitted herewith in an accompanying letter, include the above-requested changes.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 7, 2018

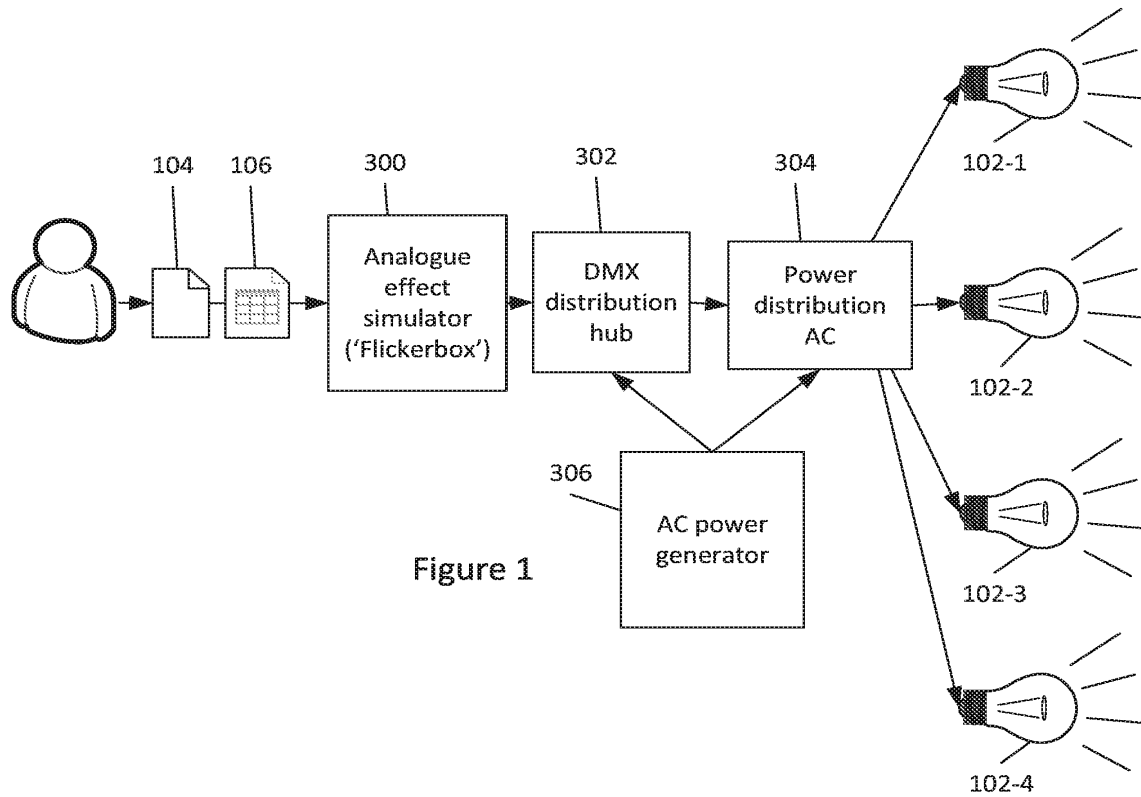


Figure 1

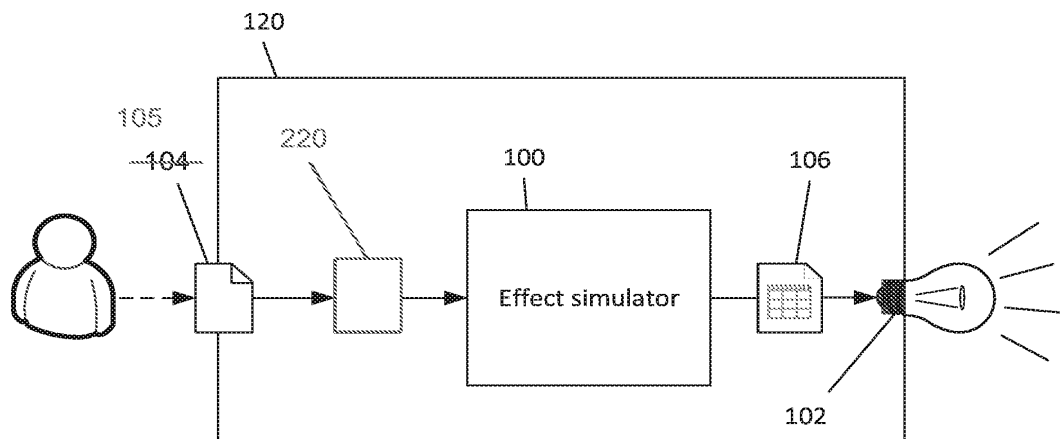


Figure 2

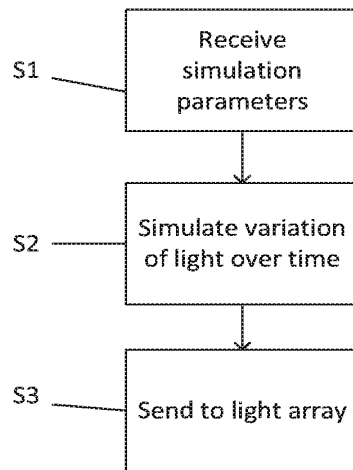


Figure 3

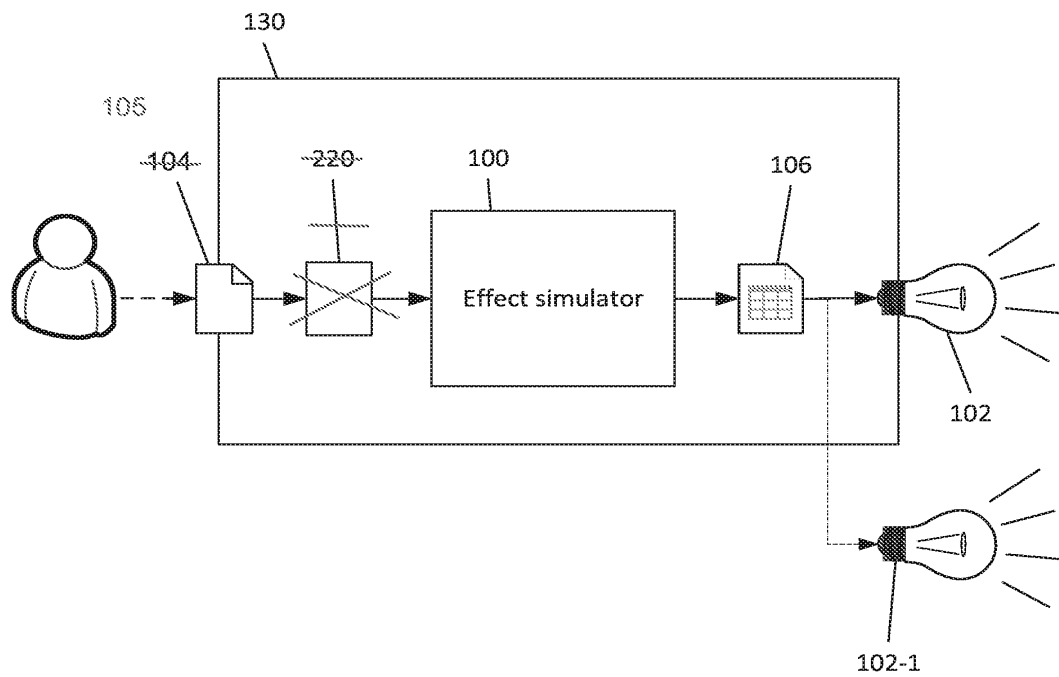


Figure 4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

FORMAL DRAWINGS

Sir:

Applicant encloses herewith a new set of formal drawings, six (6) sheets, for the above-identified patent application.

Statement

The content of the replacement drawings includes no new matter.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 7, 2018

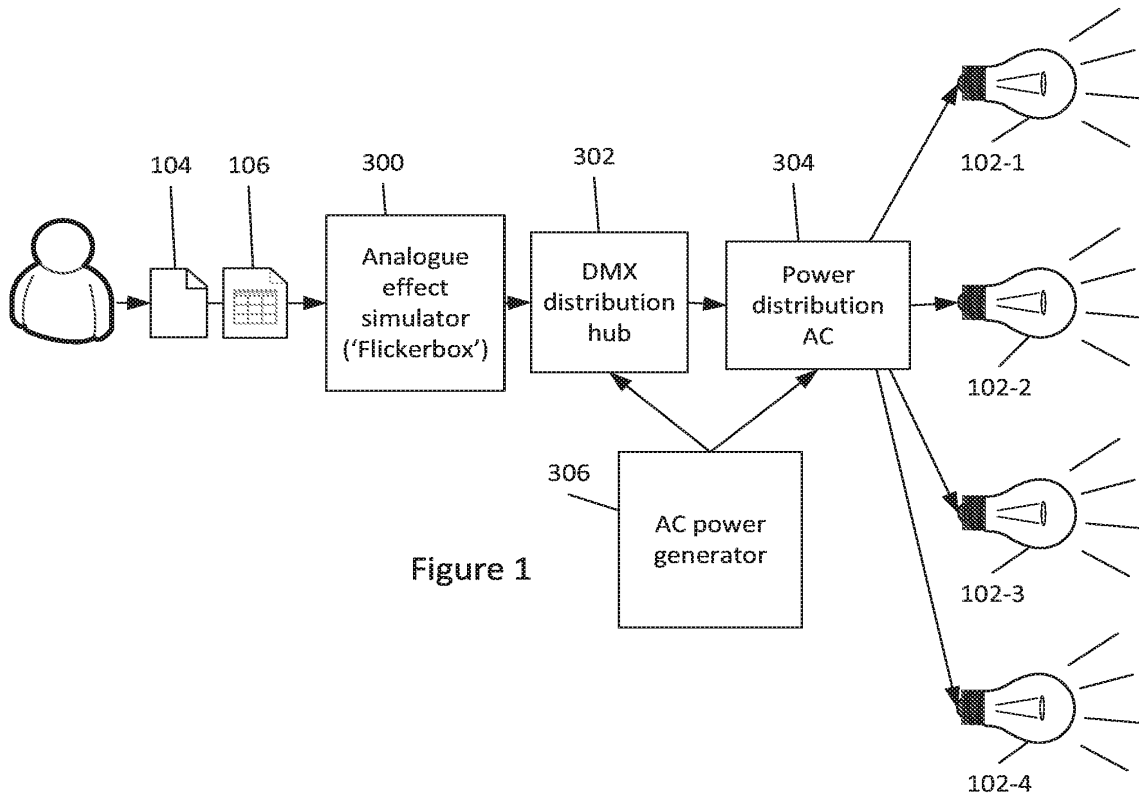


Figure 1

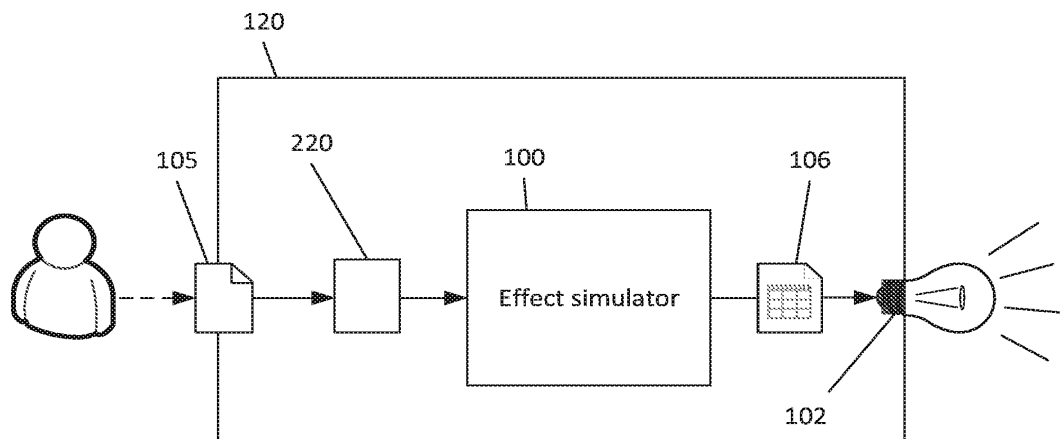


Figure 2

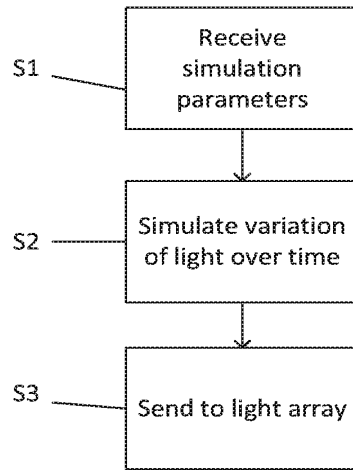


Figure 3

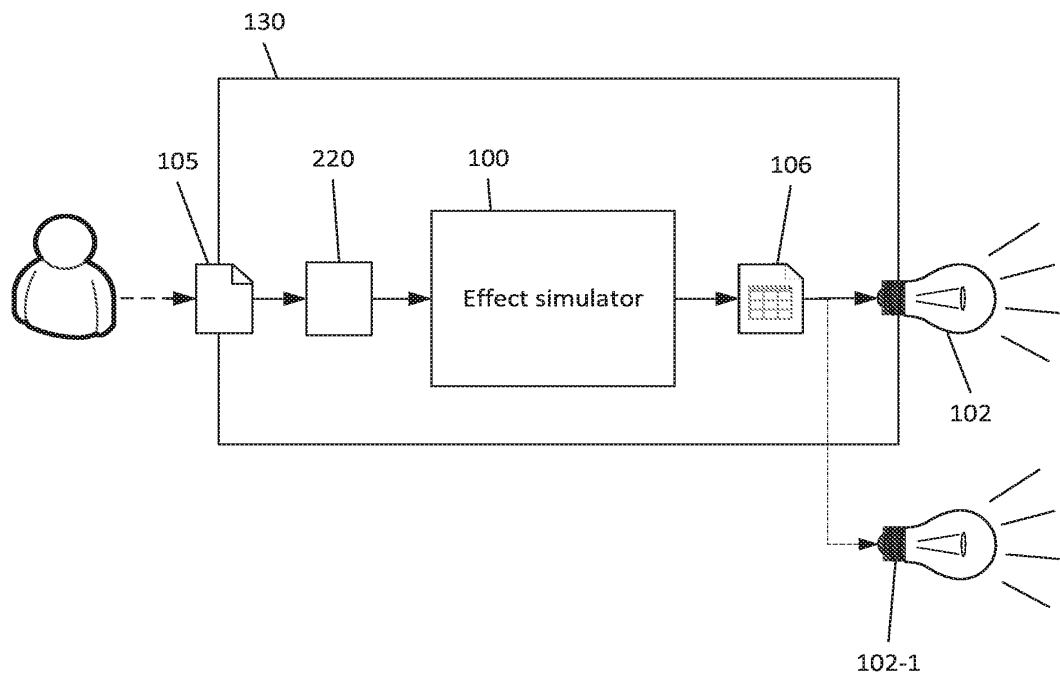


Figure 4

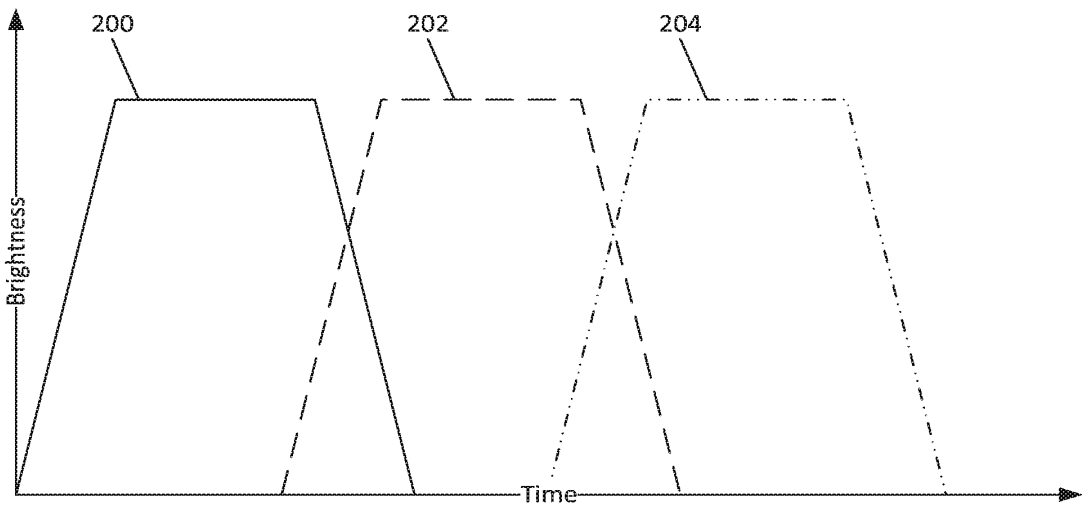


Figure 5

800

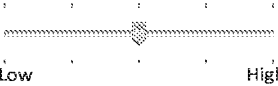
Light control system	
Fire effect	
Parameter	Setting
More info Fire activity	
More info Fire colour	<div>2000K</div>
More info Peak brightness	<div>80%</div>
More info Baseline brightness	<div>40%</div>
More info Camera frequency	<div>60Hz</div>
<div></div>	
Colour Swing Blue	Monochrome

Figure 6

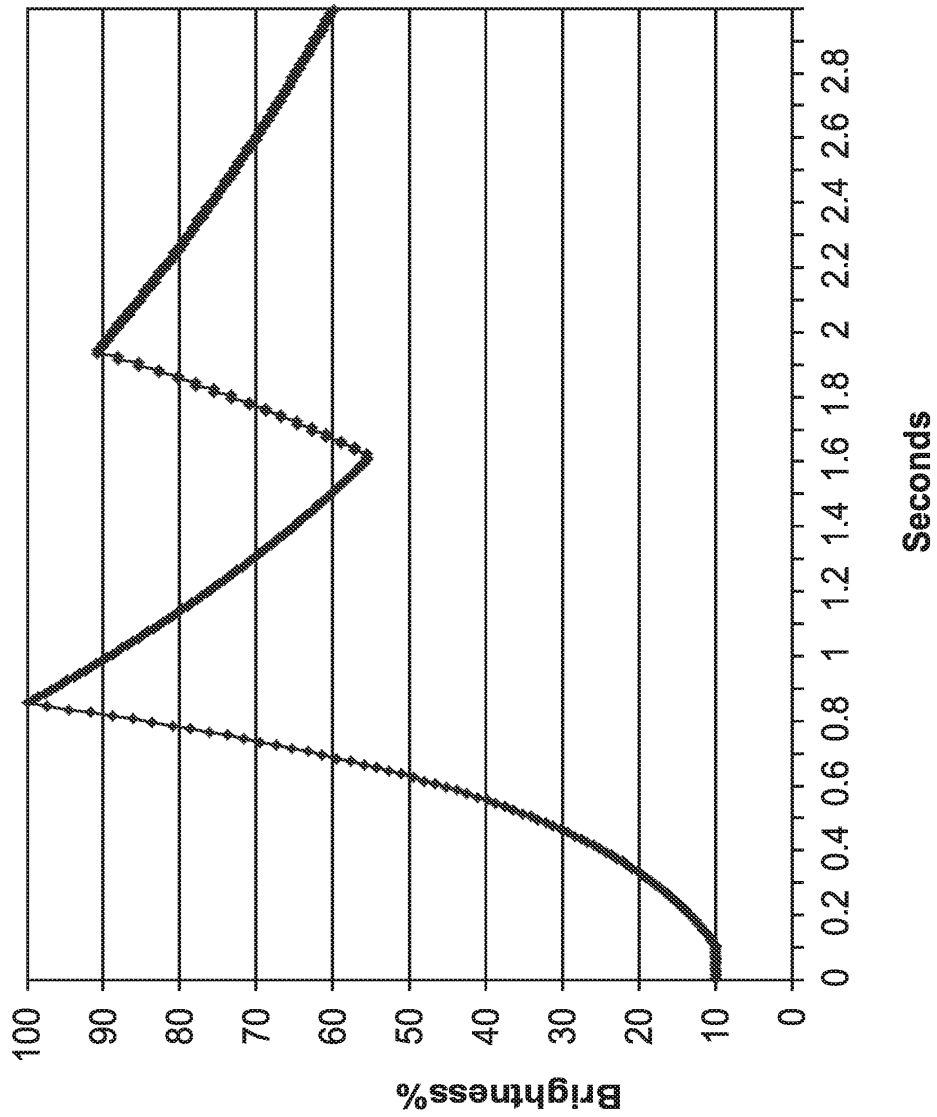


Figure 7

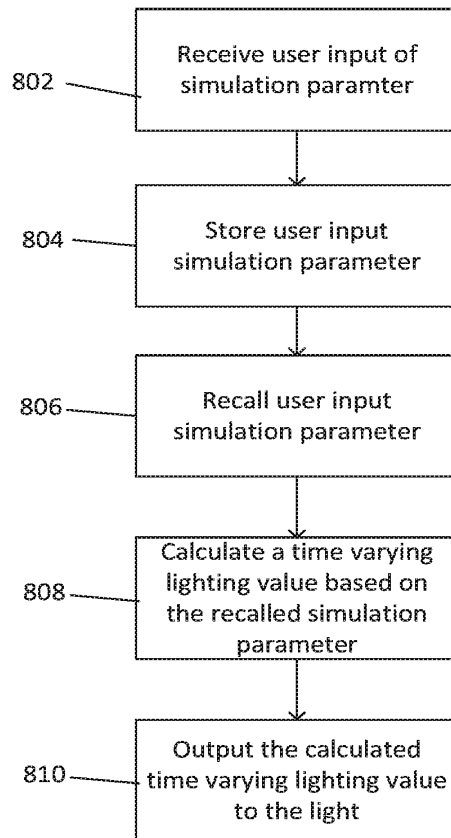


Figure 8

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 3 months with \$0 paid	2253	1	700	700
Miscellaneous:				
Total in USD (\$)				700

Electronic Acknowledgement Receipt	
EFS ID:	33652266
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	07-SEP-2018
Filing Date:	07-APR-2017
Time Stamp:	04:57:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 700
RAM confirmation Number	090718INTEFSW00007356501407
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		69726ResponseOfficeAction9Mar2018.pdf	558104	yes	25
			01c838f3aa0cab6e5a3174c2cad8628b591e8268		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Extension of Time		1	1	
	Amendment/Req. Reconsideration-After Non-Final Reject		2	2	
	Specification		3	4	
	Claims		5	8	
	Applicant Arguments/Remarks Made in an Amendment		9	9	
	Applicant Arguments/Remarks Made in an Amendment		10	13	
	Transmittal Letter		14	14	
	Drawings-only black and white line drawings		15	15	
	Transmittal Letter		16	16	
	Drawings-other than black and white line drawings		17	18	
	Transmittal Letter		19	19	
	Drawings-only black and white line drawings		20	25	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30418	no	2
			9989c0a7d27860311156ddac368c24313ad2a8ea		

Warnings:	
Information:	
Total Files Size (in bytes):	588522
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

PETITION AND FEE FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136(a)

Sir:

- (1) This is a petition for an extension of time to respond to the Office Action mailed **March 9, 2018**, for a period of **three (3) months**.
- (2) Applicant is a:
☒ small entity ☐ verified statement attached
 ☐ verified statement filed
- | | | |
|--|------------------|--------------------|
| (3) Extensions | Fees for | Fee for other than |
| (months) | small entity | small entity |
| ☒ three months | \$ 700.00 | \$ 1,400.00 |
- (4) An amendment ☒ is filed herewith
 ☐ has been filed
- (5) Please charge the extension fee and any other amount required to Deposit Account No. **50-1407**.
- (6) The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. **50-1407**. This authorization and request is not limited to payment of all fees associated with this communication, including any Extension of Time fee, not covered by check or specific authorization, but is also intended to include all fees for the presentation of extra claims under 37 CFR §1.16 and all patent processing fees under 37 CFR §1.17 throughout the prosecution of the case. This blanket authorization does not include patent issue fees under 37 CFR §1.18.

Respectfully submitted,
/Martin D. Moynihan/
Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 7, 2018

SCORE Placeholder Sheet for IFW Content

Application Number: 15481460

Document Date: 09/07/2018

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via eDAN using the Supplemental Content tab, or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.

Form Revision Date: August 26, 2013

Amendments to the Drawings:

Applicant attaches herewith a set of drawings with amendments to Figures 2 and 4 and added new Figure 8, as required by the Examiner. A complete set of formal drawings (6 sheets) are also attached herewith as required by the Examiner.

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 55-74 are in this Application. The drawings have been objected to. Claims 55-74 have been rejected under the double patenting rejection. Claims 55-74 have been cancelled herewith without prejudice.

Claims 75-94 are new, based on the specification, the drawings and the cancelled claims. No new matter is added.

Claim Amendments

Applicant canceled the pending claims and replaced them with replacement claims 21-40. The new claims find basis in the application as filed. In particular, the claims are based on the original claims, and page 17 lines 9-15 of the description as filed.

Specification Objections

Applicants amended the specification to make a number of clarifying amendments to the description.

Drawings Objections

Drawings have been rejected as the drawings must show every feature of the invention specified in the claims. Applicant amended Figures 2 and 4 and added a new Figure 8 to reflect the replacement claims. The amended drawings are attached.

With regard to new Claim 1, each step of the method is shown in new Figure 8. Basis for new Figure 8 can be found at page 17 lines 9-15 of the description as on file at the USPTO (this passage has itself been amended to refer to this new figure). The same applies to the steps referred to in Claim 20.

With regard to new Claim 12, each feature of this claim is shown in the figures as follows:

- a. A “controller adapted to control a lighting device” was already shown in Figure 4 and labelled 130. Basis for this interpretation of the figures can be

found at page 14 line 2 which refers to “a lighting control unit 130” and page 14 line 12 which refers to “controllers 130”.

- b. An “input interface” is shown in amended Figures 2 and 4 and is labelled 105. Page 11 lines 7-8 of the description has been amended accordingly.
- c. A “memory” is shown in amended Figures 2 and 4 and is labelled 220. Pages 11 and 17 of the description have been amended accordingly.
- d. An “effect simulator” was already shown in Figures 2 and 4 and is labelled 100.

Double Patenting

Claims 55-74 are provisionally rejected on the ground of non-statutory double patenting as being unpatentable over claims 1-20 of co-pending application No. 15/820469. It is submitted that the new claims are distinct from the claims US Patent Application No. 15/820,469.

Conclusion

No Disclaimers or Disavowals

Although the present response may include amendments to the application or claims, or characterizations of claim scope or referenced art, Applicants do not concede that previously pending claims in this application are not patentable over the cited references. Rather, any amendments or characterizations are being made to expedite the issuance. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that relate to subject matter supported by the instant application, including subject matter specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this application, or any parent, child or related prosecution history should not infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the instant application.

In view of the above amendments and remarks it is respectfully submitted that the claims are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited.

Should the Examiner have any questions or comments as to the form, content, or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below prior to mailing the next Official Action. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Any fees associated with this paper, for its entry into the record, may be charged to Deposit Account No. 50-1407.

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17, or credit any overpayment, to Deposit Account No. 50-1407.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR § 1.33 and 37 CFR § 1.34 concerning any subject matter of this application by video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications may be made of record in the application file.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 7, 2018

Enclosures:

- Petition for Extension (Three Months)
- Letter to Chief Draftsman
- New Drawing Sheet
- Letter to Chief Draftsman
- Annotated Drawing Sheets
- Formal Drawing Transmittal Sheet
- Complete Set of Replacement Drawing Sheets

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 15/481,460		Filing Date 04/07/2017		☐ 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), (l), 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	09/07/2018		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 20		Minus	** 20	= 0	X \$50 =	0	
	Independent (37 CFR 1.16(h))		* 3		Minus	***3	= 0	X \$230 =	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									
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§		
	§		
	§	Roderick Allen GAMMONS et al.	Confirmation No.: 5642
	§		
Serial No.:	§	15/481,460	
	§		
Filed:	§	April 7, 2017	Art Unit: 2844
	§		
For:	§	LIGHTING SYSTEM AND	Attorney Docket: 69726
	§	CONTROL THEREOF	
	§		
Examiner:	§	Thai N. PHAM	

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

PETITION TO ADD INVENTORS UNDER 37 C.F.R. §1.48(c)

Sir:

This is a Petition to Add Inventor, for which a fee of \$300.00 is due. Please charge my Deposit Account 50-1407 for this fee, as well as any additional fees due.

The above-identified patent application as originally filed included three (3) inventors, namely Roderick Allen GAMMONS, Andrew FRANCIS and Roderick Aaron GAMMONS. By error, without deceptive intent, the name of one (1) additional inventor, namely **Stefan LANGE**, was left out.

An executed Declaration and Statement under 37 CFR 3.73(c) are attached herewith, along with a Supplemental Application Data Sheet (ADS).

Consequently, please add **Stefan LANGE** as the 4th inventor to the above-identified patent application.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: November 12, 2018

Doc Code: Oath

Document Description: Oath or declaration filed

PTO/AIA/08 (06-12)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**

☒ Declaration
Submitted
With Initial
Filing

☐ Declaration
Submitted After initial
Filing (surcharge
(37 CFR 1.16(f))
required

Attorney Docket
Number

69726

First Named Inventor

Roderick Allen GAMMONS

COMPLETE IF KNOWN

Application Number

15/481,460

Filing Date

April 7, 2017

Art Unit

2844

Examiners Name

Thai N. PHAM

LIGHTING SYSTEM AND CONTROL THEREOF

(Title of the Invention)

As below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,
OR

☒ United States Application or PCT Number 15/481,460

Filed On April 7, 2017

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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.

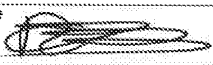
Attorney Docket Number: 69726

PTO/AIA/08 (08-12)

Approved for use through 01/31/2014. OMB 0851-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

DECLARATION — Utility or Design Patent Application

Direct all Correspondence to:	☒ The address associated with Customer Number:	67801	OR	☐ Correspondence address below
Name				
Address				
City		State	Zip	
Country	Telephone		Email	
<p>I have reviewed and understand the contents of the above identified application.</p> <p>I acknowledge the duty to disclose information material to the patentability of the claims, as defined by 37 CFR 1.56.</p>				
LEGAL NAME OF SOLE OR FIRST INVENTOR: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)				
Roderick Allen GAMMONS				
Inventor's Signature 			Date (Optional)	
Residence: City	State	Country		
Staines Upon Thames	Surrey	Great Britain		
Mailing Address				
135 Chertsey Lane				
City	State	Zip	Country	
Staines Upon Thames	Surrey	TW18 3LR	Great Britain	
☒ Additional inventors are being named on the <u>1</u> supplemental sheet(s) PTO/AIA/10 attached hereto				

Attorney Docket Number: 69726

PTO/AIA/10 (05-12)®

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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

SUPPLEMENTAL SHEET FOR DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet (for PTO/AIA/08,09)
Page 1 of 1	

Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Andrew FRANCIS			
Inventor's Signature			Date (Optional)
Witham Residence: City	Essex State	Great Britain Country	
4 Wickham Bishops Mailing Address			
Witham City	Essex State	CM8 3NU Zip	Great Britain Country
Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Roderick Aaron GAMMONS			
Inventor's Signature 			Date (Optional)
Winkfield Residence: City	Windsor State	Country	
Vetch Cottage, Lovel Road, Mailing Address			
Winkfield City	Windsor State	SL4 2EU Zip	Great Britain Country
Legal Name of Additional Joint Inventor, if any: (E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Stefan LANGE			
Inventor's Signature 			25 OCTOBER 2018 Date (Optional)
Shepperton Residence: City	Middlesex State	Great Britain Country	
Cedar Lodge, Towpath Mailing Address			
Shepperton City	Middlesex State	TW17 9LL Zip	Great Britain Country

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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 (1-800-756-9199) and select option 2.

ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned (hereinafter called the "Assignor"):

Stefan LANGE
Cedar Lodge Towpath, Shepperton
TW17 9LL Middlesex
Great Britain

hereby sell(s), assign(s) and transfer(s) to:

Rotolight Limited
c/o London Law, The White House, 57-63 Church Road, Wimbledon Village
SW19 5SB London
Great Britain

(hereinafter called the "Assignee"), its successors, assigns, nominees or other legal representatives, the undersigned's entire rights, title and interest in and to the invention titled:

LIGHTING SYSTEM AND CONTROL THEREOF

described and claimed in the following Patent Application:

US Patent Application No. 15/481,460,
filed on April 7, 2017,
and identified as Attorney Docket No. 69726

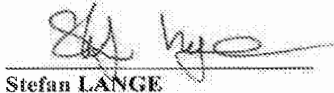
and in and to said Patent Application, and all original and reissued Patents granted therefore, and all divisions and continuations thereof, any corresponding PCT Patent Application and the National Phases thereof, including the right to apply and obtain Patents in all other countries, the right to claim priority under International Conventions, and the Letters Patent which may be granted thereon:

covenant that the undersigned have (has) the full right to convey the entire interest therein assigned;

authorize(s) and request(s) the Registrar of Patents, and any Official of any country whose duty it is to issue Patents on applications as aforesaid, to issue the said Letters Patent to the said Assignee;

and agree(s) to sign all lawful papers, make all rightful oaths, do all lawful acts requisite for such Patent Applications, and do everything possible to aid said Assignee to apply for, obtain and enforce Patent protection for said invention.

ASSIGNOR


Stefan LANGE

Date: 25th October '18

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Roderick Allen GAMMONS (et al)Application No./Patent No.: 15/481,460Filed/Issue Date: April 7, 2017Titled: LIGHTING SYSTEM AND CONTROL THEREOFRotolight Limited
(Name of Assignee)a Corporation
(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- 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 _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Inventors Roderick Allen GAMMONS, Andrew FRANCIS and Roderick Aaron GAMMONS To: Rotolight Limited
The document was recorded in the United States Patent and Trademark Office at
Reel 043748, Frame 0754, or for which a copy thereof is attached.
2. From: Inventor Stefan LANGE To: Rotolight Limited
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]s

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.

STATEMENT UNDER 37 CFR 3.73(c)

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.
4. 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.
5. 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.
6. 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(s).
- ☐ As required by 37 CFR 3.73(c)(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 assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

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

/Martin D. Moynihan/
Signature

Martin D. Moynihan
Printed or typed Name

November 12, 2018
Date

40338
Title or Registration Number

Supplemental ADS

PTO/AIA/14 (OB-12)

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	<u>15/481,460</u>
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.

This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Roderick Allen		GAMMONS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Staines Upon Thames	State/Province	Surrey	Country	GB
Mailing Address of Inventor:					
Address 1	135 Chertsey Lane				
Address 2					
City	Staines Upon Thames	State/Province	Surrey		
Postal Code	TW18 3LR	Country	GB		
Inventor 2					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Andrew		FRANCIS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Witham	State/Province	Essex	Country	GB
Mailing Address of Inventor:					
Address 1	4 Wickham Bishops				
Address 2					
City	Witham	State/Province	Essex		
Postal Code	CM8 3NU	Country	GB		
Inventor 3					

Supplemental ADS

PTO/AIA/14 (OB-12)

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	<u>15/481,460</u>
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Roderick Aaron		GAMMONS		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Winkfield	State/Province	Windsor	Country	GB
Mailing Address of Inventor:					
Address 1	Vetch Cottage, Lovel Road				
Address 2					
City	Winkfield	State/Province	Windsor		
Postal Code	SL4 2EU	Country	GB		

Inventor 4

Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	<u>Stefan</u>		<u>LANGE</u>		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	<u>Shepperton</u>	State/Province	<u>Middlesex</u>	Country	<u>GB</u>
Mailing Address of Inventor:					
Address 1	<u>Cedar Lodge, Towpath</u>				
Address 2					
City	<u>Shepperton</u>	State/Province	<u>Middlesex</u>		
Postal Code	<u>TW17 9LL</u>	Country	<u>GB</u>		

Supplemental ADS

PTO/AIA/14 (OB-12)

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	<u>15/481,460</u>
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐	An Address is being provided for the correspondence information of this application.
Customer Number	67801
Email Address	martin@ipatent.co.il

Application Information:

Title of the Invention	LIGHTING SYSTEM AND CONTROL THEREOF				
Attorney Docket Number	69726	Small Entity Status Claimed ☒			
Application Type	Non Provisional				
Subject Matter	Utility				
Suggested Class (If any)		Sub Class (If any)			
Suggested Technology Center (If any)					
Total Number of Drawing Sheets (if any)	56	Suggested Figure for Publication (if any)			

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	67801		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Supplemental ADS

PTO/AIA/14 (OB-12)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	69726
	Application Number	<u>15/481,460</u>
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF	

Prior Application Status	Pending <u>Expired</u>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Claims benefit of provisional	62/319,809	2016-04-08

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Application Number	Country	Filing Date (YYYY-MM-DD)	Priority Claimed
1606907.2	GB	2016-04-20	☒ Yes ☐ No

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h) (3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

☒ Assignee	☐ Legal representative under 35 U.S.C 117
☐ Person to whom the inventor is obligated to assign.	☐ Person who shows sufficient propriety interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:	

Supplemental ADS

PTO/AIA/14 (OB-12)

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	69726
		Application Number	<u>15/481,460</u>
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF		

Name of the Deceased or Legally Incapacitated Inventor :			
If the Assignee is an Organization check here. ☒			
Organization Name		Rotolight Limited	
Mailing Address Information:			
Address 1		c/o London Law, The White House, 57-63 Church Road, Wimbledon Village	
Address 2			
City		London	State/Province
Country	GB	Postal Code	SW19 5SB
Phone Number		Fax Number	
Email Address			

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/Martin D. Moynihan/		Date (YYYY-MM-DD)	2018-11-12	
First Name	Martin	Last Name	Moynihan	Registration Number	40338

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
CORRECTION OF INVENTORSHIP ON MERITS	2819	1	300	300
Total in USD (\$)				300

Electronic Acknowledgement Receipt	
EFS ID:	34272852
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	12-NOV-2018
Filing Date:	07-APR-2017
Time Stamp:	07:05:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$300
RAM confirmation Number	111318INTEFSW00008801501407
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	69726PetitiontoAddInventorStefanLANGE.pdf	35807	no	1
			2332d33b7bf65129fc4cb44f2acb09d389b07ee		
Warnings:					
Information:					
2	Oath or Declaration filed	69726ExecutedDeclarationStefanLANGE.pdf	593177	no	3
			be1615a742659e85b9d9fd109f149f39008e37f2		
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	69726ExecutedAssignmentStefanLANGESecondStatement.pdf	335848	no	3
			2943921fc74a1d8735e9c07ac455b26c128851c6		
Warnings:					
Information:					
4	Application Data Sheet	69726SupplementalApplicationDataSheet.pdf	78223	no	5
			a4e3b0fb37a4144f94106fa5ae301b2f2a9da7ae		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
5	Fee Worksheet (SB06)	fee-info.pdf	30146	no	2
			9ff1f7be28d470f1f83a8b4179238c48da7e9a34		
Warnings:					
Information:					
Total Files Size (in bytes):			1073201		

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.

Document code: WFEE

United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

CONFIRMATION NO. 5642
37 CFR 1.48 ACKNOWLEDGEMENT
LETTER



Date Mailed: 11/20/2018

NOTICE OF ACCEPTANCE OF REQUEST UNDER 37 CFR 1.48(a)

This is in response to the applicant's request under 37 CFR 1.48(a) submitted on 11/12/2018.

The request under 37 CFR 1.48(a) to correct the inventorship, to correct or update the name of an inventor, or to correct the order of names of joint inventors is accepted.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/byemane/



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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
15/481,460	04/07/2017	2844	800	69726	20	3

CONFIRMATION NO. 5642
UPDATED FILING RECEIPT

67801
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215



Date Mailed: 11/20/2018

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**

Inventor(s)

Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM;
Andrew FRANCIS, Witham, UNITED KINGDOM;
Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM;
Stefan Lange, Shepperton, UNITED KINGDOM;

Applicant(s)

Rotolight Limited, London, UNITED KINGDOM;

Power of Attorney: The patent practitioners associated with Customer Number 67801

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/319,809 04/08/2016

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.)

UNITED KINGDOM 1606907.2 04/20/2016 Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

Request to Retrieve - This application either claims priority to one or more applications filed in an intellectual property Office that participates in the Priority Document Exchange (PDX) program or contains a proper **Request to Retrieve Electronic Priority Application(s)** (PTO/SB/38 or its equivalent). Consequently, the USPTO will attempt to electronically retrieve these priority documents.

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LIGHTING SYSTEM AND CONTROL THEREOF

Preliminary Class

315

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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 (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801	7590	12/31/2018		
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.			EXAMINER	
P.O. BOX 16446			PHAM, THAI N	
ARLINGTON, VA 22215				
			ART UNIT	PAPER NUMBER
			2844	
			NOTIFICATION DATE	DELIVERY MODE
			12/31/2018	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):

usptomail@ipatent.co.il

Office Action Summary	Application No. 15/481,460	Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM	Art Unit 2844	AIA Status Yes

-- 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 MONTHS 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 09/07/2018.
☐ 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) 75-94 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) 75-94 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ 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 09/07/2018 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)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
 Paper No(s)/Mail Date 11/28/2017 and 07/30/2018.

3) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date ____.

4) ☐ Other: ____.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

This Office Action is responsive to the applicant's amendment submitted on 09/07/2018. Claims 55-74 have been canceled. Claims 75-94 are newly added. Figures 2 and 4 have been amended with a replacement sheet, and figure 8 is newly added. Thus, claims 75-94 are currently pending in the instant application.

Response to Amendment

1. The amendment filed 09/07/2018 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

"receiving user input of at least one user input simulation parameter to customise a lighting effect; storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; recalling from said memory said at least one stored user input simulation parameter" recites in claims 75 and 94,

"a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter" recites in claim 86.

New claims 75, 86 and 94 are directed to an invention that is independent or distinct from the invention originally claimed.

Applicant is required to cancel the new matter in the reply to this Office Action.

Specification

2. The amendment filed on 09/07/2018 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the prior-filed application is as follows:

Figures 2 and 4 amended and figure 8 is newly added in the amendments to the specification, the limitation recites "receiving user input of at least one user input simulation parameter to customise a lighting effect; **storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; recalling from said memory said at least one stored user input simulation parameter**" recites in claims 75 and 94, and the limitation recites "**a memory adapted to store said at least one user input simulation parameter**, said at least one user input simulation parameter depending on the lighting effect being simulated; **and an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter**" recites in claim 86 do not disclose in the original disclosure. The amendment cannot introduce a new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 75-94 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention.

The disclosure of the aforementioned prior-filed application fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application: claims 75-94.

Specifically, claims 75, 86 and 94 include limitations that are not disclosed, described in the specifications of the original disclosure. Some exemplary limitations from these claims are herein recited for further reviews:

"receiving user input of at least one user input simulation parameter to customise a lighting effect; storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being

simulated; recalling from said memory said at least one stored user input simulation parameter” recites in claims 75 and 94,

“a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter” recites in claim 86.

Note: for compact prosecution purposes the examiner interprets the claims above as best understood of the original claims and maintain the rejection of the previous office action.

Drawings

5. 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 limitation recites “a controller for controlling at least one lighting device,” “a calculating device” “a wired or wireless interface,” and “a random number source” must be shown or the feature(s) canceled from the claim(s). 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.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show "a controller for controlling at least one lighting device," "a calculating device" "a wired or wireless interface," and "a random number source" as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). 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.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(I)(1) - 706.02(I)(3) for applications not subject to examination under the first inventor to file

provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claims 55-74 or (newly claims 75-94) are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of copending application No. 15820469. Although the claims at issue are not identical, they are not patentably distinct from each other because the claim limitations of the copending application no. 15820469 clearly anticipated the claim limitations of the pending application. They are containing the same essential limitations. They are both containing same structure includes controller couple to a bicycle wheel configured to do the same function.

Regarding claims 55, 67 and 74, the limitations of the applicant's claims are obvious variations of the mapped claims above. While the pending claim uses different vernacular than the copending claims, one of ordinary skilled in the art would recognize that the claims are directed to substantially the same invention. The principle difference is that the pending claims are broader in scope than the copending claims. It

is generally understood that anticipation is the epitome of obviousness. Alternatively, the elimination of an element and its function is generally held to be within the skill of the art.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Response to Arguments

7. Applicant's arguments filed 09/07/2018 have been fully considered but they are not persuasive.

The amendment introduces new matter into the disclosure, therefore the drawings and the new claims are not considered. Therefore the claims are interpreted as best understood as the original claims.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI N PHAM whose telephone number is (571)270-5518. The examiner can normally be reached on M-F 9:00 am-5:00 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

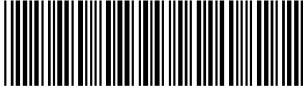
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DOUGLAS OWENS can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 15/481,460
Art Unit: 2844

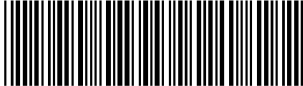
Page 11

/Thai Pham/
Primary Examiner, Art Unit 2844
12/20/2018

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS									
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47									
CLAIM		DATE							
Final	Original	03/05/2018	12/20/2018						
	1	-	-						
	2	-	-						
	3	-	-						
	4	-	-						
	5	-	-						
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	39	-	-						
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	41	-	-						
	42	-	-						

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018							
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	90		✓							
	91		✓							
	92		✓							
	93		✓							
	94		✓							

Search Notes 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
Updated East search	12/20/2018	TP

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	158	("20080084701" "20080259598" "20080278957" "20080304269" "20090184666" "5851063" "5912477" "7334917" "20070274080" "20080089053" "20080137347" "20080278952" "20090160363" "6563139" "7213940" "7358954" "5851063" "20060105482" "20070171145" "20070263393" "20070278934" "20080084685" "20080106907" "20090246895" "20100165001" "6132072" "7005679" "7144130" "20070280624" "20080278950" "20100079059" "20100103678" "20070139923" "20070223219" "20080106895" "20070170447" "20070236911" "20070278974" "20070279440" "20080084700" "20080112168" "20080112183" "20080310154" "20090108269" "20100102967" "20100254129" "5631190" "7564180" "7759854" "20070274063" "20070279903" "20080304261" "20100259182" "5803579" "7135664" "7213940" "20070137074" "20080088248" "20080112170" "20080130298" "20080309255" "20100102199" "4918487").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/12/21 19:00
L3	2	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/12/21 19:41
S1	1	"15481460"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:32
S2	4	((("GAMMONS") near3 ("Roderick") near3 ("Allen"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:33
S3	378	((("FRANCIS") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S4	3	((("GAMMONS") near3 ("Roderick") near3 ("Aaron"))).INV.	US-PGPUB; USPAT;	OR	ON	2018/02/20 11:34

			USOCR			
S5	3	S2 and S3 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:34
S6	1	((("ROTOLIGHT") near3 ("LIMITED"))).AANM.	USPAT	OR	ON	2018/02/20 11:35
S8	22	("20070159347" "20080129226" "5307295" "5921659" "5924784" "7038399" "7353071").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:44
S9	3	("3787752").PN. OR ("7365649").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:46
S10	26	"2424525"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:48
S11	48723	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:23
S12	4	"20080129226"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:24
S13	1	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 15:21
S14	5	"2005052751"	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/01 18:49
S15	9	light\$4 with control\$4 with simulat\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:39
S16	574	light\$4 with control\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT;	OR	ON	2018/03/02 17:41

EAST Search History

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S17	48822	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S18	37	S17 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S19	181	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:50
S21	2	"15849793"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/14 15:59

12/ 21/ 2018 8:01:18 PM

C:\Users\tpham3\Documents\EAST\Workspaces\15481460.wsp

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	15/481,460		
		Filing Date	April 07, 2017		
		First Named Inventor	GAMMONS Roderick Allen et al		
		Group Art Unit	2844		
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	15	Official Action Dated 10 April 2018 From the US Patent and Trademark Office Re. Application No. 15/820,469. (19 pages)			
	16	Official Action Dated 22 March 2018 From the US Patent and Trademark Office Re. Application No. 15/849,793. (14 pages)			
	17	Official Action Dated 28 March 2018 From the US Patent and Trademark Office Re. Application No. 15/849,819. (17 pages)			
	18	Philips "Controlling LED Lighting: Transform Environments, Provide Confort and Security, Save Energy", Philips Color Kinetics, Product Catalog, P.1-36, 2011.			
Examiner Signature	/Thai Pham/			Date Considered	12/21/2018

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TP/

Bibliographic Data

Application No: 15/481,460

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged:

Examiner's Signature

Initials

Title:

LIGHTING SYSTEM AND CONTROL THEREOF

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/07/2017	315	2844	69726
RULE			

APPLICANTS

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INVENTORS

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Andrew FRANCIS Witham, UNITED KINGDOM

Roderick Aaron GAMMONS Winkfield, UNITED KINGDOM

Stefan Lange Shepperton, UNITED KINGDOM

CONTINUING DATA

This application has PRO of 62319809 04/08/2016

FOREIGN APPLICATIONS

UNITED KINGDOM 1606907.2 04/20/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

** SMALL ENTITY **

STATE OR COUNTRY

UNITED KINGDOM

ADDRESS

MARTIN D. MOYNIHAN d/b/a PRTSI, INC.

P.O. BOX 16446

ARLINGTON, VA 22215

UNITED STATES

FILING FEE RECEIVED

\$1,100

15/481,460 - GAU: 2844

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i> Application Number		15/481,460
				Filing Date		April 07, 2017
				First Named Inventor		GAMMONS Roderick Allen et al
				Art Unit		2844
				Examiner Name		Thai Pham
Sheet	1	of	2	Attorney Docket Number		69726
U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Document Number	Publication Date DD-MMM-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Number-Kind Code ² (if known)				
	1	2007/0159347	12-Jul-2007	Weitzel		
	2	2008/0129226	05-Jun-2008	DeWitt et al.		
	3	5,307,295	26-Apr-1994	Taylor et al.		
	4	5,921,659	13-Jul-1999	Hunt et al.		
	5	5,924,784	20-Jul-1999	Chliwnyj et al.		
	6	7,038,399	02-May-2006	Lys et al.		
	7	7,353,071	01-Apr-2008	Blackwell et al.		
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Documents	Publication Date DD-MMM-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Country Code ³ Number ² Kind Code ³ (if known)				
	8	GB 2209229	04-May-1989	Pearce-Harvey et al.		
	9	EP 2383608	02-Nov-2011	Wu		
	10	GB 2424525	27-Sep-2006	Rafter et al.		
	11	GB 2482562	08-Feb-2012	Hjerde		
	12	JP H0448588	18-Feb-1992	Iwata		
	13	WO 01/05195	18-Jan-2001	Lys et al.		
	14	WO 2005/052751	09-Jun-2005	Chemel et al.		
Examiner Signature	/Thai Pham/			Date Considered	12/20/2018	

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PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

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				Filing Date	April 07, 2017
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Examiner Name	Thai Pham				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	15	European Search Report and the European Search Opinion Dated 01 August 2017 From the European Patent Office Re. Application No. 17165609.3. (7 Pages)			
	16	Patents Act 1977: Combined Search and Examination Report Under Sections 17 and 18(3) Dated 13 June 2016 From the Intellectual Property Office of the United Kingdom Re. Application No. GB1606907.2. (7 Pages)			
	17	Patents Act 1977: Examination Report under Section 18(3) Dated 30 August 2017 From the Intellectual Property Office of the United Kingdom Re. Application No. GB1606907.2 (3 Pages)			
Examiner Signature	/Thai Pham/			Date Considered	12/20/2018

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DO NOT ENTER: /TP/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	

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

RESPONSE

Sir:

This is in response to the United States Patent and Trademark Office Action mailed March 9, 2018, which response is being made on or before September 9, 2018, and for which a three month extension of time fee is due and enclosed herewith.

Applicant submits this response for entry into the record, in which:

Amendments to the Specification begin on page 2.

Amendments to the Claims begin on page 4.

Amendments to the Drawings begin on page 8.

Remarks begin on page 9.

Please amend the above-identified application as follows:

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL <p style="font-size: small;">Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000, provides for continued examination of an utility or plant application filed on or after June 8, 1995. See The American Inventors Protection Act of 1999 (AIPA).</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Application Number</td> <td style="padding: 2px;">15/481,460</td> </tr> <tr> <td style="padding: 2px;">Filing Date</td> <td style="padding: 2px;">April 7, 2017</td> </tr> <tr> <td style="padding: 2px;">Examiner Name</td> <td style="padding: 2px;">Thai N. PHAM</td> </tr> <tr> <td style="padding: 2px;">First Named Inventor</td> <td style="padding: 2px;">Roderick Allen GAMMONS</td> </tr> <tr> <td style="padding: 2px;">Group Art Unit</td> <td style="padding: 2px;">2844</td> </tr> <tr> <td style="padding: 2px;">Confirmation No.:</td> <td style="padding: 2px;">5642</td> </tr> <tr> <td style="padding: 2px;">Attorney Docket Number</td> <td style="padding: 2px;">69726</td> </tr> </table>	Application Number	15/481,460	Filing Date	April 7, 2017	Examiner Name	Thai N. PHAM	First Named Inventor	Roderick Allen GAMMONS	Group Art Unit	2844	Confirmation No.:	5642	Attorney Docket Number	69726																																				
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Confirmation No.:	5642																																																		
Attorney Docket Number	69726																																																		
<p>This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.</p> <p>NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53 (d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.</p>																																																			
<p>1. Submission required under 37 C.F.R. § 1.114</p> <p>a. ☐ Previously submitted</p> <p style="padding-left: 20px;">i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____ (Any unentered amendment(s) referred to above will be entered).</p> <p style="padding-left: 20px;">ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____</p> <p>b. ☒ Enclosed</p> <p style="padding-left: 20px;">i. ☒ Amendment/Reply</p> <p style="padding-left: 20px;">ii. ☐ Affidavit(s)/Declaration(s)</p> <p style="padding-left: 20px;">iii. ☐ Information Disclosure Statement (IDS)</p> <p style="padding-left: 20px;">iv. ☒ Other three (3) Month Extension fee</p> <p style="padding-left: 20px;">v. ☐ Other _____</p> <p>2. Miscellaneous</p> <p>a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required)</p> <p>b. ☐ Other _____</p> <p>3. Fees The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.</p> <p>4. ☒ Provisional extension of time if needed. Applicants authorize any charge of additional fees (except issue fee) that may be required in connection with this application to Deposit Account No. 50-1407.</p> <p>☒ Applicant is entitled to Small Entity Status under 37 CFR 1.9 and 37 CFR 1.27</p>																																																			
<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th style="width: 15%;">For:</th> <th style="width: 10%;">Claims after Amendment</th> <th style="width: 10%;">Highest Claims Previously Paid</th> <th style="width: 15%;">SMALL ENTITY RATE</th> <th style="width: 15%;">FEE</th> <th style="width: 15%;">OTHER THAN A SMALL ENTITY RATE</th> <th style="width: 15%;">FEE</th> </tr> </thead> <tbody> <tr> <td>Request for Continued Examination (RCE)</td> <td></td> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">\$ 650</td> <td></td> <td style="text-align: center;">\$</td> </tr> <tr> <td>Multiple Dependent Claims</td> <td></td> <td></td> <td style="text-align: center;">0 x \$410</td> <td style="text-align: center;">\$ 0</td> <td></td> <td style="text-align: center;">\$</td> </tr> <tr> <td>Total Claims*</td> <td style="text-align: center;">19</td> <td style="text-align: center;">20</td> <td style="text-align: center;">0 x \$50</td> <td style="text-align: center;">\$ 0</td> <td></td> <td style="text-align: center;">\$</td> </tr> <tr> <td>Independent Claims*</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0 x \$230</td> <td style="text-align: center;">\$ 0</td> <td></td> <td style="text-align: center;">\$</td> </tr> <tr> <td colspan="3">* (If the difference in Column 1 is less than "0", enter "0" in Column 2)</td> <td style="text-align: center;">TOTAL</td> <td style="text-align: center;">\$650</td> <td style="text-align: center;">TOTAL</td> <td style="text-align: center;">\$</td> </tr> </tbody> </table> <p>☒ The Commissioner is hereby authorized to charge \$650.- filing fees to Deposit Account No. 50-1407. In the event additional fees are required, please charge these additional fees to Deposit Account No. 50-1407. In the event of overpayment, please credit Deposit Account No. 50-1407.</p> <p style="text-align: center; font-size: x-small;">SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td style="width: 20%;">Name (Print/Type)</td> <td style="width: 30%;">Martin D. Moynihan</td> <td style="width: 20%;">Registration No. (Attorney/Agent)</td> <td style="width: 30%;">40338</td> </tr> <tr> <td>Signature</td> <td>/Martin D. Moynihan/</td> <td>Date</td> <td>July 1, 2019</td> </tr> </table>		For:	Claims after Amendment	Highest Claims Previously Paid	SMALL ENTITY RATE	FEE	OTHER THAN A SMALL ENTITY RATE	FEE	Request for Continued Examination (RCE)			1	\$ 650		\$	Multiple Dependent Claims			0 x \$410	\$ 0		\$	Total Claims*	19	20	0 x \$50	\$ 0		\$	Independent Claims*	3	3	0 x \$230	\$ 0		\$	* (If the difference in Column 1 is less than "0", enter "0" in Column 2)			TOTAL	\$650	TOTAL	\$	Name (Print/Type)	Martin D. Moynihan	Registration No. (Attorney/Agent)	40338	Signature	/Martin D. Moynihan/	Date	July 1, 2019
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	
	§	
Mail Stop AF		
Commissioner for Patents		
P.O. Box 1450		
Alexandria, VA 22313-1450		

RESPONSE TO FINAL FILED IN CONJUNCTION WITH RCE

Sir:

This is in response to the United States Patent and Trademark Office Final Action mailed December 31, 2018, which response is being made on July 1, 2019 (June 30, 2019 being Sunday), and for which a three month extension of time fee is due and enclosed herewith.

A Request for Continued Examination (RCE) is also enclosed herewith.

Applicant submits this response for entry into the record, in which:

Amendments to the Specification begin on page 2.

Amendments to the Claims begin on page 4.

Amendments to the Drawings begin on page 8.

Remarks begin on page 9.

Please amend the above-identified application as follows:

In the Specification:

Please amend the Paragraph beginning at Page 11, line 1, as follows:

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the light 102 is an array of LEDs, preferably of differing colours. This arrangement does not require the DMX distribution hub 302, power elements 304, 306 as described above, and is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp device 120 for performing calculations. ~~An input interface 105 including a~~ A control panel is provided at a back panel of the lamp device 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an effect. ~~The user input simulation parameters are optionally stored in memory 220.~~ In a variant a simple digital interface is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the lamp device 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation parameters and transmitting that data to the lamp device 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

Please amend the Paragraph beginning at Page 17, line 9, as follows:

It should be appreciated that due to the nature of the light 102, the effects may be customised by a user. ~~As shown in Figure 8, a user may input simulation parameters 802 in order to customise a lighting effect,~~ for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user input simulation parameters may be stored 804 in memory 220 and recalled 806 from the memory 220 at a later time. ~~A time varying lighting value is calculated 808 based on the recalled simulation parameter and output 810 to the light 102.~~ The effects may be triggered on cue (for example from a director) by sending a signal over a wired remote trigger or wireless device.

In the Claims:

1-74. (Cancelled).

75. (Previously Presented) A method for controlling a lighting device to produce a range of different user customisable lighting effects, the method comprising:

receiving user input of at least one user input simulation parameter to customise a lighting effect;

storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;

recalling from said memory said at least one stored user input simulation parameter;

calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and

outputting to said lighting device said time varying lighting value thereby to simulate the lighting effect.

76. (Previously Presented) The method according to Claim 75, wherein said user customisable simulation parameter is stored locally.

77. (Previously Presented) The method according to Claim 75, wherein the simulation parameter comprises a colour or colour temperature.

78. (Previously Presented) The method according to Claim 75, wherein the simulation parameter is related to at least one of: an effect frequency; an effect speed; a colour; a colour temperature; a trigger; a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal (peak) brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation time period.

79. (Previously Presented) The method according to Claim 75, wherein the lighting effect comprises a short time-period (e.g. stroboscopic) lighting effect with a user adjustable minimum pulse width.

80. (Previously Presented) The method according to Claim 75, wherein the user customisable simulation parameter comprises a parameter indicative of a group consisting of: a camera recording frequency; a camera shutter speed; and a camera frame rate.

81. (Previously Presented) The method according to Claim 75, wherein the lighting effect is designed to mimic at least one of: fire; lightning; police car light; television; a neon flickering sign; a candle; muzzle (gunshot); welding; spark/short circuit; a scan (e.g. fingerprint scanner); paparazzi flashes; fireworks; flashes (strobe); a propeller; a (nuclear) explosion; and a wormhole.

82. (Previously Presented) The method according to Claim 75, wherein the lighting value comprises brightness and/or colour data.

83. (Previously Presented) The method according to Claim 75, further comprising converting at least one of brightness and colour data into a lighting signal and outputting the lighting signal to the lighting device.

84. (Previously Presented) The method according to Claim 75, wherein the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

85. (Previously Presented) The method according to Claim 75, further comprising controlling at least one further lighting device.

86. (Currently Amended) A ~~controller-system~~ adapted to control ~~a-at least~~ one lighting device to produce a range of different user customisable lighting effects, the system ~~controller~~ comprising:

an input interface adapted to receive user input of at least one user input simulation parameter to customise a lighting effect;
 a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and
 an effect simulator adapted to:

recall from said memory said at least one stored user input simulation parameter; and
 calculate a time varying lighting value based on said recalled simulation parameter;

wherein the effect simulator is adapted to output said calculated time varying lighting value to the at least one lighting device thereby to simulate a lighting effect.

87. (Currently Amended) The system controller—according to Claim 86, wherein the ~~controller-system~~ is adapted to control at least one further lighting device.

88. (Currently Amended) The system controller—according to Claim 86, ~~wherein the further comprising controller comprises~~—an input interface and wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons.

89. (Cancelled).

90. (Currently Amended) The ~~lighting-system~~ according to Claim ~~89~~86, wherein said ~~controller and said at least one~~ lighting device ~~are~~is integrated in a combined unit.

91. (Currently Amended) The ~~lighting-system~~ according to Claim ~~89~~86, wherein the at least one lighting device ~~is~~comprises a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

92. (Currently Amended) A ~~system lighting device comprising the controller~~ according to Claim 86, wherein the at least one lighting device comprises at least one light emitting diode.

93. (Currently Amended) A lighting device according to Claim 92, wherein the at least one lighting device is ~~a lighting device used~~ for videography, broadcast, cinematography, studio filming and/or location filming.

94. (Previously Presented) A computer program product comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects, the computer program product adapted to perform, when executed, the steps of:

- receiving user input of at least one user input simulation parameter to customise a lighting effect;
- storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;
- recalling from said memory said at least one stored user input simulation parameter;
- calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and
- outputting to said lighting device said time varying lighting value thereby to simulate a lighting effect.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	
	§	
Mail Stop Amendment		
Commissioner for Patents		
P.O. Box 1450		
Alexandria, VA 22313-1450		

LETTER TO CHIEF DRAFTSMAN

Sir:

Permission is requested to correct Figures 2, 4 and 8 as shown in red ink on the attached photocopies.

Since the foregoing are all relative minor changes and do not include new matter, the formal drawings, which are being submitted herewith in an accompanying letter, include the above-requested changes.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: July 1, 2019

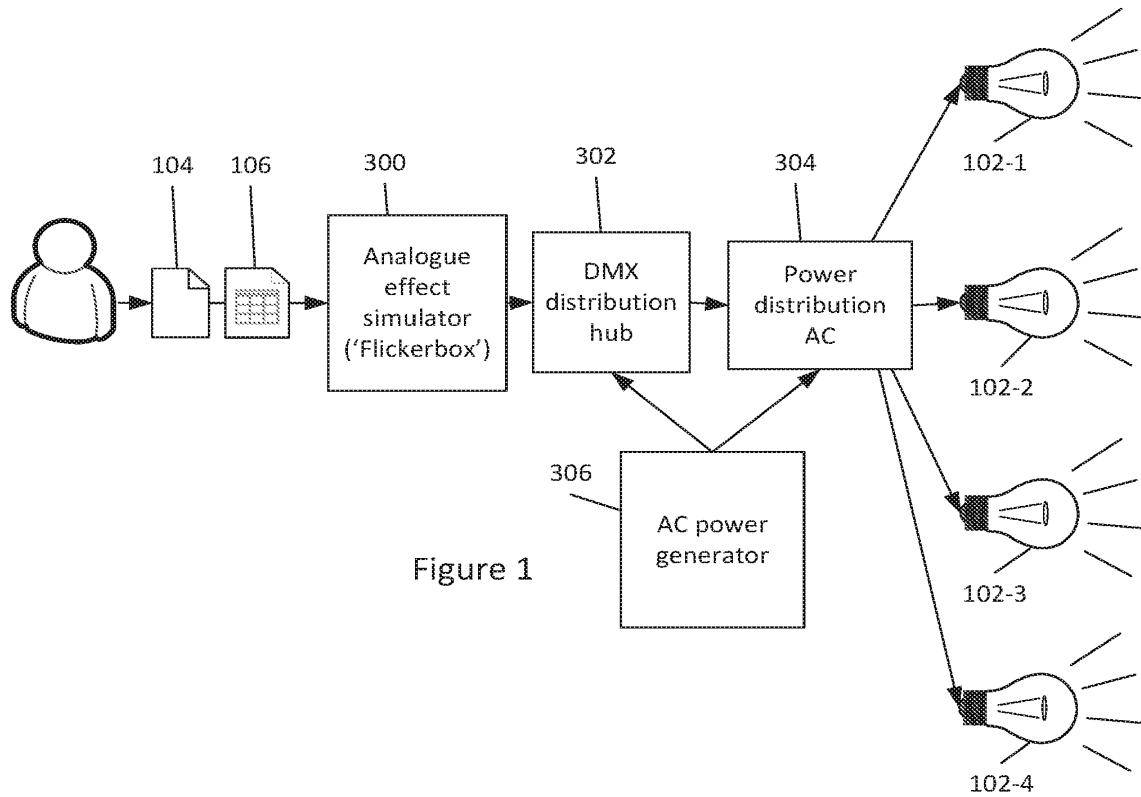


Figure 1

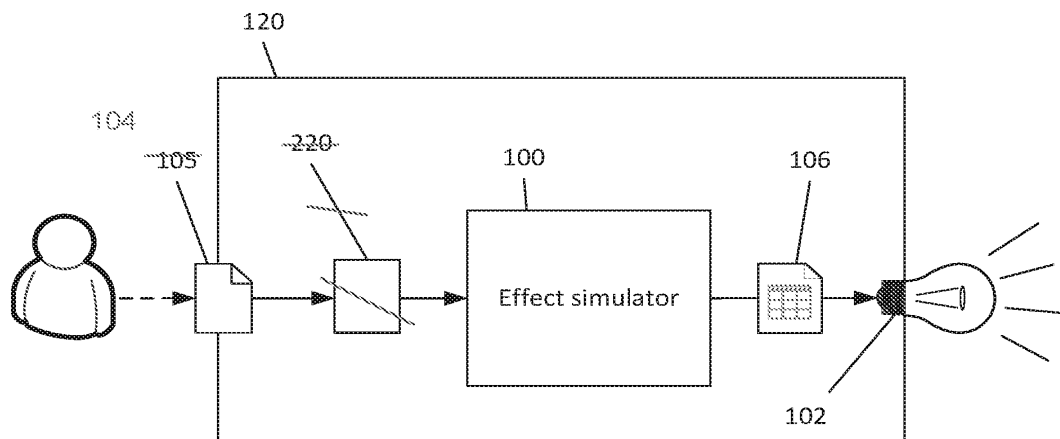


Figure 2

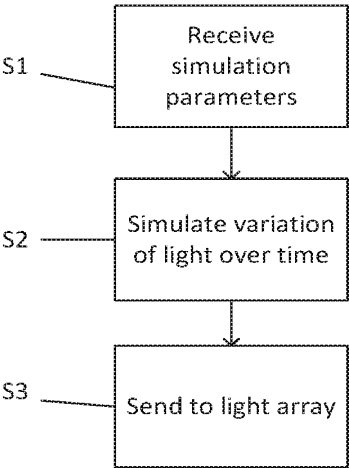


Figure 3

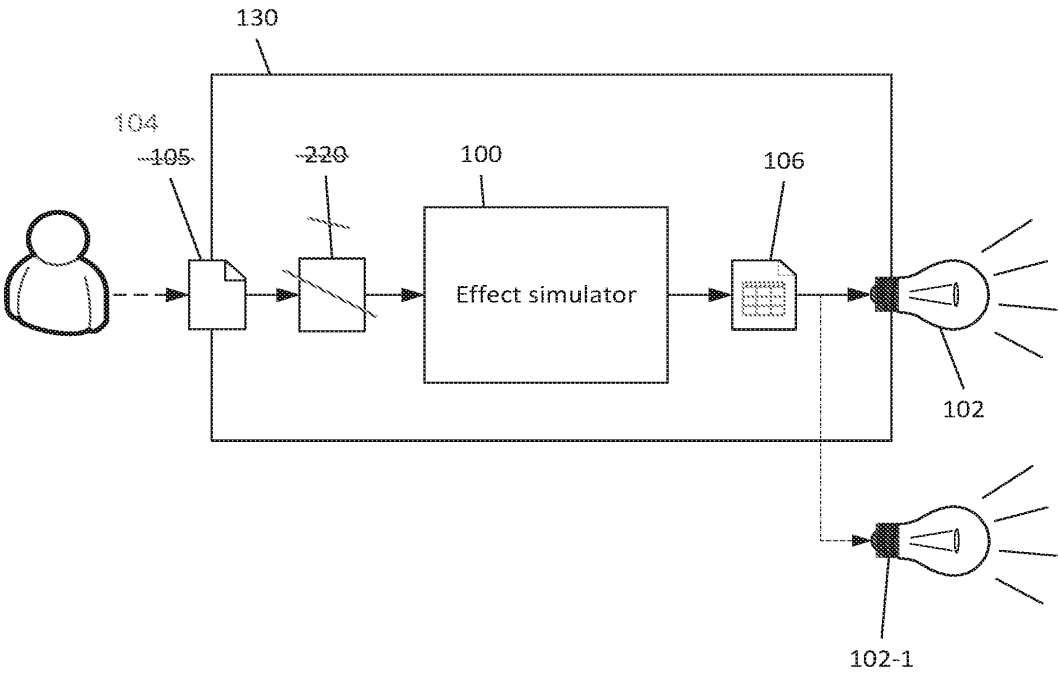
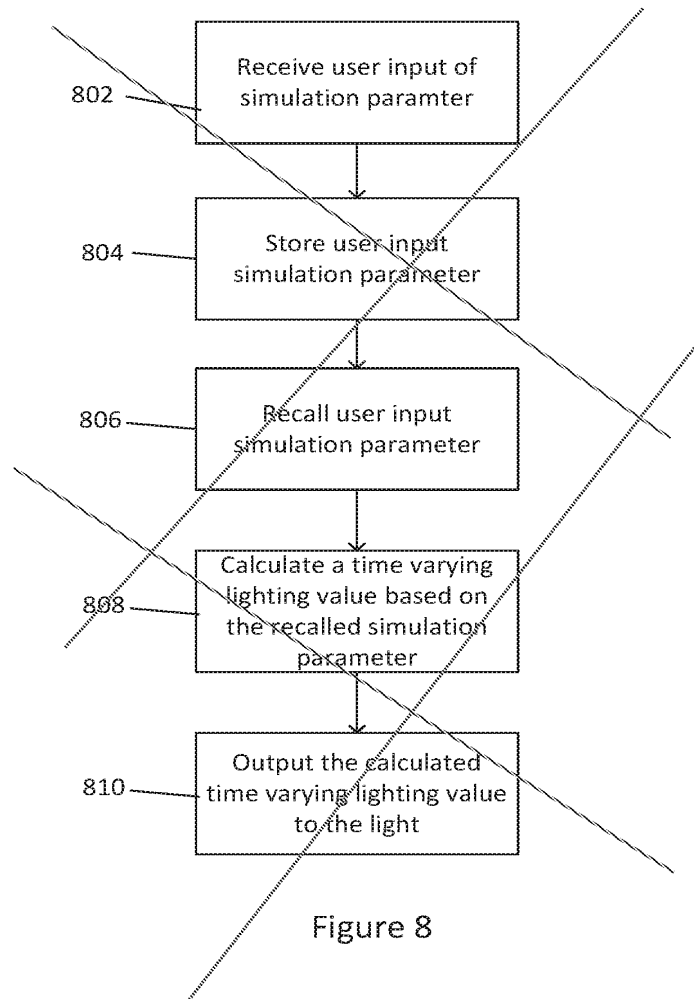


Figure 4



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
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	§	
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	§	
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	§	Attorney Docket: 69726
	§	
Examiner: Thai N. PHAM	§	
	§	
Mail Stop Amendment		
Commissioner for Patents		
P.O. Box 1450		
Alexandria, VA 22313-1450		

FORMAL DRAWINGS

Sir:

Applicant encloses herewith a new set of formal drawings, five (5) sheets, for the above-identified patent application.

Statement

The content of the replacement drawings includes no new matter.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: July 1, 2019

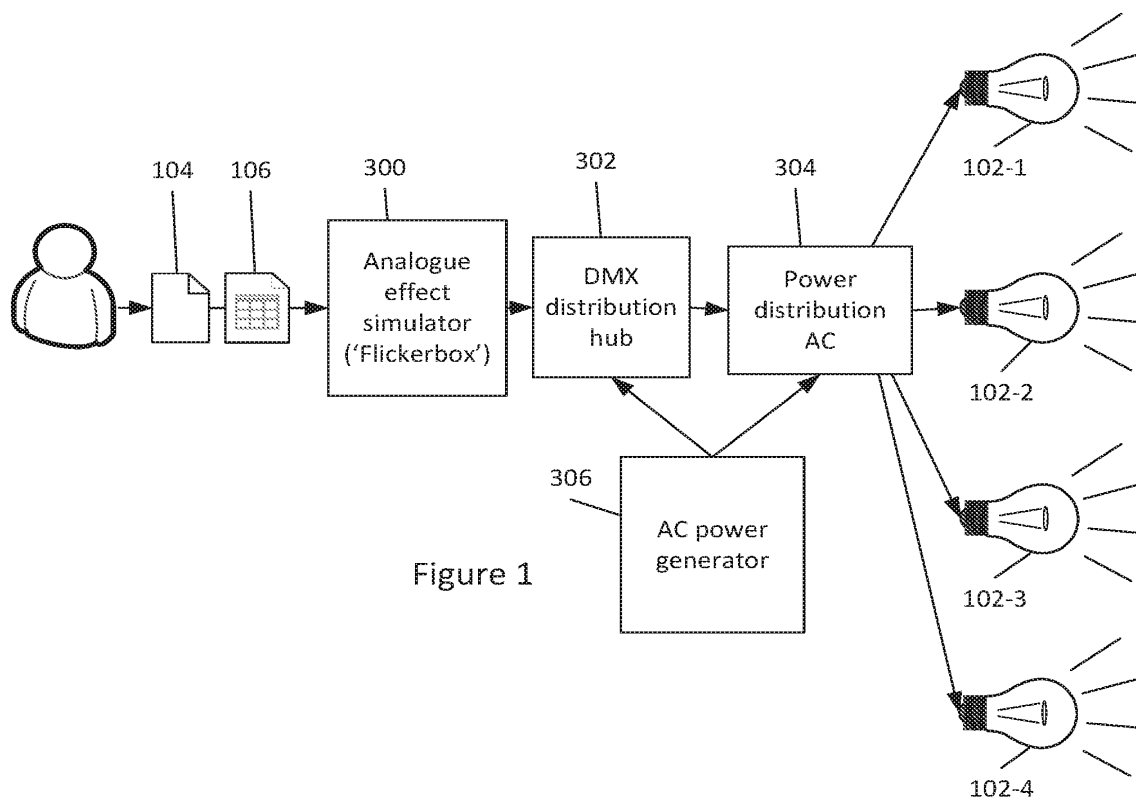


Figure 1

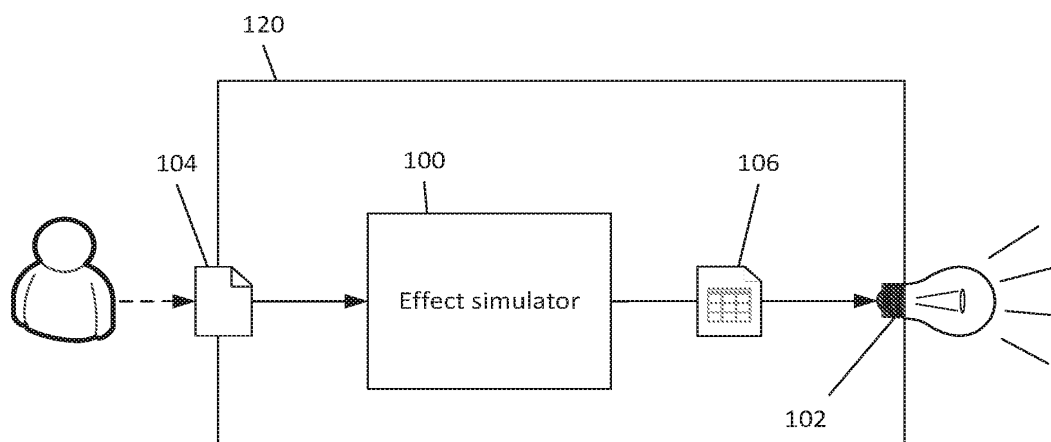


Figure 2

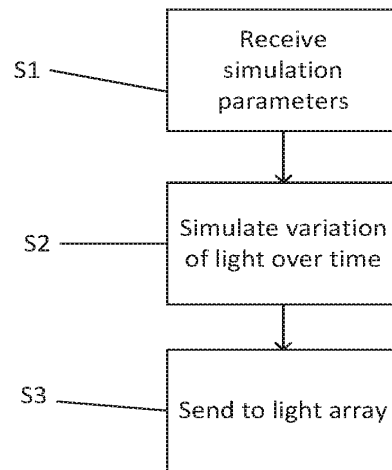


Figure 3

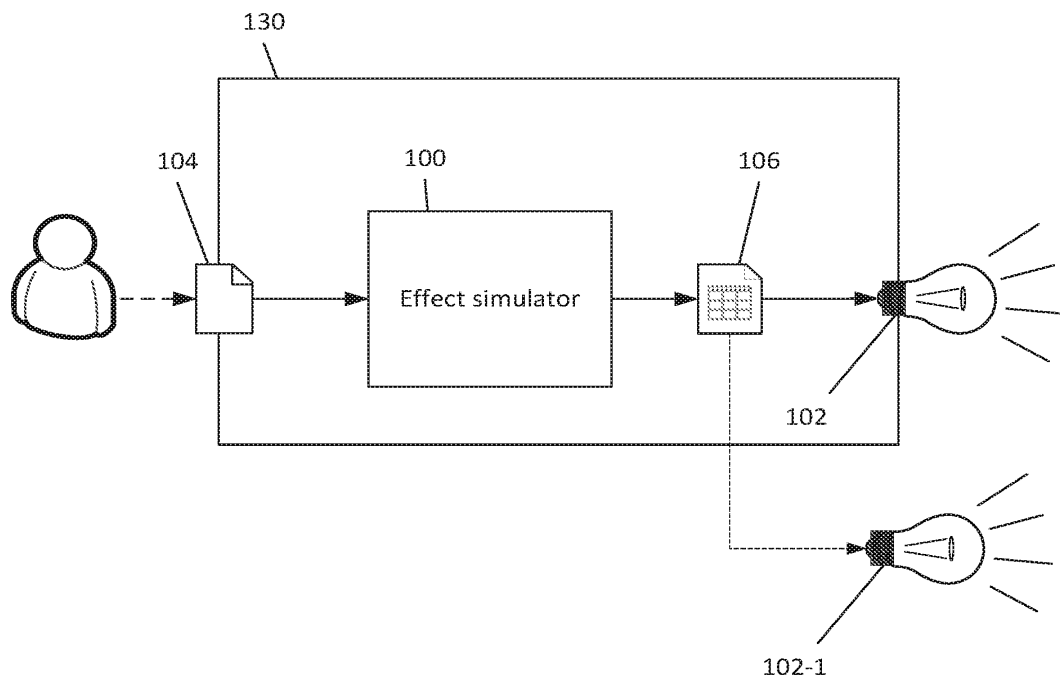


Figure 4

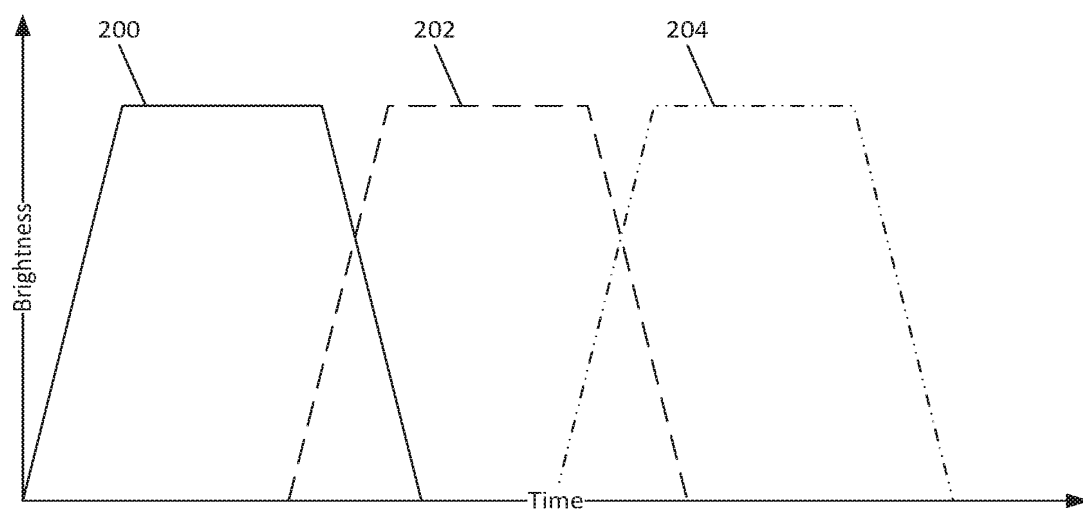


Figure 5

Light control system	
Fire effect	
Parameter	Setting
More info Fire activity	
More info Fire colour	<div>2000K</div>
More info Peak brightness	<div>80%</div>
More info Baseline brightness	<div>40%</div>
More info Camera frequency	<div>60Hz</div>
<div> <div></div> </div>	
Colour Swing Blue	Monochrome

Figure 6

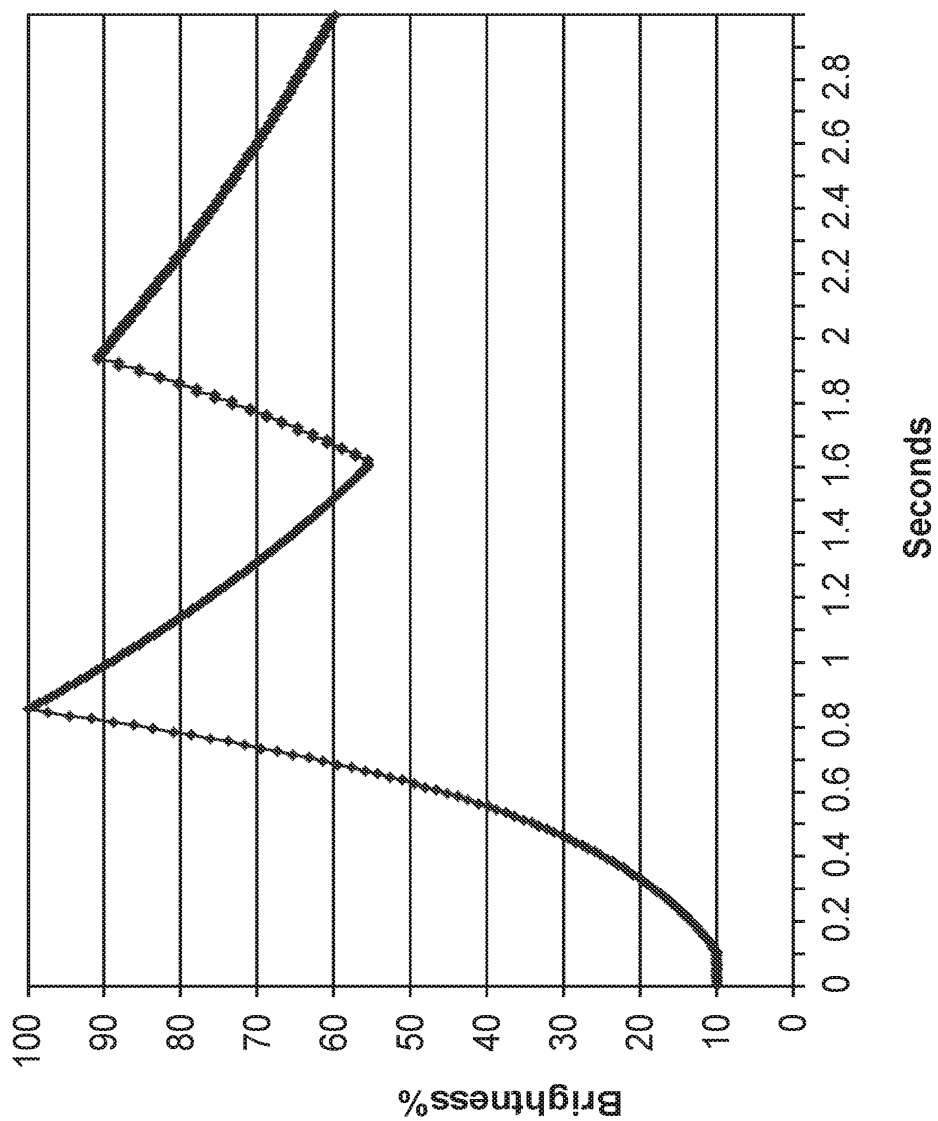


Figure 7

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 3 months with \$0 paid	2253	1	700	700
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	650	650
Total in USD (\$)				1350

Electronic Acknowledgement Receipt	
EFS ID:	36456530
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	01-JUL-2019
Filing Date:	07-APR-2017
Time Stamp:	05:09:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 1350
RAM confirmation Number	070119INTEFSW00010070501407
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		69726ResponsetoFinalOfficeActionof31Dec2018.pdf	534865	yes	25
			674f41ccd5748781e6547dfec74e1bcfe6156699		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Extension of Time		1	1	
	Request for Continued Examination (RCE)		2	2	
	Amendment Submitted/Entered with Filing of CPA/RCE		3	3	
	Specification		4	5	
	Claims		6	9	
	Applicant Arguments/Remarks Made in an Amendment		10	10	
	Applicant Arguments/Remarks Made in an Amendment		11	15	
	Transmittal Letter		16	16	
	Drawings-other than black and white line drawings		17	19	
	Transmittal Letter		20	20	
	Drawings-only black and white line drawings		21	25	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32071	no	2
			3da60b322f72bb489f558d563e5c5989e91bda55		
Warnings:					
Information:					

Total Files Size (in bytes):	566936
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:

	Roderick Allen GAMMONS et al.	§	
		§	
Serial No.:	15/481,460	§	Confirmation No.: 5642
		§	
Filed:	April 7, 2017	§	Group Art Unit: 2844
		§	
For:	LIGHTING SYSTEM AND CONTROL THEREOF	§	
		§	
Examiner:	Thai N. PHAM	§	Attorney Docket: 69726
		§	

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

PETITION AND FEE FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136(a)

Sir:

- (1) This is a petition for an extension of time to respond to the Final Office Action mailed **December 31, 2018**, for a period of **three (3) months**.
- (2) Applicant is a:
 X small entity verified statement attached
 verified statement filed
- | | | | |
|-----|--|---------------------|---------------------|
| (3) | Extensions | Fees for | Fee for other than |
| | <u>(months)</u> | <u>small entity</u> | <u>small entity</u> |
| | ☒ three months | \$ 700.00 | \$ 1,400.00 |
- (4) An amendment X is filed herewith
 has been filed
- (5) Please charge the extension fee and any other amount required to Deposit Account No. **50-1407**.
- (6) The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. **50-1407**. This authorization and request is not limited to payment of all fees associated with this communication, including any Extension of Time fee, not covered by check or specific authorization, but is also intended to include all fees for the presentation of extra claims under 37 CFR §1.16 and all patent processing fees under 37 CFR §1.17 throughout the prosecution of the case. This blanket authorization does not include patent issue fees under 37 CFR §1.18.

Respectfully submitted,
/Martin D. Moynihan/
Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: July 1, 2019

SCORE Placeholder Sheet for IFW Content

Application Number: 15481460

Document Date: 07/01/2019

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

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Form Revision Date: March 1, 2019

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/25 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	TERMINAL DISCLAIMER TO OBTAIN A PROVISIONAL DOUBLE PATENTING REJECTION OVER A PENDING "REFERENCE" APPLICATION	
Application Number	15481460	
Filing Date	07-Apr-2017	
First Named Inventor	Roderick Allen GAMMONS	
Attorney Docket Number	69726	
Title of Invention	LIGHTING SYSTEM AND CONTROL THEREOF	
☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action ☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.		
Owner	Percent Interest	
Rotolight Limited	100 %	
The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)		
15820469 filed on 11/22/2017 as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns. In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.		
☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.		

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status:	
☒ Small Entity ☐ Micro Entity ☐ Regular Undiscounted	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES	
I certify, in accordance with 37 CFR 1.4(d)(4) that I am:	
☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number <u>40338</u>	
☐ A sole inventor	
☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application	
☐ A joint inventor; all of whom are signing this request	
Signature	/Martin D. Moynihan/
Name	Martin D. Moynihan

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
 Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 15481460

Filing Date: 07-Apr-2017

Applicant/Patent under Reexamination: GAMMONS

Electronic Terminal Disclaimer filed on July 1, 2019

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	36456553
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	01-JUL-2019
Filing Date:	07-APR-2017
Time Stamp:	05:33:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	070119INTEFSW00010100501407
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33898	no	2
			4f3083564414dced1b39aa1f6327a6ee1a917511		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30078	no	2
			cfd0a96b19cabae1c82409fc87e661508f8631cf9		
Warnings:					
Information:					
Total Files Size (in bytes):			63976		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

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 15/481,460		Filing Date 04/07/2017		☐ 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), (l), 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 \$40 =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		x \$210 =			
☐ 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									
AMENDMENT		(Column 1)		(Column 2)		(Column 3)			
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)	
		ADDITIONAL FEE (\$)							
		Total (37 CFR 1.16(i))		* 19 Minus ** 20 = 0		x \$0 =		0	
		Independent (37 CFR 1.16(h))		* 3 Minus *** 3 = 0		x \$0 =		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	
AMENDMENT		(Column 1)		(Column 2)		(Column 3)			
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)	
		ADDITIONAL FEE (\$)							
		Total (37 CFR 1.16(i))		* Minus ** =		x \$0 =			
		Independent (37 CFR 1.16(h))		* Minus *** =		x \$0 =			
		☐ 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.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/RENEE D HAWKINS/			
*** 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.

Amendments to the Drawings:

Applicant attaches herewith a set of drawings with amendments to Figures 2 and 4 and removed new Figure 8. A complete set of formal drawings (5 sheets) are also attached herewith as required by the Examiner.

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 75-94 are in this Application.

Specification Objections

Examiner indicates that the amendment filed on July 9, 2018 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. Without prejudice Applicant amended the specification and drawings to remove the amendments to Figures 2 and 4 and the newly added figure 8.

Claim Rejections - 35 USC § 112

Claims 75-94 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. Specifically, Examiner argues that **Claims 75, 86 and 94** include limitations that are not disclosed, described in the specifications of the original disclosure. Some exemplary limitations from these claims are herein recited for further reviews:

"receiving user input of at least one user input simulation parameter to customize a lighting effect; storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; recalling from said memory said at least one stored user input simulation parameter" recited in **Claims 75 and 94**, and

"a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter" recited in **Claim 86**.

An objective standard for determining compliance with the written description requirement is, *"does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed."* In re Gosteli, 872

F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Under *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. The test for sufficiency of support in a parent application is whether the disclosure of the application relied upon "*reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter.*" *Ralston Purina Co. v. Far-Mar-Co., Inc.*, 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985) (quoting *In re Kaslow*, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983)). Applicant provides herein a table that reasonably conveys to the artisan that the inventor had possession at that time of the currently claimed subject matter:

Claim number	Claim element	Exemplary passage(s) of the description as filed providing support and enablement
75 and 94	<i>receiving user input of at least one user input simulation parameter to customize a lighting effect;</i>	p. 4, ll. 17-19 p. 11, ll. 7-10 p. 14 l. 29 – p. 15 l. 8
75 and 94	<i>storing in memory said at least one user input simulation parameter,</i>	p. 16, ll. 17-21 p. 17, ll. 9-13
75 and 94	<i>said at least one user input simulation parameter depending on the lighting effect being simulated;</i>	p. 13 ll. 24-26 p. 16 l. 15 – p. 17 l. 7
75 and 94	<i>recalling from said memory said at least one stored user input simulation parameter</i>	p. 17 ll. 12-13
86	<i>a memory adapted to store said at least one user input simulation parameter,</i>	p. 16, ll. 17-21 p. 17, ll. 9-13
86	<i>said at least one user input simulation parameter depending on the lighting effect being simulated;</i>	p. 13 ll. 24-26 p. 16 l. 15 – p. 17 l. 7
86	<i>and an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter</i>	p. 17 ll. 12-13

It is also noted that certain of the present claim limitations (for example storing in memory, and recalling from said memory) are steps that would be within the knowledge of the skilled person, who would therefore be able to perform such steps if he were directed to do so in accordance with the claimed invention. Examiner is reminded that the subject matter of a claim need not be described literally in order for the disclosure to satisfy the description requirement. The above table exemplify that the pending claims are adequately supported and enabled by the description of the application as originally filed.

Drawings Objections

Drawings have been objected to as the terms "*a controller for controlling at least one lighting device*," "*a calculating device*" "*a wired or wireless interface*," and "*a random number source*" must be shown or the features canceled from the claims. Applicant carefully reviewed the pending claims and noted that the pending claims do not recite any of: "*a calculating device*" "*a wired or wireless interface*," and "*a random number source*". Applicant removed the term controller from the claims, reciting instead a system, a term which is supported in the specification as filed.

Double Patenting

Claims 75-94 are provisionally rejected on the ground of non-statutory double patenting as being unpatentable over **Claims 1-20** of co-pending application No. 15/820469. Applicant hereby files a terminal disclaimer signed in compliance with 37 CFR 1.321 (b).

Conclusion

No Disclaimers or Disavowals

Although the present response may include amendments to the application or claims, or characterizations of claim scope or referenced art, Applicants do not concede that previously pending claims in this application are not patentable over the cited references. Rather, any amendments or characterizations are being made to expedite the issuance. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that relate to subject matter supported by the instant application, including subject matter specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this application, or any parent, child or related prosecution history should not infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the instant application.

In view of the above amendments and remarks it is respectfully submitted that the claims are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited.

While the above amendments and/or remarks are believed to be sufficient to overcome the Examiner's rejections, any omissions as to assertions by the Examiner or certain requirements that may be applicable to such rejections (e.g., assertions regarding dependent claims, whether a reference constitutes prior art, whether references are legally combinable for obviousness purposes) is not an admission that such assertions are accurate or such requirements have been met. Applicant reserves the right to analyze and dispute such positions in the future.

Should the Examiner have any questions or comments as to the form, content, or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below prior to mailing the next Official Action. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Any fees associated with this paper, for its entry into the record, may be charged to Deposit Account No. 50-1407.

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17, or credit any overpayment, to Deposit Account No. 50-1407.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR § 1.33 and 37 CFR § 1.34 concerning any subject matter of this application by video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications may be made of record in the application file.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: July 1, 2019

Enclosures:

- Petition for Extension (3 Months)
- Letter to Chief Draftsman
- Annotated Drawing Sheets
- Formal Drawing Transmittal Sheet
- Complete Set of Replacement Drawing Sheets



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801	7590	07/12/2019		
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.			EXAMINER	
P.O. BOX 16446			PHAM, THAI N	
ARLINGTON, VA 22215				
			ART UNIT	PAPER NUMBER
			2844	
			NOTIFICATION DATE	DELIVERY MODE
			07/12/2019	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):

usptomail@ipatent.co.il

Office Action Summary	Application No. 15/481,460		Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM		Art Unit 2844	AIA (FITF) Status Yes

-- 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 2 MONTHS 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 07/01/2019.
☐ 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) 75-88 and 90-94 is/are pending in the application.
 5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☒ Claim(s) 75-88,90-91 and 93 is/are allowed.

7) ☐ Claim(s) ____ is/are rejected.

8) ☒ Claim(s) 92 and 94 is/are objected to.

9) ☐ Claim(s) ____ 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 07/01/2019 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/08a and/or PTO/SB/08b)	Paper No(s)/Mail Date ____.
Paper No(s)/Mail Date ____.	4) ☐ Other: ____.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

1. This application is in condition for allowance except for the following formal matters:

Claim Objections

2. Claim 92 and 94 are objected to because of the following informalities:

In claim 92, it is suggest that the phrase recites “**A** system according to claim 86” should be changed to --**The** system according to claim 86-- to avoid antecedence basis.

In claim 94, it is suggested that the limitation recites “A computer program **product** comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects the computer program **product** adapted to perform, when executed, the steps of” should be changed to --A computer program comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects, the computer program adapted to perform, when executed, the steps of-- to make it clearer.

Appropriate correction is required.

Conclusion

3. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI N PHAM whose telephone number is (571)270-5518. The examiner can normally be reached on M-F 9:00 am-5:00 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

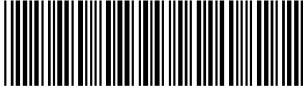
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DOUGLAS OWENS can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 15/481,460
Art Unit: 2844

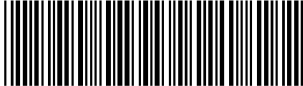
Page 4

/Thai Pham/
Primary Examiner, Art Unit 2844
07/08/2019

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018	07/08/2019						
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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE								
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	94		✓	O						

Search Notes 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
Updated East search	12/20/2018	TP
Updated East search	07/08/2019	TP

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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Bibliographic Data

Application No: 15/481,460

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged:

Examiner's Signature

Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/07/2017	315	2844	69726
RULE			

APPLICANTS

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INVENTORS

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CONTINUING DATA

This application has PRO of 62319809 04/08/2016

FOREIGN APPLICATIONS

UNITED KINGDOM 1606907.2 04/20/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

** SMALL ENTITY **

STATE OR COUNTRY

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P.O. BOX 16446

ARLINGTON, VA 22215

UNITED STATES

FILING FEE RECEIVED

\$1,100

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S3	378	((("FRANCIS") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
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EAST Search History

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7/ 8/ 2019 2:35:15 PM

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§		
	§		
Roderick Allen GAMMONS et al.	§		
	§	Confirmation No.:	5642
Serial No.: 15/481,460	§		
	§		
Filed: April 7, 2017	§	Group Art Unit:	2844
	§		
For: LIGHTING SYSTEM AND	§		
CONTROL THEREOF	§		
	§	Attorney Docket:	69726
	§		
Examiner: Thai N. PHAM	§		

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

RESPONSE TO EX PARTE QUAYLE

Sir:

This is in response to the United States Patent and Trademark Ex Parte Quayle Office Action mailed July 12, 2019, which response is being made on or before September 12, 2019, and for which no extension of time fees are due.

Applicant submits this response for entry into the record, in which:

Amendments to the Claims begin on page 2.

Remarks begin on page 6.

Please amend the above-identified application as follows:

In the Claims:

1-74. (Cancelled)

75. (Previously Presented) A method for controlling a lighting device to produce a range of different user customisable lighting effects, the method comprising:

receiving user input of at least one user input simulation parameter to customise a lighting effect;

storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;

recalling from said memory said at least one stored user input simulation parameter;

calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and

outputting to said lighting device said time varying lighting value thereby to simulate the lighting effect.

76. (Previously Presented) The method according to Claim 75, wherein said user customisable simulation parameter is stored locally.

77. (Previously Presented) The method according to Claim 75, wherein the simulation parameter comprises a colour or colour temperature.

78. (Previously Presented) The method according to Claim 75, wherein the simulation parameter is related to at least one of: an effect frequency; an effect speed; a colour; a colour temperature; a trigger; a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal (peak) brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation time period.

79. (Previously Presented) The method according to Claim 75, wherein the lighting effect comprises a short time-period (e.g. stroboscopic) lighting effect with a user adjustable minimum pulse width.

80. (Previously Presented) The method according to Claim 75, wherein the user customisable simulation parameter comprises a parameter indicative of a group consisting of: a camera recording frequency; a camera shutter speed; and a camera frame rate.

81. (Previously Presented) The method according to Claim 75, wherein the lighting effect is designed to mimic at least one of: fire; lightning; police car light; television; a neon flickering sign; a candle; muzzle (gunshot); welding; spark/short circuit; a scan (e.g. fingerprint scanner); paparazzi flashes; fireworks; flashes (strobe); a propeller; a (nuclear) explosion; and a wormhole.

82. (Previously Presented) The method according to Claim 75, wherein the lighting value comprises brightness and/or colour data.

83. (Previously Presented) The method according to Claim 75, further comprising converting at least one of brightness and colour data into a lighting signal and outputting the lighting signal to the lighting device.

84. (Previously Presented) The method according to Claim 75, wherein the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

85. (Previously Presented) The method according to Claim 75, further comprising controlling at least one further lighting device.

86. (Previously Presented) A system adapted to control at least one lighting device to produce a range of different user customisable lighting effects, the system comprising:

an input interface adapted to receive user input of at least one user input simulation parameter to customise a lighting effect;
 a memory adapted to store said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated; and
 an effect simulator adapted to:

recall from said memory said at least one stored user input simulation parameter; and
 calculate a time varying lighting value based on said recalled simulation parameter;

wherein the effect simulator is adapted to output said calculated time varying lighting value to the at least one lighting device thereby to simulate a lighting effect.

87. (Previously Presented) The system according to Claim 86, wherein the system is adapted to control at least one further lighting device.

88. (Previously Presented) The system according to Claim 86, further comprising an input interface and wherein the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons.

89. (Cancelled)

90. (Previously Presented) The system according to Claim 86, wherein said at least one lighting device is integrated in a combined unit.

91. (Previously Presented) The system according to Claim 86, wherein the at least one lighting device comprises a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

92. (Currently Amended) ~~A~~The system according to Claim 86, wherein the at least one lighting device comprises at least one light emitting diode.

93. (Previously Presented) A lighting device according to Claim 92, wherein the at least one lighting device is used for videography, broadcast, cinematography, studio filming and/or location filming.

94. (Currently Amended) A computer program product comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects, the computer program product is adapted to perform, when executed, the steps of:

receiving user input of at least one user input simulation parameter to customise a lighting effect;

storing in memory said at least one user input simulation parameter, said at least one user input simulation parameter depending on the lighting effect being simulated;

recalling from said memory said at least one stored user input simulation parameter;

calculating, using an effect simulator, a time varying lighting value based on said recalled simulation parameter; and

outputting to said lighting device said time varying lighting value thereby to simulate a lighting effect.

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 75-88 and 90-94 are in this Application.

Objections

In claim 92, it is suggested that the phrase recites "A system according to claim 86" should be changed to --The system according to claim 86-- to avoid antecedence basis. Applicant amended the claims accordingly.

In claim 94, it is suggested to clarify the limitation "A computer program product comprising software code for controlling a lighting device to produce a range of different user customisable lighting effects the computer program product adapted to perform, when executed, the steps of". Applicant amended the claims accordingly.

Conclusion

No Disclaimers or Disavowals

Although the present response may include amendments to the application or claims, or characterizations of claim scope or referenced art, Applicants do not concede that previously pending claims in this application are not patentable over the cited references. Rather, any amendments or characterizations are being made to expedite the issuance. Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that relate to subject matter supported by the instant application, including subject matter specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this application, or any parent, child or related prosecution history should not infer that Applicants have made any disclaimers or disavowals of any subject matter supported by the instant application.

In view of the above amendments and remarks it is respectfully submitted that the claims are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited.

While the above amendments and/or remarks are believed to be sufficient to overcome the Examiner's rejections, any omissions as to assertions by the Examiner or certain requirements that may be applicable to such rejections (e.g., assertions regarding dependent claims, whether a reference constitutes prior art, whether references are legally combinable for obviousness purposes) is not an admission that such assertions are accurate or such requirements have been met. Applicant reserves the right to analyze and dispute such positions in the future.

Should the Examiner have any questions or comments as to the form, content, or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below prior to mailing the next Official Action. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Any fees associated with this paper, for its entry into the record, may be charged to Deposit Account No. 50-1407.

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17, or credit any overpayment, to Deposit Account No. 50-1407.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR § 1.33 and 37 CFR § 1.34 concerning any subject matter of this application by video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications may be made of record in the application file.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: September 3, 2019

Electronic Acknowledgement Receipt	
EFS ID:	37042218
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	03-SEP-2019
Filing Date:	07-APR-2017
Time Stamp:	05:37:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		69726ResponsetoExParteQuayl eOfficeActionof12Jul2019.pdf	43309 29f7b9c1dd84934bb1ab770cc46b92d43cd c8c54	yes	8

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Response after Ex Parte Quayle Action	1	1	
Claims	2	5	
Applicant Arguments/Remarks Made in an Amendment	6	8	
Warnings:			
Information:			
Total Files Size (in bytes):		43309	
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>			

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000, provides for continued examination of an utility or plant application filed on or after June 8, 1995. See The American Inventors Protection Act of 1999 (AIPA).	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Application Number</td> <td style="padding: 2px;">15/481,460</td> </tr> <tr> <td style="padding: 2px;">Filing Date</td> <td style="padding: 2px;">April 7, 2017</td> </tr> <tr> <td style="padding: 2px;">Examiner Name</td> <td style="padding: 2px;">Thai N. PHAM</td> </tr> <tr> <td style="padding: 2px;">First Named Inventor</td> <td style="padding: 2px;">Roderick Allen GAMMONS</td> </tr> <tr> <td style="padding: 2px;">Group Art Unit</td> <td style="padding: 2px;">2844</td> </tr> <tr> <td style="padding: 2px;">Confirmation No.:</td> <td style="padding: 2px;">5642</td> </tr> <tr> <td style="padding: 2px;">Attorney Docket Number</td> <td style="padding: 2px;">69726</td> </tr> </table>	Application Number	15/481,460	Filing Date	April 7, 2017	Examiner Name	Thai N. PHAM	First Named Inventor	Roderick Allen GAMMONS	Group Art Unit	2844	Confirmation No.:	5642	Attorney Docket Number	69726																
Application Number	15/481,460																														
Filing Date	April 7, 2017																														
Examiner Name	Thai N. PHAM																														
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Group Art Unit	2844																														
Confirmation No.:	5642																														
Attorney Docket Number	69726																														
This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application. NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53 (d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.																															
1. Submission required under 37 C.F.R. § 1.114 a. ☐ Previously submitted i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____ (Any unentered amendment(s) referred to above will be entered). ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____ b. ☒ Enclosed i. ☐ Amendment/Reply ii. ☐ Affidavit(s)/Declaration(s) iii. ☒ Information Disclosure Statement (IDS) 2. Miscellaneous a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required) b. ☐ Other _____ 3. Fees The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed. 4. ☒ Provisional extension of time if needed. Applicants authorize any charge of additional fees (except issue fee) that may be required in connection with this application to Deposit Account No. 50-1407. ☒ Applicant is entitled to Small Entity Status under 37 CFR 1.9 and 37 CFR 1.27																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%; text-align: center;"><i>For:</i></th> <th style="width: 15%; text-align: center;"><i>Claims after Amendment</i></th> <th style="width: 15%; text-align: center;"><i>Highest Claims Previously Paid</i></th> <th style="width: 15%; text-align: center;">SMALL ENTITY RATE FEE</th> <th style="width: 15%; text-align: center;">OTHER THAN A SMALL ENTITY RATE FEE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Request for Continued Examination (RCE)</td> <td></td> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">\$ 950</td> </tr> <tr> <td style="text-align: center;">Multiple Dependent Claims</td> <td></td> <td></td> <td style="text-align: center;">0 x \$410</td> <td style="text-align: center;">\$ 0</td> </tr> <tr> <td style="text-align: center;">Total Claims*</td> <td style="text-align: center;">19</td> <td style="text-align: center;">20</td> <td style="text-align: center;">0 x \$50</td> <td style="text-align: center;">\$ 0</td> </tr> <tr> <td style="text-align: center;">Independent Claims*</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0 x \$230</td> <td style="text-align: center;">\$ 0</td> </tr> <tr> <td colspan="3" style="text-align: center;">* (If the difference in Column 1 is less than "0", enter "0" in Column 2)</td> <td style="text-align: center;">TOTAL</td> <td style="text-align: center;">\$950</td> </tr> </tbody> </table>		<i>For:</i>	<i>Claims after Amendment</i>	<i>Highest Claims Previously Paid</i>	SMALL ENTITY RATE FEE	OTHER THAN A SMALL ENTITY RATE FEE	Request for Continued Examination (RCE)			1	\$ 950	Multiple Dependent Claims			0 x \$410	\$ 0	Total Claims*	19	20	0 x \$50	\$ 0	Independent Claims*	3	3	0 x \$230	\$ 0	* (If the difference in Column 1 is less than "0", enter "0" in Column 2)			TOTAL	\$950
<i>For:</i>	<i>Claims after Amendment</i>	<i>Highest Claims Previously Paid</i>	SMALL ENTITY RATE FEE	OTHER THAN A SMALL ENTITY RATE FEE																											
Request for Continued Examination (RCE)			1	\$ 950																											
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Total Claims*	19	20	0 x \$50	\$ 0																											
Independent Claims*	3	3	0 x \$230	\$ 0																											
* (If the difference in Column 1 is less than "0", enter "0" in Column 2)			TOTAL	\$950																											
☒ The Commissioner is hereby authorized to charge \$950.00- filing fees to Deposit Account No. 50-1407. In the event additional fees are required, please charge these additional fees to Deposit Account No. 50-1407. In the event of overpayment, please credit Deposit Account No. 50-1407.																															
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED																															
Name (Print/Type)	Martin D. Moynihan	Registration No. (Attorney/Agent)	40338																												
Signature	/Martin D. Moynihan/	Date	October 7, 2019																												

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Total in USD (\$)				950

Electronic Acknowledgement Receipt	
EFS ID:	37376761
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	07-OCT-2019
Filing Date:	07-APR-2017
Time Stamp:	07:17:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$950
RAM confirmation Number	E201907818273709
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees) 37 CFR 1.20 (Post Issuance fees) 37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	69726RCE.pdf	63009	no	1
			293b1a244c7fa41e8cbf3d2b6ee58950f1bc232		
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30302	no	2
			a0e0aeb8c135db42692acb909000764dcf61aaa		
Warnings:					
Information:					
Total Files Size (in bytes):			93311		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

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 2 hours 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

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/481,460
				Filing Date	April 07, 2017
				First Named Inventor	GAMMONS Roderick Allen et al
				Group Art Unit	2844
				Examiner Name	PHAM Thai N.
				Attorney Docket Number	69726
Sheet	2	Of	2		
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	1	Patents Act 1977: Examination Report Under Sections 18(3) Dated 31 May 2019 From the Intellectual Property Office of the United Kingdom of Great Britain Re. Application No. GB1802585.8. (4 Pages)			

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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:	37377112
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Darrell Hollis
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	07-OCT-2019
Filing Date:	07-APR-2017
Time Stamp:	09:10:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	_USPTOltr.pdf	23939 33dcaa3a030c8b1199a4581326b88166f82f7973	no	3
Warnings:					

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	_form1449.pdf	327048 927c656bd057a23703866ca2c8e847608f317c2c	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	1-326655.pdf	376209 aaf4325e4cdd2f1566acf0d22368045efc28847a	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			727196		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF [CineSFX]	§	Group Art Unit: 2844
Examiner: PHAM Thai N.	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☒ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☐

☒ No Fee is Due.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 04 October 2019



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

67801 7590 10/24/2019
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER	
PHAM, THAI N	
ART UNIT	PAPER NUMBER
2844	

DATE MAILED: 10/24/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	01/24/2020

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

67801 7590 10/24/2019
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	01/24/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, THAI N	2844	315-297000

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 03-09 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,

(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.

1 _____
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801	7590	10/24/2019	EXAMINER	
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.			PHAM, THAI N	
P.O. BOX 16446			ART UNIT	
ARLINGTON, VA 22215			PAPER NUMBER	

2844

DATE MAILED: 10/24/2019

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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 30 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. 15/481,460	Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM	Art Unit 2844	AIA (FITF) Status Yes

-- 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 RCE submitted on 10/07/2019.
☐ 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 75-88 and 90-94. 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 <u>10/07/2019</u> .	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. _____.	

/Thai Pham/ Primary Examiner, Art Unit 2844	
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Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

This Office Action is responsive to the applicant's amendment and request for continued examination (RCE) submitted on 10/07/2019. Claims 92 and 94 have been amended. Claims 1-74 and 89 are previously canceled. Thus, claims 75-88 and 90-94 are currently pending in the instant application.

Information Disclosure Statement

1. The information disclosure statements (IDSs) submitted on 10/07/2019 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Allowable Subject Matter

2. Claims 75-88 and 90-94 are allowed.
3. The following is an examiner's statement of reasons for allowance. The prior art fails to teach or fairly suggest combination of elements recited in independent claims 75, 86 and 94 including:

“an effect simulator adapted to: recall from said memory said at least one stored user input simulation parameter; and calculate a time varying lighting value based on said recalled simulation parameter; wherein the effect simulator is adapted to output said calculated time varying lighting value to the at least one lighting device thereby to simulate a lighting effect.”

Comparing to the prior art of the record, because none of the prior art references of the record, either stand alone or in combination, has taught or suggest the above mentioned features in combination with other limitations recited in the claims above. Therefore, the claims seemed patentable over the prior of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI N PHAM whose telephone number is (571)270-5518. The examiner can normally be reached on M-F 9:00 am-5:00 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DOUGLAS OWENS can be reached on (571) 272-1662. 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.

Application/Control Number: 15/481,460
Art Unit: 2844

Page 4

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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thai Pham/
Primary Examiner, Art Unit 2844
10/12/2019

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC						
Symbol					Type	Version
F21V	/	23	/	003	F	2013-01-01
H05B	/	37	/	029	I	2013-01-01
H05B	/	37	/	0254	I	2013-01-01
H05B	/	37	/	0272	I	2013-01-01

CPC Combination Sets					
Symbol				Type	Version
/	/	/	/		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	12 October 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office

Part of Paper No.: 20191012

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F21V		23	00
H05B		37	02

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	12 October 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
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-	3	-	15	-	27	-	39	-	51	-	63	1	75	13	87
-	4	-	16	-	28	-	40	-	52	-	64	2	76	14	88
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NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/Thai Pham/ Primary Examiner, Art Unit 2844 (Primary Examiner) _____ (Date) 12 October 2019		O.G. Print Claim(s) 1	O.G. Print Figure 2

Search Notes 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

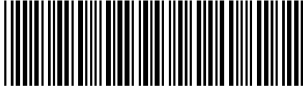
Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
Updated East search	12/20/2018	TP
Updated East search	07/08/2019	TP
Updated East search	10/12/2019	TP
Did the interference search	10/12/2019	TP

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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

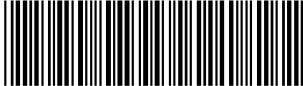
Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
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F21V	23/00, 23/003	10/12/2019	TP

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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE									
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	94		✓	O	=						

EAST Search History

EAST Search History (Prior Art)

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S4	3	((("GAMMONS") near3 ("Roderick") near3 ("Aaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
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EAST Search History

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S16	574	light\$4 with control\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
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S18	37	S17 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
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S22	158	("20080084701" "20080259598" "20080278957" "20080304269"	US-PGPUB; USPAT;	OR	ON	2018/12/21 19:00

file:///C:/Users/tpam3/Documents/e-Red%20Folder/15481460/EASTSearchHistory.15481460_AccessibleVersion.htm[10/15/2019 11:40:30 AM]

		"20090184666" "5851063" "5912477" "7334917" "20070274080" "20080089053" "20080137347" "20080278952" "20090160363" "6563139" "7213940" "7358954" "5851063" "20060105482" "20070171145" "20070263393" "20070278934" "20080084685" "20080106907" "20090246895" "20100165001" "6132072" "7005679" "7144130" "20070280624" "20080278950" "20100079059" "20100103678" "20070139923" "20070223219" "20080106895" "20070170447" "20070236911" "20070278974" "20070279440" "20080084700" "20080112168" "20080112183" "20080310154" "20090108269" "20100102967" "20100254129" "5631190" "7564180" "7759854" "20070274063" "20070279903" "20080304261" "20100259182" "5803579" "7135664" "7213940" "20070137074" "20080088248" "20080112170" "20080130298" "20080309255" "20100102199" "4918487").PN.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S23	2	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/12/21 19:41
S24	26	(US-0094798-\$ US-0112862-\$ US- 0135842-\$ US-0139130-\$ US-0257007- \$ US-20040257007-\$ US- 20140139130-\$ US-20180094798-\$ US-20180112862-\$ US-20180135842-\$ US-2120512-\$ US-3002995-\$ US- 7777427-\$ US-8253666-\$).DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/07/08 14:10
S26	59607	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S27	203	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S29	1093	light\$4 with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:49

EAST Search History

S30	137	S26 and S29	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:50
S31	12	("20070159347" "20080129226" "5924784" "7038399").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:52
S32	9	light\$4 with effect with control\$4 with memory with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:56
S33	6	("20030176205" "20040110540" "20070146332" "20070173291" "7120471" "7266397").PN. OR ("8320887").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/10/15 10:59
S34	260	light\$4 same effect same control\$4 same memory same user same (calculat\$4 or comput\$4) same (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:00
S35	4	S26 and S34	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:01
S36	92	light\$4 with control\$4 with memory with stor\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:02
S37	3	S26 and S36	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:04
S38	74	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:06
S39	33	S26 and S38	US-PGPUB;	OR	ON	2019/10/15

EAST Search History

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:07
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EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S40	18813	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT	OR	ON	2019/10/15 11:09
S41	9	light\$4 with effect with control\$4 with memory with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:10
S42	41	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:11
S43	16	S40 and S42	US-PGPUB; USPAT	OR	ON	2019/10/15 11:12
S44	61	light\$4 same effect same control\$4 same (user near5 input) same (calculat\$4 or comput\$4) same (memory or stor\$4) same (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:15
S45	1	S40 and S44	US-PGPUB; USPAT	OR	ON	2019/10/15 11:15
S46	12	light\$4 with effect with control\$4 with (user near5 input) with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:17
S47	117	(light\$4 and effect and control\$4 and memory and stor\$4 and user and input and interface and (calculat\$4 or comput\$4) and (vary\$4 or adjust\$4 or tun\$4)).clm.	US-PGPUB; USPAT	OR	ON	2019/10/15 11:19

10/ 15/ 2019 11:40:26 AM

C:\Users\tpham3\Documents\EAST\Workspaces\15481460.wsp

Bibliographic Data

Application No: 15/481,460

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /Thai Pham/

Examiner's Signature

Initials

Title:

LIGHTING SYSTEM AND CONTROL THEREOF

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/07/2017	315	2844	69726
RULE			

APPLICANTS

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Stefan Lange Shepperton, UNITED KINGDOM

CONTINUING DATA

This application has PRO of 62319809 04/08/2016

FOREIGN APPLICATIONS

UNITED KINGDOM 1606907.2 04/20/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

** SMALL ENTITY **

STATE OR COUNTRY

UNITED KINGDOM

ADDRESS

MARTIN D. MOYNIHAN d/b/a PRTSI, INC.

P.O. BOX 16446

ARLINGTON, VA 22215

UNITED STATES

FILING FEE RECEIVED

\$1,100

PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/481,460
				Filing Date	April 07, 2017
				First Named Inventor	GAMMONS Roderick Allen et al
				Group Art Unit	2844
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	1	Patents Act 1977: Examination Report Under Sections 18(3) Dated 31 May 2019 From the Intellectual Property Office of the United Kingdom of Great Britain Re. Application No. GB1802585.8. (4 Pages)			

Examiner Signature	/Thai Pham/	Date Considered	10/12/2019
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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TP/



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

67801 7590 12/18/2019
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER
PHAM, THAI N

ART UNIT	PAPER NUMBER
2844	

NOTIFICATION DATE	DELIVERY MODE
12/18/2019	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):

usptomail@ipatent.co.il



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Commissioner for Patents
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www.uspto.gov

Application No. : 15481460
Applicant : Gammons
Filing Date : 04/07/2017
Date Mailed : 12/18/2019

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

*A copy of this notice **MUST** be returned with the reply. Please address response to
"Mail Stop Issue Fee, Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450".*

/Marsha Palmer-Lee/
Publication Branch
Office of Data Management
(571) 272-4200

IDENTIFICATION OF SPECIFICATION/DRAWING INCONSISTENCIES

- ☒ On Page 2 (SPEC 09/07/2018) of the specification there is a brief description of FIG. 8, but the drawings filed 07/01/2019 do not include a drawing with that designation. Applicant must respond either by supplying the omitted drawing or by amending the specification to remove all references to that drawing.
- ☐ The drawings filed include FIG. , but the specification's brief description of the drawings does not describe a drawing with that designation. Applicant must respond either by amending the specification to add a brief description of that drawing or by correcting the drawings to remove the drawing in question.
- ☐ In the utility application, drawings are present in the application and are referred to in the detailed description of the invention, but the specification does not contain a brief description of the several views as required by 37 CFR 1.74 and 37 CFR 1.77(b)(9).
- ☐ The design application does not contain a description of the figure or figures of the drawing as required by 37 CFR 1.153(a) and 37 CFR 1.154(b)(4).
- ☐ In the plant application, the specification does not contain a brief description of the drawing as required by 37 CFR 1.163(c)(8).
- ☐ Page of the specification refers to FIG. , but no drawing with that designation is described in the brief description of the drawings and no drawing with that designation is present in the application. Applicant must respond either by amending the specification to remove all references to that drawing, or by supplying that drawing and amending the specification to add a brief description of it.
- ☐ In the reissue application, FIG. , is labeled as "New" but is not described in the reissue specification's brief description of the drawings. Applicant must respond by amending the reissue specification's brief description of the drawings to add a brief description of the new drawing.
- ☐ OTHER:
- ☐ COMMENTS:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
SHAW Norman et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	Attorney Docket: 69726
Examiner: Thai N. PHAM	§	

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Sir:

This is in response to the attached Notice to File Corrected Application Papers dated December 18, 2019, which response is being made on or before February 18, 2020, and for which no extension of time fees are due.

By said Action, the specification's brief description refers to Fig. 8, but the drawings do not include a drawing with that designation.

By way of this Response, Applicant is submitting a Substitute Specification so as to overcome the objections raised in this Notice. An Annotated Specification is also attached herewith (see Page 10).

Statement

The content of the Substitute Specification includes no new matter.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: January 9, 2020

ANNOTATED SPECIFICATION

-1-

APPLICATION FOR PATENT

Inventors: Roderick Allen GAMMONS, Andrew FRANCIS and
Roderick Aaron GAMMONS

Title: LIGHTING SYSTEM AND CONTROL THEREOF

Related Applications

This application claims the benefit of priority of U.S. Provisional Patent Application No. 62/319,809 filed on April 8, 2016, and United Kingdom Patent Application No. 1606907.2 filed on April 20, 2016. The contents of the above applications are incorporated herein by reference in their entirety.

Field and Background of invention

This invention relates to a lighting system, and the control of a lighting system, and the simulation of lighting special effects, and in particular to a lighting system for videography, broadcasting and cinematography.

In the film, broadcast and TV industry a lighting controller called a 'flicker box' which is independent of a lighting device, is used to produce flickering light effects to mimic flickering light for example from a fire place, candle, electrical spark or lightning for on set television/broadcast production use.

The flicker effect provided by these devices is typically created using the analogue circuitry modulators contained within the 'flicker box', controlled manually by dials and levers. Use of a flicker box is typically a complex, costly and time consuming process that requires the setup, connection and control of multiple pieces of hardware typically including external Digital Multiplex (DMX) and power distribution devices, as well as typically requiring a physical wired connection to the 'hot' light source desired to be controlled.

Typically such 'flicker boxes' require specialist knowledge and understanding to operate and remain inaccessible or 'out of reach' to lower budget television

ANNOTATED SPECIFICATION

-2-

productions.

Furthermore, many 'flicker boxes' are incompatible with LED light sources, and such systems require the use of 'hot' incandescent light sources which are energy inefficient and also pose health and safety risks to those working on set, typically therefore requiring qualified lighting gaffers and operators.

An improved solution is desired.

Summary of the Invention

According to one aspect of the invention, there is provided a method for controlling a lighting device to produce user customisable lighting effect, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect.

According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.

Preferably, the parameters of the effects including but not limited to speed, duration, power/brightness and colour temperature can be controlled locally via a simple user interface on the light itself.

Preferably, the start/stop "triggering" of the effects can be controlled locally via a simple user interface on the light itself, remotely via WiFi, Bluetooth, Zigbee

ANNOTATED SPECIFICATION

-3-

or wireless DMX from a smart phone or tablet, or from a wired 3.5mm minijack remote trigger, or a wired DMX trigger.

Preferably, the parameters of the effects can be controlled remotely via WiFi, Bluetooth, Zigbee or wireless DMX from a smart phone or tablet.

Preferably, the parameters of the effects can be controlled Via a serial communications interface (eg. RS232, USB or DMX) from a PC running custom lighting control software.

Preferably, the light source containing in built special effects is in the form of an LED lighting fixture. Alternatively it is in the form of or 'hot' light incandescent fixture.

Preferably, multiple lights may be connected together via wired DMX, or via WiFi, Bluetooth, Zigbee or wireless DMX to produce a synchronised large area special effect.

Preferably, when multiple lights are connected together to produce a synchronized large area special effect, the inter-relationship of those connected lights is customizable so as to allow all of the connected devices to fire at the same time if desired, or, to enable a staggered effect to take place over an extended time duration and with customizable power intensity, in order to create the effect that a static object is moving as the lights "chase" around a scene.

Preferably the method further comprises receiving said at least one simulation parameter for characterising a lighting effect.

So as to recreate realistic effects, preferably the at least one simulation parameter for characterising a lighting effect is random; preferably the at least one simulation parameter for characterising a lighting effect is random within predefined boundaries.

ANNOTATED SPECIFICATION

-4-

Preferably, the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters. Preferably, the random simulation parameter is in a range determined in dependence on one or more user-selectable simulation parameters.

Preferably, the simulation parameter is a colour or colour temperature. Preferably, the colour or colour temperature varies in dependence on a brightness lighting value.

Preferably the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.

Preferably, the method further comprises receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.

Preferably, the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; a fluctuation period; and a trigger.

Preferably, the simulation parameter comprises a camera recording frequency, frame rate, or shutter speed.

Preferably, the system includes rolling shutter compensation enabling the minimum light pulse width to be adjusted to suit the shutter speed or frame rate of the user's camera in order to prevent 'strobing' due to the light effect being out of phase/sync with the frame rate of the camera, ensuring that each frame captured by the camera is fully illuminated.

Preferably the method further comprises receiving a recording frequency, frame rate, or shutter speed of a camera and calculating said time varying lighting

ANNOTATED SPECIFICATION

-5-

value based on said recording frequency, frame rate or shutter speed. Preferably, wherein the time varying lighting value is calculated so as to vary at a slower rate than said camera recording frequency, frame rate, or shutter speed. More preferably wherein the minimum pulse width of said time varying lighting value is longer than said recording frequency, frame rate or shutter speed.

Preferably, a light source can be designated as a 'master', and have connected 'slave' light sources which fire in synchronization with the 'master', or in a customizable sequence, with regard duration, power and/or colour temperature.

Preferably, the 'slave' light sources are connected to the 'master' light source via wired DMX, wireless DMX, wifi, Bluetooth, or RS232 sync cable.

Preferably, the light contained in built special effects, can be powered both from mains power, and/or via its own internal battery power source, providing greater flexibility and portability for location shooting.

Preferably, the light source is capable of producing customisable effects including, but not limited to: Fire, Lightning, Police light, TV simulation, Neon Flickering sign, Muzzle (gunshot), Welding, Spark/Short Circuit, Scan (e.g. fingerprint scanner), Papparazi flashes, Propeller, (Nuclear) Explosion and Wormhole.

Preferably, the simulation iterates through repeated cycles of receiving at least one random simulation parameter and simulating the lighting effect.

Preferably, the lighting effect is designed to mimic at least one or more of: fire flickering; police light; television; lightning flashing; electrical sparking; and fireworks.

Preferably, the lighting value comprises brightness and/or colour data.

ANNOTATED SPECIFICATION

-6-

Preferably, the method further comprises converting brightness and/or colour data into lighting signals and outputting the lighting signal data.

Preferably, the method further comprises controlling one or more light in dependence on the output. Preferably, the controlling comprises changing the brightness and/or colour of the light.

Preferably, the method further comprises receiving a definition of a trigger event; said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect.

Preferably, the method further comprises detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.

Preferably, the method further comprises storing the calculated lighting value.

Preferably, the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

Preferably, the method further comprises controlling a plurality of lights in dependence on the output. Preferably, the said plurality of lights output different lighting values so as to simulate a lighting effect. Preferably, the method further comprises the output of said plurality of lights is offset in time. Preferably, the output of said plurality of lights overlap with one-another so as to simulate a moving light source.

Preferably, one light is a master light and the others of said plurality of lights are slaves.

According to another aspect of the invention there is provided a computing device adapted to perform a method as described herein.

ANNOTATED SPECIFICATION

-7-

According to another aspect of the invention there is provided a controller for a lighting device comprising the computing device as described herein.

According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

Preferably, the controller further comprises a random number source adapted to provide a random number for producing a random simulation parameter for characterising a lighting effect.

Preferably, the controller is adapted to control a plurality of lighting devices in dependence on the time varying lighting value.

Preferably, the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.

Preferably, the controller comprises an input interface adapted to receive a user input.

Preferably, the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.

Preferably, the controller further comprises a converter adapted to convert brightness and/or colour data from the simulator into lighting signals for output by the output.

ANNOTATED SPECIFICATION

-8-

According to another aspect of the invention there is provided a controller adapted to perform a method as described herein.

According to another aspect of the invention there is provided a lighting system comprising a controller as described herein and at least one lighting device.

Preferably, said controller and said lighting device are integrated in a combined unit.

Preferably, the lighting system further comprises a further lighting device separate from said controller.

Preferably, the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

The invention extends to any novel aspects or features described and/or illustrated herein.

Further features of the invention are characterised by the other independent and dependent claims

Any feature in one aspect of the invention may be applied to other aspects of the invention, in any appropriate combination. In particular, method aspects may be applied to apparatus aspects, and vice versa.

Furthermore, features implemented in hardware may be implemented in software, and vice versa. Any reference to software and hardware features herein should be construed accordingly.

Any apparatus feature as described herein may also be provided as a method feature, and vice versa. As used herein, means plus function features may be

ANNOTATED SPECIFICATION

-9-

expressed alternatively in terms of their corresponding structure, such as a suitably programmed processor and associated memory.

It should also be appreciated that particular combinations of the various features described and defined in any aspects of the invention can be implemented and/or supplied and/or used independently.

The invention also provides a computer program and a computer program product comprising software code adapted, when executed on a data processing apparatus, to perform any of the methods described herein, including any or all of their component steps.

The invention also provides a computer program and a computer program product comprising software code which, when executed on a data processing apparatus, comprises any of the apparatus features described herein.

The invention also provides a computer program and a computer program product having an operating system which supports a computer program for carrying out any of the methods described herein and/or for embodying any of the apparatus features described herein.

The invention also provides a computer readable medium having stored thereon the computer program as aforesaid.

The invention also provides a signal carrying the computer program as aforesaid, and a method of transmitting such a signal.

The invention extends to methods and/or apparatus substantially as herein described with reference to the accompanying drawings.

Brief Description of the Several Views of the Drawings

ANNOTATED SPECIFICATION

-10-

The invention will now be described by way of example, with references to the accompanying drawings in which:

Figure 1 is a schematic diagram of a 'flickerbox' lighting system;

Figure 2 is a schematic diagram of a further lighting system;

Figure 3 is a flow diagram of a method for adjusting a lighting device;

Figure 4 is a schematic diagram of a further lighting system;

Figure 5 shows a time/brightness plot for a system of linked lights;

Figure 6 is a graphic user interface for user input of simulation parameters; and

Figure 7 is a graph of light brightness over time.

~~Figure 8 is a flow diagram of a method for controlling a lighting device~~

Description of Specific Embodiments of the Invention

In the present description the term 'camera' may be understood to mean a camera (such as a digital camera, or 'film' camera) operable to record moving images. The lighting system may therefore be for a lighting system for videography, broadcasting, cinematography, studio filming and/or location filming.

Figure 1 shows a schematic diagram of a 'flickerbox' lighting control system. The system comprises an analogue effect simulator, 300, a DMX distribution hub 302, an AC power generator 306, an AC power distribution module 302 and a plurality of incandescent lights 102. The analogue effect simulator 300 simulates a lighting effect such as fire, or electrical sparking based on various parameters. The analogue effect simulator 300 produces data 106 such as brightness parameters that vary over time for producing the desired lighting effect. The data 106 is used to modulate the light 102 such that the desired lighting effect is produced. The user has very limited ability to alter many of the parameters to adapt the lighting effect as desired.

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the light 102 is an array of LEDs, preferably of differing colours. This arrangement does

ANNOTATED SPECIFICATION

-11-

not require the DMX distribution hub 302, power elements 304, 306 as described above, and is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp device 120 for performing calculations. A control panel is provided at a back panel of the lamp device 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an effect. In a variant a simple digital interface is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the lamp device 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation parameters and transmitting that data to the lamp device 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

Having the ability to control the special FX from the light source, which in itself is a bi-colour LED Fixture also entirely eliminates that aspect of the process, the user can simply adjust the colour temperature from the back of the unit, with a visible numeric display of that number eliminating significant time from the process.

This is also a significant limiting factor in the creation of effects such as fire which typically burn blue on hotter peaks. It would be possible using an LED light source containing in built special effects to reproduce both the warm "orange" light output near the tungsten end of the scale, whilst also adding a "colour swing blue" on the peaks from the same light source, something that

ANNOTATED SPECIFICATION

-12-

would not be possible using a legacy system.

Examples of user defined parameters that the light containing in built special effects can customize in simulating a lighting effect are now described in more detail:

- ◆ **Brightness:** The peak luminance of the effect from 1% to 100% of the lamp's available luminance output.
- ◆ **Colour:** For multicolour effects this sets the range of colours used over the spectrum of red, green and blue. For single colour effects it sets the colour temperature of the light.
- ◆ **Trigger:** To start the effect running. For example, a manual trigger may be selected for manually triggering the start of a lightning burst, TV screen, or other effect.
- ◆ **Frequency:** typically from 0.5Hz to 50Hz. This sets an average period between light peaks – e.g. a roaring fire may have a higher frequency than a single candle flame.
- ◆ **Depth:** typically from 0% to 90%. This sets a base level of illumination of the effect. For example a fire may have a base level of 50% illumination superimposed on a level varying from 50% to 100% to simulate flickering flames.
- ◆ **Rolling Shutter Compensation:** Film and TV cameras typically operate at frequencies between 24Hz and 60Hz. In order to provide consistent illumination during each camera frame, short time-period (e.g. stroboscopic) lighting effects should have a minimum pulse width which lasts at least one camera frame period. This parameter can be adjusted to suit the camera and frame rate.
- ◆ **'Colour Swing Blue'** simulates the effect of flame going up the chimney, 'peaks' within the fire effect can be switched to transition between yellow and blue, to match the colour of a flame, creating a more dynamic and 3D

ANNOTATED SPECIFICATION

-13-

fire effect. The brighter the 'spark' the more blue the light output is. The colour of the output is therefore dependent on the brightness of the output (or vice versa).

Further examples of lighting effects are for example to mimic television screen flicker, cinema illumination, illumination in a vehicle passing through a tunnel, or any situation where the lighting varies over time in a characteristic manner. A simulation can be defined that represents the characteristics of the lighting effect, and suitable random parameters can be used to introduce a realistic variance in the lighting effect.

In a variant the simulator operates with pre-defined parameters and random numbers, without further user input of parameters. This can still provide a realistic lighting effect, albeit with less adaptation to the user's preferences.

Figure 3 illustrates a simple example of a method for simulating a lighting effect. In a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters. Where a random parameter is algorithmically generated it is only pseudo-random, but for the purposes of the simulation a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter. In a second step S2 a simulation is performed based on a simulation model and the received parameters. The nature of the simulation model can vary greatly, depending on the lighting effect that is desired and the sophistication of the desired simulation. The simulation calculates how the lighting changes over time in order to produce the desired lighting effect. Following simulation in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, in order to produce the desired lighting effect.

Figure 4 schematically shows an example showing a master light source 102 built into a lighting control unit 130 and a 'slave' light source 102-1 separate from the lighting control unit. The lighting effect simulator 100 creates data 106 characterising a lighting effect and controls the master light 102 as described above. The data 106 is transmitted to the slave light 102-1 via (for example) a

ANNOTATED SPECIFICATION

-14-

serial communication interface (e.g. RS232, USB or DMX) or by wireless transmission (e.g. Wi-Fi®, Bluetooth® Zigbee®, or via a mobile communication network utilising protocols such as GSM (Groupe Special Mobile) 3GPP (3rd Generation Partnership), or 4G LTE (Long term evolution)). The additional 'slave' light source 102-1 thereby allows the production of a lighting effect with more than one light device but without duplication of controllers 130. Such additional light sources can for example increase the area of illumination or increase the power of the lighting effect.

The use of multiple lights 102 affords additional options for producing advanced effects. Figure 5 shows a time/brightness plot of a 'chase' effect. In this example, three lights produce outputs 200, 202 and 204 separated in time. In such a way, an effect of a light source (such as a passing car) can be replicated. The relative timing of the light sources can be adjusted depending on the relative location of the sources, and the speed of the effect to be replicated. It should be noted that the 'fade up' and 'fade down' portions of each light output 200, 202, 204 overlap with one-another to more accurately replicate the effect of a moving object, as opposed to a element jumping from one location to another.

Related effects utilising similar timing controls are be 'paparazzi' of multiple flashes coming from different locations, or a 'propeller' simulating a light source being obscured by a rotating propeller. The use of a single controller 130 may be used to control all of the lights 102 so as to ensure an appropriate delay (or absence of delay).

Figure 6 shows an example of a graphic user interface 800 for user input of simulation parameters. In the illustrated example the lighting effect to be simulated is a fire effect. The user can select a fire activity (with a slider positioned from 'low' to 'high') to set a frequency parameter as described above; a fire colour; a peak brightness; a baseline brightness to set a depth parameter as described above; and a camera frequency. A wide range of further parameters can be provided for user input, for example if the fire activity, brightness and/or colour is to change over time (to mimic a fire dying down and

ANNOTATED SPECIFICATION

-15-

reducing to embers or to mimic addition of fuel to a fire). The user may also be provided with an option of superimposing different types of lighting effects, for example to mimic candlelight during a lightning storm.

In one example, the rolling shutter compensation controls a minimum light pulse to match the shutter speed or frame rate of the user's camera (camera frequency) to ensure even illumination across the frame and eliminate possible strobing. Therefore, the duration of the light pulse is longer than one period of the camera's recording frequency, or in other words, the lighting value varies at a lower frequency than the frequency of the camera.

The lighting effect simulator 100 typically provides data 106 in the form of brightness and/or colour values that vary over time. In order to cause the light 102 to produce the desired effect a lighting data converter may convert the data 106 from the lighting effect simulator 100 into a suitable signal for a particular light 102. For example for a light emitting diode (LED) array lighting the data conversion occurs at an LED lamp control logic that produces and supplies a separate pulse-width-modulation output for each LED colour to an LED drive circuit. A lighting data converter may be provided separately from the lighting effect simulator 100 and the light 102 or it may be integrated with one or the other or both.

The light 102 in one example comprises an array of different types of LEDs, preferably red, green, blue and white LEDs, or a bi colour fixture comprising warm typically 2800K LEDs and 'cool' 7000K LEDs which blend together to create a range of colour from 3200-6300K. The array may be a panel, flood light, spot light, a cluster or any other arrangement of LEDs. This provides the ability for the lighting to produce light of any visible colour by varying the relative intensities of the different LEDs. The lighting may alternatively be a filament (incandescent), halogen or other type of lighting.

The simulation may be performed on the fly, with lighting data values output from the simulator 100 to the light 102 in near-real time, or the simulation may be performed in advance and the lighting data values output for storage and later use to enable quick reproduction on set or location.

ANNOTATED SPECIFICATION

-16-

The lighting control system can reduce the number of devices required to provide lighting effects, especially where the lighting effect simulator is integrated in a light. This can significantly reduce equipment costs and time required to set up equipment. The system is also more portable allowing power from its on internal power source or battery instead of requiring an external power generator or mains powered solution. The lighting control system can be used for studio and location filming lighting systems, and more generally for videography, broadcast and/or cinematography.

A non-exhaustive list of example effects that may be produced by the system are as follows:

- Strobe - The strobe range in one example is from 1hz up to 4hz. The last used strobe parameters are stored in non-volatile memory (which applies to any effect described herein). A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras.
- Lightning – this effect simulates lightning in a random manner, but a user may control the speed at which the lighting bursts re-occur. This effect is most realistic if the brightness is set to 100% and colour temperature is set at 6000K. A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras. The duration of the lightning flashes in one example is 20ms. The lightning strikes in one example come in bursts of between 2 and 8 random length pulses.
- Throb - Throb is a regular smoothly pulsing light
- Weld - this effect replicates a welding arc.
- Colour cycle – This is a regular smoothly pulsing light which fades between the tungsten and blue LEDs
- Fire – this effect replicates a fire with 'dancing flames' as is described in more detail below.
- Police – This effect is an emulation of an emergency services light, and may be most realistic in blue light.

ANNOTATED SPECIFICATION

-17-

- **Television** – This effect is an emulation of someone watching TV.

It should be appreciated that due to the nature of the light 102, the effects may be customised by a user, for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user input simulation parameters may be stored in memory 220 and recalled from the memory 220 at a later time. The effects may be triggered on cue (for example from a director) by sending a signal over a wired remote trigger or wireless device.

It should also be appreciated that multiple effects may be emulated simultaneously, for example, fire and lightning may be present simultaneously using a single lighting unit.

An example of a simulation for producing a fire effect is now described in more detail.

Fire is simulated as a series of 'sparks'. Each spark has the following random parameters:

- ♦ **Interval:** New sparks are generated at an interval which varies randomly between a defined maximum and minimum interval.
- ♦ **Peak:** The peak luminance of each spark varies randomly between a defined minimum and maximum.
- ♦ **Ramp-up time:** The luminance of each spark ramps up to the peak at a randomly generated rate.
- ♦ **Fade-down time:** The fade from the peak is linked to the ramp-up time but is much slower – simulating the gradual decline in luminance of a burning ember.

If the interval is short with respect to the ramp-up and fade-down time, then sparks can overlap in time – in which case the brightest spark determines the

ANNOTATED SPECIFICATION

-18-

lamp luminance.

The lighting effect simulator typically cycles round a loop calculating new lamp brightness and colour values. Alternatively the calculation can be triggered by an interrupt generated by a timer. The calculation is typically performed every 250µs.

The duration of each spark can be controlled by choosing whether or not to perform a new brightness calculation based on the value of a counter which is decremented every time an interrupt occurs. When the counter reaches zero it is either reset to its previous start value or, for a new spark, a new count start value is randomly generated. In this way each spark has a different speed, duration and peak – simulating the look of a real flame.

Generating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of a real flame and replaying it at different speeds.

An example sequence of instructions for the simulation is as follows:

At the end of a spark up and down period:

- Reset duration for next spark to between 2.5s to 5s
- Generate new brightness targets for the next spark between 12.5% and 100% of current maximum brightness setting.
- Offset the random brightness targets by the requested brightness floor value
- Set the new peak brightness target for the new spark
- Ensure the new targets are greater than the existing faded brightness value to prevent downward jumps
- Set the fade direction to UP

Start new animation frame:

ANNOTATED SPECIFICATION

-19-

- Calculate brightness fade step sizes:
 - Fade up fast, progressively larger fade step sizes
 - Change fade direction at peak
 - Fade down slow, progressively smaller fade step sizes
- Set the frame rate for the new spark to a random value
 - prevent the curtailment of a long fade by a new short pulse: if the faded brightness is still > 25% of max then don't allow new FramePeriod to be less than old.

Figure 7 shows an example of the brightness varying over time produced according to a simulation as described above. Two peaks can be seen, one reaching 100% intensity and the other reaching 91% intensity. The first peak fades up from 10% to 100% in 0.85 seconds, and back down to 56% in 0.75 seconds. The second peak fades up from 56% to 91% in 0.33 seconds, and back down to 60% in 1.07 seconds. The fade up starts shallower and becomes steeper as it progresses. The fade down starts steep and becomes shallower as it progresses. A toggle switch is also shown which toggles between 'Colour Swing Blue' and 'Monochrome'. Colour Swing Blue represents modifying the colour of peaks in brightness so as to replicate the increased temperature of sparks in a fire, Monochrome may be used when (for example) filming in black and white, or when altering colour of the effect may have deleterious effects on other elements of the scene (for example, rendering text difficult to read).

An example of a simulation for producing a lightning effect is now described in more detail. Lightning is simulated as a sequence of 'bursts' or groups of flashes. The number of flashes in each burst, the delay between bursts, the delay between each flash within the burst, and the amplitude of each flash are all set randomly within certain boundaries. The minimum 'on' time period of each flash can be set by the user to ensure full illumination of the camera frame. The lamp can also be set into a mode where a burst of flashes is triggered by the push of a button. In this way the effect can be triggered on demand by the user.

ANNOTATED SPECIFICATION

-20-

An example sequence of instructions for the simulation of lightning, with a series of bursts of flashes, is as follows:

At the end of a burst of flashes recalculate the parameters for the next burst:

- Reset the number of flashes in a burst to a random number between 2 and 10
- Reset the period to next burst to a random number between 2.5 and 5s.

Calculate parameters for each flash in a burst of flashes:

- Randomly modulate brightness of each flash slightly
- Reset the time to next flash to a random number between 8ms and 220ms
- Reset the 'on' flash duration to a random number between 8ms and 120ms
 - ensure a minimum off-period is maintained between flashes
- For the final flash set the duration to a random number between 10ms and 113ms

The lighting system, lighting effect simulator, lighting controller, lighting device, computing device, and/or computer program product may have one or more of the following features:

- built-in capability to generate a range of cinematic special effects by modulating the colour and brightness of the light output.
- the parameters of the effects can be controlled via a simple user interface on the lamp itself.
- the parameters of the effects can be controlled remotely via WiFi or DMX from a smart phone or tablet.
- networked with other lights to produce a synchronised large area special effect.

ANNOTATED SPECIFICATION

-21-

- minimum light pulse width can be adjusted to suit the shutter speed or frame rate of the user's camera to ensure even illumination across the frame.

Various other modifications will be apparent to those skilled in the art. It will be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention. For example, it should be appreciated that the effect simulator 100 or the computing device 130 may be separate from any light 102, and connectable to lights 102, by either a wired or wireless connection.

The lighting effect simulator 100 may be provided by way of a suitably adapted computing device 120 or 130 such as a PC, tablet or smart phone, with suitable software for user input of simulation parameters. The computing device 120 or 130 may be a suitably adapted light controller device with suitable controls for user input of simulation parameters

Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.

SUBSTITUTE SPECIFICATION

-1-

APPLICATION FOR PATENT

Inventors: Roderick Allen GAMMONS, Andrew FRANCIS and
Roderick Aaron GAMMONS

Title: LIGHTING SYSTEM AND CONTROL THEREOF

Related Applications

This application claims the benefit of priority of U.S. Provisional Patent Application No. 62/319,809 filed on April 8, 2016, and United Kingdom Patent Application No. 1606907.2 filed on April 20, 2016. The contents of the above applications are incorporated herein by reference in their entirety.

Field and Background of invention

This invention relates to a lighting system, and the control of a lighting system, and the simulation of lighting special effects, and in particular to a lighting system for videography, broadcasting and cinematography.

In the film, broadcast and TV industry a lighting controller called a 'flicker box' which is independent of a lighting device, is used to produce flickering light effects to mimic flickering light for example from a fire place, candle, electrical spark or lightning for on set television/broadcast production use.

The flicker effect provided by these devices is typically created using the analogue circuitry modulators contained within the 'flicker box', controlled manually by dials and levers. Use of a flicker box is typically a complex, costly and time consuming process that requires the setup, connection and control of multiple pieces of hardware typically including external Digital Multiplex (DMX) and power distribution devices, as well as typically requiring a physical wired connection to the 'hot' light source desired to be controlled.

SUBSTITUTE SPECIFICATION

-2-

Typically such 'flicker boxes' require specialist knowledge and understanding to operate and remain inaccessible or 'out of reach' to lower budget television productions.

Furthermore, many 'flicker boxes' are incompatible with LED light sources, and such systems require the use of 'hot' incandescent light sources which are energy inefficient and also pose health and safety risks to those working on set, typically therefore requiring qualified lighting gaffers and operators.

An improved solution is desired.

Summary of the Invention

According to one aspect of the invention, there is provided a method for controlling a lighting device to produce user customisable lighting effect, the method comprising: calculating a time varying lighting value based on at least one simulation parameter; and outputting said time varying lighting value thereby to simulate a lighting effect.

According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

In a further aspect of the present invention there is provided a light with the built-in capability to generate a range of customizable cinematic special lighting effects, by modulating the speed, duration, power/brightness, and/or colour temperature of the light output.

Preferably, the parameters of the effects including but not limited to speed,

SUBSTITUTE SPECIFICATION

-3-

duration, power/brightness and colour temperature can be controlled locally via a simple user interface on the light itself.

Preferably, the start/stop “triggering” of the effects can be controlled locally via a simple user interface on the light itself, remotely via WiFi, Bluetooth, Zigbee or wireless DMX from a smart phone or tablet, or from a wired 3.5mm minijack remote trigger, or a wired DMX trigger.

Preferably, the parameters of the effects can be controlled remotely via WiFi, Bluetooth, Zigbee or wireless DMX from a smart phone or tablet.

Preferably, the parameters of the effects can be controlled Via a serial communications interface (eg. RS232, USB or DMX) from a PC running custom lighting control software.

Preferably, the light source containing in built special effects is in the form of an LED lighting fixture. Alternatively it is in the form of or ‘hot’ light incandescent fixture.

Preferably, multiple lights may be connected together via wired DMX, or via WiFi, Bluetooth, Zigbee or wireless DMX to produce a synchronised large area special effect.

Preferably, when multiple lights are connected together to produce a synchronized large area special effect, the inter-relationship of those connected lights is customizable so as to allow all of the connected devices to fire at the same time if desired, or, to enable a staggered effect to take place over an extended time duration and with customizable power intensity, in order to create the effect that a static object is moving as the lights “chase” around a scene.

SUBSTITUTE SPECIFICATION

-4-

Preferably the method further comprises receiving said at least one simulation parameter for characterising a lighting effect.

So as to recreate realistic effects, preferably the at least one simulation parameter for characterising a lighting effect is random; preferably the at least one simulation parameter for characterising a lighting effect is random within predefined boundaries.

Preferably, the random simulation parameter is determined in dependence on one or more user-selectable simulation parameters. Preferably, the random simulation parameter is in a range determined in dependence on one or more user-selectable simulation parameters.

Preferably, the simulation parameter is a colour or colour temperature. Preferably, the colour or colour temperature varies in dependence on a brightness lighting value.

Preferably the simulation parameter is related to one or more of: a rate of increase of brightness; a rate of decrease of brightness; a rate of change of colour; a brightness; a local maximal brightness; a local minimal brightness; a brightness fluctuation period; and a colour fluctuation period.

Preferably, the method further comprises receiving a user input of one or more user-selectable simulation parameters and adapting the simulation in dependence on the one or more user-selectable simulation parameters.

Preferably, the simulation parameter comprises at least one of: a maximum brightness; a minimum brightness; a colour; a fluctuation period; and a trigger.

Preferably, the simulation parameter comprises a camera recording frequency, frame rate, or shutter speed.

SUBSTITUTE SPECIFICATION

-5-

Preferably, the system includes rolling shutter compensation enabling the minimum light pulse width to be adjusted to suit the shutter speed or frame rate of the user's camera in order to prevent 'strobing' due to the light effect being out of phase/sync with the frame rate of the camera, ensuring that each frame captured by the camera is fully illuminated.

Preferably the method further comprises receiving a recording frequency, frame rate, or shutter speed of a camera and calculating said time varying lighting value based on said recording frequency, frame rate or shutter speed. Preferably, wherein the time varying lighting value is calculated so as to vary at a slower rate than said camera recording frequency, frame rate, or shutter speed. More preferably wherein the minimum pulse width of said time varying lighting value is longer than said recording frequency, frame rate or shutter speed.

Preferably, a light source can be designated as a 'master', and have connected 'slave' light sources which fire in synchronization with the 'master', or in a customizable sequence, with regard duration, power and/or colour temperature.

Preferably, the 'slave' light sources are connected to the 'master' light source via wired DMX, wireless DMX, wifi, Bluetooth, or RS232 sync cable.

Preferably, the light contained in built special effects, can be powered both from mains power, and/or via its own internal battery power source, providing greater flexibility and portability for location shooting.

Preferably, the light source is capable of producing customisable effects including, but not limited to: Fire, Lightning, Police light, TV simulation, Neon Flickering sign, Muzzle (gunshot), Welding, Spark/Short Circuit, Scan (e.g.

SUBSTITUTE SPECIFICATION

-6-

fingerprint scanner), Papparazi flashes, Propeller, (Nuclear) Explosion and Wormhole.

Preferably, the simulation iterates through repeated cycles of receiving at least one random simulation parameter and simulating the lighting effect.

Preferably, the lighting effect is designed to mimic at least one or more of: fire flickering; police light; television; lightning flashing; electrical sparking; and fireworks.

Preferably, the lighting value comprises brightness and/or colour data.

Preferably, the method further comprises converting brightness and/or colour data into lighting signals and outputting the lighting signal data.

Preferably, the method further comprises controlling one or more light in dependence on the output. Preferably, the controlling comprises changing the brightness and/or colour of the light.

Preferably, the method further comprises receiving a definition of a trigger event; said trigger event initiating said output of the time varying lighting value thereby to simulate a lighting effect.

Preferably, the method further comprises detecting an occurrence of the trigger event and outputting said time varying lighting value thereby to simulate a lighting effect.

Preferably, the method further comprises storing the calculated lighting value.

SUBSTITUTE SPECIFICATION

-7-

Preferably, the controlling is for a lighting system for videography, broadcast, cinematography, studio filming and/or location filming.

Preferably, the method further comprises controlling a plurality of lights in dependence on the output. Preferably, the said plurality of lights output different lighting values so as to simulate a lighting effect. Preferably, the method further comprises the output of said plurality of lights is offset in time. Preferably, the output of said plurality of lights overlap with one-another so as to simulate a moving light source.

Preferably, one light is a master light and the others of said plurality of lights are slaves.

According to another aspect of the invention there is provided a computing device adapted to perform a method as described herein.

According to another aspect of the invention there is provided a controller for a lighting device comprising the computing device as described herein.

According to another aspect of the invention there is provided a controller for controlling a lighting device to produce a lighting effect, the controller comprising: a calculating device adapted to calculate a time varying lighting value based on at least one simulation parameter; and an output adapted to control a lighting device according to the determined variation of lighting over time.

Preferably, the controller further comprises a random number source adapted to provide a random number for producing a random simulation parameter for characterising a lighting effect.

SUBSTITUTE SPECIFICATION

-8-

Preferably, the controller is adapted to control a plurality of lighting devices in dependence on the time varying lighting value.

Preferably, the controller comprises a wireless communication interface adapted for wireless communication with one or more lighting devices.

Preferably, the controller comprises an input interface adapted to receive a user input.

Preferably, the input interface comprises at least one of: a wireless communication interface; a dial; a slider; a display and buttons; and a touch screen.

Preferably, the controller further comprises a converter adapted to convert brightness and/or colour data from the simulator into lighting signals for output by the output.

According to another aspect of the invention there is provided a controller adapted to perform a method as described herein.

According to another aspect of the invention there is provided a lighting system comprising a controller as described herein and at least one lighting device.

Preferably, said controller and said lighting device are integrated in a combined unit.

Preferably, the lighting system further comprises a further lighting device separate from said controller.

SUBSTITUTE SPECIFICATION

-9-

Preferably, the lighting device is a lighting device for videography, broadcast, cinematography, studio filming and/or location filming.

The invention extends to any novel aspects or features described and/or illustrated herein.

Further features of the invention are characterised by the other independent and dependent claims

Any feature in one aspect of the invention may be applied to other aspects of the invention, in any appropriate combination. In particular, method aspects may be applied to apparatus aspects, and vice versa.

Furthermore, features implemented in hardware may be implemented in software, and vice versa. Any reference to software and hardware features herein should be construed accordingly.

Any apparatus feature as described herein may also be provided as a method feature, and vice versa. As used herein, means plus function features may be expressed alternatively in terms of their corresponding structure, such as a suitably programmed processor and associated memory.

It should also be appreciated that particular combinations of the various features described and defined in any aspects of the invention can be implemented and/or supplied and/or used independently.

The invention also provides a computer program and a computer program product comprising software code adapted, when executed on a data

SUBSTITUTE SPECIFICATION

-10-

processing apparatus, to perform any of the methods described herein, including any or all of their component steps.

The invention also provides a computer program and a computer program product comprising software code which, when executed on a data processing apparatus, comprises any of the apparatus features described herein.

The invention also provides a computer program and a computer program product having an operating system which supports a computer program for carrying out any of the methods described herein and/or for embodying any of the apparatus features described herein.

The invention also provides a computer readable medium having stored thereon the computer program as aforesaid.

The invention also provides a signal carrying the computer program as aforesaid, and a method of transmitting such a signal.

The invention extends to methods and/or apparatus substantially as herein described with reference to the accompanying drawings.

Brief Description of the Several Views of the Drawings

The invention will now be described by way of example, with references to the accompanying drawings in which:

Figure 1 is a schematic diagram of a 'flickerbox' lighting system;

Figure 2 is a schematic diagram of a further lighting system;

Figure 3 is a flow diagram of a method for adjusting a lighting device;

Figure 4 is a schematic diagram of a further lighting system;

SUBSTITUTE SPECIFICATION

-11-

Figure 5 shows a time/brightness plot for a system of linked lights;

Figure 6 is a graphic user interface for user input of simulation parameters; and

Figure 7 is a graph of light brightness over time.

Description of Specific Embodiments of the Invention

In the present description the term 'camera' may be understood to mean a camera (such as a digital camera, or 'film' camera) operable to record moving images. The lighting system may therefore be for a lighting system for videography, broadcasting, cinematography, studio filming and/or location filming.

Figure 1 shows a schematic diagram of a 'flickerbox' lighting control system. The system comprises an analogue effect simulator, 300, a DMX distribution hub 302, an AC power generator 306, an AC power distribution module 302 and a plurality of incandescent lights 102. The analogue effect simulator 300 simulates a lighting effect such as fire, or electrical sparking based on various parameters. The analogue effect simulator 300 produces data 106 such as brightness parameters that vary over time for producing the desired lighting effect. The data 106 is used to modulate the light 102 such that the desired lighting effect is produced. The user has very limited ability to alter many of the parameters to adapt the lighting effect as desired.

Figure 2 schematically shows an example where a lighting effect simulator 100 and the light 102 are integrated in a single studio lamp device 120. In one example, the light 102 is an array of LEDs, preferably of differing colours. This arrangement does not require the DMX distribution hub 302, power elements 304, 306 as described above, and is more flexible in producing effects as will be described in more detail below. A microcontroller or other computing unit is integrated in the lamp device 120 for performing calculations. A control panel is provided at a back panel of the lamp device 120. The control panel can include for example buttons, rotary knobs, sliders, and/or a display/input panel for user input of parameters for simulating an

SUBSTITUTE SPECIFICATION

-12-

effect. In a variant a simple digital interface is provided on the light itself for user input of simulation parameters to control the lighting effect. In another variant the lamp device 120 is adapted for communication with a wireless user device and receives user-selectable simulation parameters to control the lighting effect from the user device. The user device may for example be a tablet or smart phone with suitable hardware / software (e.g. an app) for receiving user input of simulation parameters and transmitting that data to the lamp device 120. The system of Figure 2 is simpler to set up and less expensive than that of Figure 1 as there are fewer pieces of hardware. Furthermore the energy inefficiency of 'hot light' systems (i.e. a 1K hot light consumes 1000 watt/hour, vs 38 watt per hour of current generation LED system), Systems such as that described in Figure 1 using a flicker box and typically 'hot lights' also suffer from the significant disadvantage that a hot light is a fixed colour of light, either daylight 5600K or most commonly tungsten 3200K. When recreating an effect such a lightning this effect would appear at the blue end of the colour spectrum i.e. 7000K+ so utilising a 3200K light for this would require an operator to climb up a ladder to apply one or more CTB (Colour temperature blue) filter(s) to the light in order to achieve the desired colour temperature.

Having the ability to control the special FX from the light source, which in itself is a bi-colour LED Fixture also entirely eliminates that aspect of the process, the user can simply adjust the colour temperature from the back of the unit, with a visible numeric display of that number eliminating significant time from the process.

This is also a significant limiting factor in the creation of effects such as fire which typically burn blue on hotter peaks. It would be possible using an LED light source containing in built special effects to reproduce both the warm "orange" light output near the tungsten end of the scale, whilst also adding a "colour swing blue" on the peaks from the same light source, something that would not be possible using a legacy system.

Examples of user defined parameters that the light containing in built special

SUBSTITUTE SPECIFICATION

-13-

effects can customize in simulating a lighting effect are now described in more detail:

- ◆ **Brightness:** The peak luminance of the effect from 1% to 100% of the lamp's available luminance output.
- ◆ **Colour:** For multicolour effects this sets the range of colours used over the spectrum of red, green and blue. For single colour effects it sets the colour temperature of the light.
- ◆ **Trigger:** To start the effect running. For example, a manual trigger may be selected for manually triggering the start of a lightning burst, TV screen, or other effect.
- ◆ **Frequency:** typically from 0.5Hz to 50Hz. This sets an average period between light peaks – e.g. a roaring fire may have a higher frequency than a single candle flame.
- ◆ **Depth:** typically from 0% to 90%. This sets a base level of illumination of the effect. For example a fire may have a base level of 50% illumination superimposed on a level varying from 50% to 100% to simulate flickering flames.
- ◆ **Rolling Shutter Compensation:** Film and TV cameras typically operate at frequencies between 24Hz and 60Hz. In order to provide consistent illumination during each camera frame, short time-period (e.g. stroboscopic) lighting effects should have a minimum pulse width which lasts at least one camera frame period. This parameter can be adjusted to suit the camera and frame rate.
- ◆ **'Colour Swing Blue'** simulates the effect of flame going up the chimney, 'peaks' within the fire effect can be switched to transition between yellow and blue, to match the colour of a flame, creating a more dynamic and 3D

SUBSTITUTE SPECIFICATION

-14-

fire effect. The brighter the 'spark' the more blue the light output is. The colour of the output is therefore dependent on the brightness of the output (or vice versa).

Further examples of lighting effects are for example to mimic television screen flicker, cinema illumination, illumination in a vehicle passing through a tunnel, or any situation where the lighting varies over time in a characteristic manner. A simulation can be defined that represents the characteristics of the lighting effect, and suitable random parameters can be used to introduce a realistic variance in the lighting effect.

In a variant the simulator operates with pre-defined parameters and random numbers, without further user input of parameters. This can still provide a realistic lighting effect, albeit with less adaptation to the user's preferences.

Figure 3 illustrates a simple example of a method for simulating a lighting effect. In a first step S1 simulation parameters are received, such as random parameters and/or user-selectable parameters. Where a random parameter is algorithmically generated it is only pseudo-random, but for the purposes of the simulation a pseudo-random parameter is sufficiently random for realistic simulation and is hence considered to be equivalent to a truly random parameter. In a second step S2 a simulation is performed based on a simulation model and the received parameters. The nature of the simulation model can vary greatly, depending on the lighting effect that is desired and the sophistication of the desired simulation. The simulation calculates how the lighting changes over time in order to produce the desired lighting effect. Following simulation in a third step S3 the lighting information determined by the simulation is output, for example to a lighting device, in order to produce the desired lighting effect.

Figure 4 schematically shows an example showing a master light source 102 built into a lighting control unit 130 and a 'slave' light source 102-1 separate

SUBSTITUTE SPECIFICATION

-15-

from the lighting control unit. The lighting effect simulator 100 creates data 106 characterising a lighting effect and controls the master light 102 as described above. The data 106 is transmitted to the slave light 102-1 via (for example) a serial communication interface (e.g. RS232, USB or DMX) or by wireless transmission (e.g. Wi-Fi®, Bluetooth®, Zigbee®, or via a mobile communication network utilising protocols such as GSM (Groupe Special Mobile) 3GPP (3rd Generation Partnership), or 4G LTE (Long term evolution)). The additional 'slave' light source 102-1 thereby allows the production of a lighting effect with more than one light device but without duplication of controllers 130. Such additional light sources can for example increase the area of illumination or increase the power of the lighting effect.

The use of multiple lights 102 affords additional options for producing advanced effects. Figure 5 shows a time/brightness plot of a 'chase' effect. In this example, three lights produce outputs 200, 202 and 204 separated in time. In such a way, an effect of a light source (such as a passing car) can be replicated. The relative timing of the light sources can be adjusted depending on the relative location of the sources, and the speed of the effect to be replicated. It should be noted that the 'fade up' and 'fade down' portions of each light output 200, 202, 204 overlap with one-another to more accurately replicate the effect of a moving object, as opposed to a element jumping from one location to another.

Related effects utilising similar timing controls are be 'paparazzi' of multiple flashes coming from different locations, or a 'propeller' simulating a light source being obscured by a rotating propeller. The use of a single controller 130 may be used to control all of the lights 102 so as to ensure an appropriate delay (or absence of delay).

Figure 6 shows an example of a graphic user interface 800 for user input of simulation parameters. In the illustrated example the lighting effect to be simulated is a fire effect. The user can select a fire activity (with a slider

SUBSTITUTE SPECIFICATION

-16-

positioned from 'low' to 'high') to set a frequency parameter as described above; a fire colour; a peak brightness; a baseline brightness to set a depth parameter as described above; and a camera frequency. A wide range of further parameters can be provided for user input, for example if the fire activity, brightness and/or colour is to change over time (to mimic a fire dying down and reducing to embers or to mimic addition of fuel to a fire). The user may also be provided with an option of superimposing different types of lighting effects, for example to mimic candlelight during a lightning storm.

In one example, the rolling shutter compensation controls a minimum light pulse to match the shutter speed or frame rate of the user's camera (camera frequency) to ensure even illumination across the frame and eliminate possible strobing. Therefore, the duration of the light pulse is longer than one period of the camera's recording frequency, or in other words, the lighting value varies at a lower frequency than the frequency of the camera.

The lighting effect simulator 100 typically provides data 106 in the form of brightness and/or colour values that vary over time. In order to cause the light 102 to produce the desired effect a lighting data converter may convert the data 106 from the lighting effect simulator 100 into a suitable signal for a particular light 102. For example for a light emitting diode (LED) array lighting the data conversion occurs at an LED lamp control logic that produces and supplies a separate pulse-width-modulation output for each LED colour to an LED drive circuit. A lighting data converter may be provided separately from the lighting effect simulator 100 and the light 102 or it may be integrated with one or the other or both.

The light 102 in one example comprises an array of different types of LEDs, preferably red, green, blue and white LEDs, or a bi colour fixture comprising warm typically 2800K LEDs and 'cool' 7000K LEDs which blend together to create a range of colour from 3200-6300K. The array may be a panel, flood light, spot light, a cluster or any other arrangement of LEDs. This provides the

SUBSTITUTE SPECIFICATION

-17-

ability for the lighting to produce light of any visible colour by varying the relative intensities of the different LEDs. The lighting may alternatively be a filament (incandescent), halogen or other type of lighting.

The simulation may be performed on the fly, with lighting data values output from the simulator 100 to the light 102 in near-real time, or the simulation may be performed in advance and the lighting data values output for storage and later use to enable quick reproduction on set or location.

The lighting control system can reduce the number of devices required to provide lighting effects, especially where the lighting effect simulator is integrated in a light. This can significantly reduce equipment costs and time required to set up equipment. The system is also more portable allowing power from its on internal power source or battery instead of requiring an external power generator or mains powered solution. The lighting control system can be used for studio and location filming lighting systems, and more generally for videography, broadcast and/or cinematography.

A non-exhaustive list of example effects that may be produced by the system are as follows:

- Strobe - The strobe range in one example is from 1hz up to 4hz. The last used strobe parameters are stored in non-volatile memory (which applies to any effect described herein). A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter cameras.
- Lightning – this effect simulates lightning in a random manner, but a user may control the speed at which the lighting bursts re-occur. This effect is most realistic if the brightness is set to 100% and colour temperature is set at 6000K. A user may rotate a knob on the device to adjust the 'duty cycle' (flash duration) to eliminate issues with rolling shutter

SUBSTITUTE SPECIFICATION

-18-

cameras. The duration of the lightning flashes in one example is 20ms. The lightning strikes in one example come in bursts of between 2 and 8 random length pulses.

- Throb - Throb is a regular smoothly pulsing light
- Weld - this effect replicates a welding arc.
- Colour cycle – This is a regular smoothly pulsing light which fades between the tungsten and blue LEDs
- Fire – this effect replicates a fire with ‘dancing flames’ as is described in more detail below.
- Police – This effect is an emulation of an emergency services light, and may be most realistic in blue light.
- Television – This effect is an emulation of someone watching TV.

It should be appreciated that due to the nature of the light 102, the effects may be customised by a user, for example, the frequency/speed, peak/minimum brightness or colour / colour temperature may be dynamically changed, and/or made to vary over time in a customised manner. Such user input simulation parameters may be stored in memory 220 and recalled from the memory 220 at a later time. The effects may be triggered on cue (for example from a director) by sending a signal over a wired remote trigger or wireless device.

It should also be appreciated that multiple effects may be emulated simultaneously, for example, fire and lightning may be present simultaneously using a single lighting unit.

An example of a simulation for producing a fire effect is now described in more detail.

Fire is simulated as a series of ‘sparks’. Each spark has the following random parameters:

SUBSTITUTE SPECIFICATION

-19-

- ◆ **Interval:** New sparks are generated at an interval which varies randomly between a defined maximum and minimum interval.
- ◆ **Peak:** The peak luminance of each spark varies randomly between a defined minimum and maximum.
- ◆ **Ramp-up time:** The luminance of each spark ramps up to the peak at a randomly generated rate.
- ◆ **Fade-down time:** The fade from the peak is linked to the ramp-up time but is much slower – simulating the gradual decline in luminance of a burning ember.

If the interval is short with respect to the ramp-up and fade-down time, then sparks can overlap in time – in which case the brightest spark determines the lamp luminance.

The lighting effect simulator typically cycles round a loop calculating new lamp brightness and colour values. Alternatively the calculation can be triggered by an interrupt generated by a timer. The calculation is typically performed every 250µs.

The duration of each spark can be controlled by choosing whether or not to perform a new brightness calculation based on the value of a counter which is decremented every time an interrupt occurs. When the counter reaches zero it is either reset to its previous start value or, for a new spark, a new count start value is randomly generated. In this way each spark has a different speed, duration and peak – simulating the look of a real flame.

Generating the light output with the simulation provides a greater level of user adjustment and control than that produced by simply sampling the intensity of a real flame and replaying it at different speeds.

SUBSTITUTE SPECIFICATION

-20-

An example sequence of instructions for the simulation is as follows:

At the end of a spark up and down period:

- Reset duration for next spark to between 2.5s to 5s
- Generate new brightness targets for the next spark between 12.5% and 100% of current maximum brightness setting.
- Offset the random brightness targets by the requested brightness floor value
- Set the new peak brightness target for the new spark
- Ensure the new targets are greater than the existing faded brightness value to prevent downward jumps
- Set the fade direction to UP

Start new animation frame:

- Calculate brightness fade step sizes:
 - Fade up fast, progressively larger fade step sizes
 - Change fade direction at peak
 - Fade down slow, progressively smaller fade step sizes
- Set the frame rate for the new spark to a random value
 - prevent the curtailment of a long fade by a new short pulse: if the faded brightness is still > 25% of max then don't allow new FramePeriod to be less than old.

Figure 7 shows an example of the brightness varying over time produced according to a simulation as described above. Two peaks can be seen, one reaching 100% intensity and the other reaching 91% intensity. The first peak fades up from 10% to 100% in 0.85 seconds, and back down to 56% in 0.75 seconds. The second peak fades up from 56% to 91% in 0.33 seconds, and back down to 60% in 1.07 seconds. The fade up starts shallower and becomes steeper as it progresses. The fade down starts steep and becomes shallower

SUBSTITUTE SPECIFICATION

-21-

as it progresses. A toggle switch is also shown which toggles between 'Colour Swing Blue' and 'Monochrome'. Colour Swing Blue represents modifying the colour of peaks in brightness so as to replicate the increased temperature of sparks in a fire, Monochrome may be used when (for example) filming in black and white, or when altering colour of the effect may have deleterious effects on other elements of the scene (for example, rendering text difficult to read).

An example of a simulation for producing a lightning effect is now described in more detail. Lightning is simulated as a sequence of 'bursts' or groups of flashes. The number of flashes in each burst, the delay between bursts, the delay between each flash within the burst, and the amplitude of each flash are all set randomly within certain boundaries. The minimum 'on' time period of each flash can be set by the user to ensure full illumination of the camera frame. The lamp can also be set into a mode where a burst of flashes is triggered by the push of a button. In this way the effect can be triggered on demand by the user.

An example sequence of instructions for the simulation of lightning, with a series of bursts of flashes, is as follows:

At the end of a burst of flashes recalculate the parameters for the next burst:

- Reset the number of flashes in a burst to a random number between 2 and 10
- Reset the period to next burst to a random number between 2.5 and 5s.

Calculate parameters for each flash in a burst of flashes:

- Randomly modulate brightness of each flash slightly
- Reset the time to next flash to a random number between 8ms and 220ms

SUBSTITUTE SPECIFICATION

-22-

- Reset the 'on' flash duration to a random number between 8ms and 120ms
 - ensure a minimum off-period is maintained between flashes
- For the final flash set the duration to a random number between 10ms and 113ms

The lighting system, lighting effect simulator, lighting controller, lighting device, computing device, and/or computer program product may have one or more of the following features:

- built-in capability to generate a range of cinematic special effects by modulating the colour and brightness of the light output.
- the parameters of the effects can be controlled via a simple user interface on the lamp itself.
- the parameters of the effects can be controlled remotely via WiFi or DMX from a smart phone or tablet.
- networked with other lights to produce a synchronised large area special effect.
- minimum light pulse width can be adjusted to suit the shutter speed or frame rate of the user's camera to ensure even illumination across the frame.

Various other modifications will be apparent to those skilled in the art. It will be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention. For example, it should be appreciated that the effect simulator 100 or the computing device 130 may be separate from any light 102, and connectable to lights 102, by either a wired or wireless connection.

The lighting effect simulator 100 may be provided by way of a suitably adapted computing device 120 or 130 such as a PC, tablet or smart phone, with suitable

SUBSTITUTE SPECIFICATION

-23-

software for user input of simulation parameters. The computing device 120 or 130 may be a suitably adapted light controller device with suitable controls for user input of simulation parameters

Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801 7590 12/18/2019 MARTIN D. MOYNIHAN d/b/a PRTSI, INC. P.O. BOX 16446 ARLINGTON, VA 22215			EXAMINER PHAM, THAI N	
			ART UNIT 2844	PAPER NUMBER
			NOTIFICATION DATE 12/18/2019	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):

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Application No. : 15481460
Applicant : Gammons
Filing Date : 04/07/2017
Date Mailed : 12/18/2019

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

*A copy of this notice MUST be returned with the reply. Please address response to
"Mail Stop Issue Fee, Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450".*

/Marsha Palmer-Lee/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 15481460

IDENTIFICATION OF SPECIFICATION/DRAWING INCONSISTENCIES

- ☒ On Page 2 (SPEC. 09/07/2018) of the specification there is a brief description of FIG. 8, but the drawings filed 07/01/2019 do not include a drawing with that designation. Applicant must respond either by supplying the omitted drawing or by amending the specification to remove all references to that drawing.
- ☐ The drawings filed include FIG. , but the specification's brief description of the drawings does not describe a drawing with that designation. Applicant must respond either by amending the specification to add a brief description of that drawing or by correcting the drawings to remove the drawing in question.
- ☐ In the utility application, drawings are present in the application and are referred to in the detailed description of the invention, but the specification does not contain a brief description of the several views as required by 37 CFR 1.74 and 37 CFR 1.77(b)(9).
- ☐ The design application does not contain a description of the figure or figures of the drawing as required by 37 CFR 1.153(a) and 37 CFR 1.154(b)(4).
- ☐ In the plant application, the specification does not contain a brief description of the drawing as required by 37 CFR 1.163(c)(8).
- ☐ Page of the specification refers to FIG. , but no drawing with that designation is described in the brief description of the drawings and no drawing with that designation is present in the application. Applicant must respond either by amending the specification to remove all references to that drawing, or by supplying that drawing and amending the specification to add a brief description of it.
- ☐ In the reissue application, FIG. , is labeled as "New" but is not described in the reissue specification's brief description of the drawings. Applicant must respond by amending the reissue specification's brief description of the drawings to add a brief description of the new drawing.
- ☐ OTHER:
- ☐ COMMENTS:

Electronic Acknowledgement Receipt	
EFS ID:	38271944
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
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Attorney Docket Number:	69726
Receipt Date:	13-JAN-2020
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Application Type:	Utility under 35 USC 111(a)

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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	69726ResponsetoNoticetofileC orrectedApplicationPapersof18 Dec2019.pdf	20874 7a8658bd470f91532eef24e296a30f84316 c46d	no	1
Warnings:					

Information:					
2	Specification	69726AnnotatedSpecificationfiledinResponsetoNoticetoFileCorrectedApplicationPapersof18Dec2019.pdf	109677	no	21
			2d1932e4c49e2099694c291550ccb9b1353e5724		
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3	Specification	69726SubstituteSpecificationfiledinResponsetoNoticetoFileCorrectedApplicationPapersof18Dec2019.pdf	109783	no	23
			2572923c3f5eae4c0af6d344fb5976d0c5ea11e3		
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	69726NoticetoFileCorrectedApplicationPapersAfterAllowancedated18Dec2019.pdf	285043	no	3
			0e4f37b3e0272dd9aaee71acd09eafe22ae6ee1f		
Warnings:					
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Total Files Size (in bytes):			525377		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

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

Request for Continued Examination (RCE) Transmittal Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	15/481,460
	Filing Date	April 7, 2017
	First Named Inventor	Roderick Allen GAMMONS
	Art Unit	2844
	Examiner Name	Thai N. PHAM
	Attorney Docket Number	69726

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☐ Amendment/Reply
- iii. ☒ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 501407.
- a. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	/Martin D. Moynihan/	Date	January 14, 2020
Name (Print/Type)	Martin D. Moynihan	Registration No.	40338

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Signature	
Name (Print/Type)	Date

This collection of information is required by 37 CFR 1.114. 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: Mail Stop RCE, 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 Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Total in USD (\$)				950

Electronic Acknowledgement Receipt	
EFS ID:	38284727
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	14-JAN-2020
Filing Date:	07-APR-2017
Time Stamp:	01:21:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$950
RAM confirmation Number	E20201D222067205
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	69726ResponsetoNoticeofAllowanceof24Oct2019.pdf	18560	no	1
			bb5ca342763cdc3ec56d36352aeb820992c2186b		
Warnings:					
Information:					
2	Request for Corrected Filing Receipt	69726RCetoWithdrawAllowancefiledon13Jan2020.pdf	154720	no	1
			e4616b880560ec953d9faefc9a885252db24d6c		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30302	no	2
			d65cf8b5b193d445a71b13094d33ef4902c0482f		
Warnings:					
Information:					
Total Files Size (in bytes):			203582		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	
	§	Attorney Docket: 69726
Examiner: Thai N. PHAM	§	

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE OF ALLOWANCE

Sir:

This is a response to the Notice of Allowance dated October 24, 2019 for which payment is due on or before January 24, 2020.

Applicant hereby submits a Request for Continued Examination (RCE). Applicant will soon submit a Supplemental Information Disclosure Statement (IDS) and copies of the references cited therein.

The allowance of claims 75-88 and 90-94 and a new Notice of Allowance after consideration of the references cited in the Supplemental Information Disclosure Statement is respectfully requested.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: January 14, 2020

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

Request for Continued Examination (RCE) Transmittal Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	15/481,460
	Filing Date	April 7, 2017
	First Named Inventor	Roderick Allen GAMMONS
	Art Unit	2844
	Examiner Name	Thai N. PHAM
	Attorney Docket Number	69726

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☐ Amendment/Reply
- iii. ☒ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 501407.
- a. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)
- d. ☐ Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	/Martin D. Moynihan/	Date	January 14, 2020
Name (Print/Type)	Martin D. Moynihan	Registration No.	40338

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.	
Signature	
Name (Print/Type)	Date

This collection of information is required by 37 CFR 1.114. 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: Mail Stop RCE, 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:	38284745
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	14-JAN-2020
Filing Date:	07-APR-2017
Time Stamp:	01:39:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	69726RCEtoWithdrawAllowanc efiledon13Jan2020.pdf	154720	no	1
			e4616b880560ec953d9faecfc9a885252db2 4d6c		
Warnings:					

This is not a USPTO supplied RCE SB30 form.

Information:

Total Files Size (in bytes):

154720

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.

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

[illegible]

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

6 Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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

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

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	15/481,460		
		Filing Date	April 07, 2017		
		First Named Inventor	GAMMONS Roderick Allen et al		
		Group Art Unit	2844		
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	1	Third Party Observation Dated 20 September 2019 From the European Patent Office Re. Application No. EP 20170165609. (2 Pages)	
	2	Astera "ARC2 - Radio Frequency Remote Controller: User Manual", Astera LED Technology, Version 3.2.5, P.1-23, 06 July 2010.	
	3	Astera "ARC2-RF-Remote Controller - RC2-RF Radio Frequency Remote Controller Datasheet", Astera LED Technology, Version 1.1, P.1-27, November 2009.	
	4	Astera "AX10 Spotmax™ User Manual", Astera LED Technology, P.1-37, 07 May 2015.	
	5	Astera "CRM Wireless DMX for LumenRadio", Astera LED Technology, Wireless Event Lighting, Datasheet, P.1-12, 2015.	
	6	Astera "DMX Ethernet Gateway (AC4)", Astera LED Technology, User Manual, Version 4.0.10, P.1-20, 18 September 2014.	
	7	Astera "Wireless DMX Receiver/Transmitter (ART3)", Astera LED-Technology, Bedienungsanleitung [User Manual], Version 3.2.20, P.1-21, 23 October 2010.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.

Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF [CineSFX]	§	Group Art Unit: 2844
	§	
Examiner: PHAM Thai N.	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☒ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☐

☒ No Fee is Due.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 10 January 2020

Electronic Acknowledgement Receipt	
EFS ID:	38284900
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Darrell Hollis
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	14-JAN-2020
Filing Date:	07-APR-2017
Time Stamp:	04:26:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
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)	_form1449.pdf	44952 fd9834be70eee20b0dd9929e0d6b65de78a626e21	no	2
Warnings:					

Information:					
This is not an USPTO supplied IDS fillable form					
2	Transmittal Letter	_USPTOltr.pdf	23800	no	3
			af03ac5ae43167a98881b026d81a7744db85fed1		
Warnings:					
Information:					
3	Non Patent Literature	1-332228.pdf	82361	no	2
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Warnings:					
Information:					
4	Non Patent Literature	2-332232.pdf	2063857	no	23
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Warnings:					
Information:					
5	Non Patent Literature	3-332236.pdf	588789	no	27
			d2aee93a7234e955a5aa29f127e045550cc1e04		
Warnings:					
Information:					
6	Non Patent Literature	4-332233.pdf	4569585	no	37
			9e1c996715b14ce05bec811be5dbd6eb69910816		
Warnings:					
Information:					
7	Non Patent Literature	5-332229S.pdf	17907891	no	12
			51d549b3e280e0916cbc3e3e9f7925a3b8d4005b		
Warnings:					
Information:					
8	Non Patent Literature	6-332231.pdf	705153	no	20
			23c5ff895be616a9cf462a6a9bae2304fbcd3a87		
Warnings:					
Information:					

9	Non Patent Literature	7-332235.pdf	673937 f3613901003b60f1ac859a8b800763fd5375aeb	no	21
Warnings:					
Information:					
Total Files Size (in bytes):			26660325		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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

67801 7590 01/29/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER

PHAM, THAI N

ART UNIT PAPER NUMBER

2844

DATE MAILED: 01/29/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	04/29/2020

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

Page 1 of 3

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

67801 7590 01/29/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	04/29/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, THAI N	2844	315-297000

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 03-09 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,

(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.

1 _____
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- ☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801	7590	01/29/2020	EXAMINER	
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.			PHAM, THAI N	
P.O. BOX 16446			ART UNIT	
ARLINGTON, VA 22215			PAPER NUMBER	

2844

DATE MAILED: 01/29/2020

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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 30 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. 15/481,460	Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM	Art Unit 2844	AIA (FITF) Status Yes

-- 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 RCE submitted on 01/14/2020.
☐ 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 75-88 and 90-94. 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 _____.

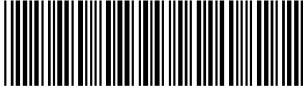
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

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)

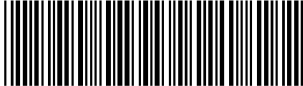
1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>01/14/2020</u> .	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/Thai Pham/ Primary Examiner, Art Unit 2844	
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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018	07/08/2019	10/12/2019	01/21/2020				
	1	-	-	-	-	-				
	2	-	-	-	-	-				
	3	-	-	-	-	-				
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	41	-	-	-	-	-				
	42	-	-	-	-	-				

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE									
Final	Original	03/05/2018	12/20/2018	07/08/2019	10/12/2019	01/21/2020					
	43	-	-	-	-	-					
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	90		✓	=	=	=					
	91		✓	=	=	=					
	92		✓	O	=	=					
	93		✓	=	=	=					
	94		✓	O	=	=					

Search Notes 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
Updated East search	12/20/2018	TP
Updated East search	07/08/2019	TP
Updated East search	10/12/2019	TP
Did the interference search	10/12/2019	TP
Looked at IDS	01/21/2020	TP

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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
H05B	37/02, 37/0272, 37/029, 37/0281, 33/08, 33/0842	10/12/2019	TP
F21V	23/00, 23/003	10/12/2019	TP

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Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC						
Symbol					Type	Version
F21V	/	23	/	003	F	2013-01-01
H05B	/	47	/	18	I	2020-01-01
H05B	/	47	/	19	I	2020-01-01
H05B	/	47	/	155	I	2020-01-01

CPC Combination Sets					
Symbol				Type	Version
/	/	/	/		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	21 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office

Part of Paper No.: 20200121

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F21V		23	00
H05B		37	02

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	21 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47																
CLAIMS																
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Original
-	1	-	13	-	25	-	37	-	49	-	61	-	73	11	85	
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-	11	-	23	-	35	-	47	-	59	-	71	9	83			
-	12	-	24	-	36	-	48	-	60	-	72	10	84			

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/Thai Pham/ Primary Examiner, Art Unit 2844 (Primary Examiner) _____ (Date) _____		21 January 2020 O.G. Print Claim(s) 1	O.G. Print Figure 2

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	15/481,460		
		Filing Date	April 07, 2017		
		First Named Inventor	GAMMONS Roderick Allen et al		
		Group Art Unit	2844		
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	1	Third Party Observation Dated 20 September 2019 From the European Patent Office Re. Application No. EP 20170165609. (2 Pages)			
	2	Astera "ARC2 - Radio Frequency Remote Controller: User Manual", Astera LED Technology, Version 3.2.5, P.1-23, 06 July 2010.			
	3	Astera "ARC2-RF-Remote Controller - RC2-RF Radio Frequency Remote Controller Datasheet", Astera LED Technology, Version 1.1, P.1-27, November 2009.			
	4	Astera "AX10 Spotmax™ User Manual", Astera LED Technology, P.1-37, 07 May 2015.			
	5	Astera "CRM Wireless DMX for LumenRadio", Astera LED Technology, Wireless Event Lighting, Datasheet, P.1-12, 2015.			
	6	Astera "DMX Ethernet Gateway (AC4)", Astera LED Technology, User Manual, Version 4.0.10, P.1-20, 18 September 2014.			
	7	Astera "Wireless DMX Receiver/Transmitter (ART3)", Astera LED Technology, Bedienungsanleitung [User Manual], Version 3.2.20, P.1-21, 23 October 2010.			
Examiner Signature		/Thai Pham/		Date Considered	01/21/2020

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.

Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TP/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"15481460"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:32
S2	4	((("GAMMONS") near3 ("Roderick") near3 ("Allen"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:33
S3	378	((("FRANCIS") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S4	3	((("GAMMONS") near3 ("Roderick") near3 ("Aaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S5	3	S2 and S3 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:34
S6	1	((("ROTOLIGHT") near3 ("LIMITED"))).AANM.	USPAT	OR	ON	2018/02/20 11:35
S8	22	("20070159347" "20080129226" "5307295" "5921659" "5924784" "7038399" "7353071").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:44
S9	3	("3787752").PN. OR ("7365649").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:46
S10	26	"2424525"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:48
S11	48723	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:23

EAST Search History

S12	4	"20080129226"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:24
S13	1	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 15:21
S14	5	"2005052751"	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/01 18:49
S15	9	light\$4 with control\$4 with simulat\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:39
S16	574	light\$4 with control\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S17	48822	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S18	37	S17 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
S19	181	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:50
S21	2	"15849793"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/14 15:59
S22	158	("20080084701" "20080259598" "20080278957" "20080304269"	US-PGPUB; USPAT;	OR	ON	2018/12/21 19:00

file:///C:/Users/tpam3/Documents/e-Red%20Folder/15481460/EASTSearchHistory.15481460_AccessibleVersion.htm[1/21/2020 12:31:04 PM]

		"20090184666" "5851063" "5912477" "7334917" "20070274080" "20080089053" "20080137347" "20080278952" "20090160363" "6563139" "7213940" "7358954" "5851063" "20060105482" "20070171145" "20070263393" "20070278934" "20080084685" "20080106907" "20090246895" "20100165001" "6132072" "7005679" "7144130" "20070280624" "20080278950" "20100079059" "20100103678" "20070139923" "20070223219" "20080106895" "20070170447" "20070236911" "20070278974" "20070279440" "20080084700" "20080112168" "20080112183" "20080310154" "20090108269" "20100102967" "20100254129" "5631190" "7564180" "7759854" "20070274063" "20070279903" "20080304261" "20100259182" "5803579" "7135664" "7213940" "20070137074" "20080088248" "20080112170" "20080130298" "20080309255" "20100102199" "4918487").PN.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
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S26	59607	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S27	203	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S29	1093	light\$4 with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:49

EAST Search History

S30	137	S26 and S29	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:50
S31	12	("20070159347" "20080129226" "5924784" "7038399").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:52
S32	9	light\$4 with effect with control\$4 with memory with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:56
S33	6	("20030176205" "20040110540" "20070146332" "20070173291" "7120471" "7266397").PN. OR ("8320887").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/10/15 10:59
S34	260	light\$4 same effect same control\$4 same memory same user same (calculat\$4 or comput\$4) same (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:00
S35	4	S26 and S34	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:01
S36	92	light\$4 with control\$4 with memory with stor\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:02
S37	3	S26 and S36	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:04
S38	74	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:06
S39	33	S26 and S38	US-PGPUB;	OR	ON	2019/10/15

EAST Search History

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:07
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S49	22	"3229463"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/21 12:20

1/ 21/ 2020 12:31:01 PM

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Request for Continued Examination (RCE) Transmittal Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	15/481,460
	Filing Date	April 7, 2017
	First Named Inventor	Roderick Allen GAMMONS
	Art Unit	2844
	Examiner Name	Thai N. PHAM
	Attorney Docket Number	69726

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☐ Amendment/Reply
- iii. ☒ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 501407.
- a. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)
- d. ☐ Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	/Martin D. Moynihan/	Date	March 5, 2020
Name (Print/Type)	Martin D. Moynihan	Registration No.	40338

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.	
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Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Total in USD (\$)				950

Electronic Acknowledgement Receipt	
EFS ID:	38774447
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	05-MAR-2020
Filing Date:	07-APR-2017
Time Stamp:	06:30:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$950
RAM confirmation Number	E202035731095572
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees) 37 CFR 1.20 (Post Issuance fees) 37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	69726ResponsetoNoticeofAllowanceof29Jan2020.pdf	18569	no	1
			5fe94c74c62e34c705fa4db89ba500f2d5ff3615		
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	69726RCEtoWithdrawAllowancefiledon5Mar2020.pdf	154197	no	1
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Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30302	no	2
			1e09862cd8c056f2f810f9bcb2ae35b8fe542f9e		
Warnings:					
Information:					
Total Files Size (in bytes):			203068		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	
	§	
	§	Attorney Docket: 69726
Examiner: Thai N. PHAM	§	

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE OF ALLOWANCE

Sir:

This is a response to the Notice of Allowance dated January 29, 2020 for which payment is due on or before April 29, 2020.

Applicant hereby submits a Request for Continued Examination (RCE). Applicant will soon submit a Supplemental Information Disclosure Statement (IDS) and copies of the references cited therein.

The allowance of claims 75-88 and 90-94 and a new Notice of Allowance after consideration of the references cited in the Supplemental Information Disclosure Statement is respectfully requested.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: March 5, 2020

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[illegible]

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/481,460
				Filing Date	April 07, 2017
				First Named Inventor	GAMMONS Roderick Allen et al
				Group Art Unit	2844
				Examiner Name	PHAM Thai N.
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	4	Third Party Observation for European Application Number EP20170165609 Dated 17 October 2019. (4 Pages)			
	5	Third Party Observation for European Application Number EP20170165609 Dated 28 June 2019. (2 Pages)			
	6	Third Party Observation for European Application Number EP20170165609 Dated 29 June 2019. (4 Pages)			
	7	Astera "ARC2 - Radio Frequency Remote Controller: User Manual", Astera LED Technology, Version 3.1.7, 21 P., 02 June 2010.			
	8	Daslight "Daslight Virtual Controller 2: User Manual", Daslight, P.1-45, 08 December 2017.			
	9	SGM "P-5 Wash Light User Manual", SGM, Version 2.43, P.1-63, 2015.			
	10	Showline "SL PAR 155 Zoom RGBW LED Luminaire: Installation & User's Manual", Showline, Vari-Lite, P.1-43, 10 December 2013.			
Examiner Signature					Date Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.
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² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF [CineSFX]	§	Group Art Unit: 2844
	§	
Examiner: PHAM Thai N.	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☒ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☐

☒ No Fee is Due.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 28 February 2020

Electronic Acknowledgement Receipt	
EFS ID:	38774510
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Darrell Hollis
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	05-MAR-2020
Filing Date:	07-APR-2017
Time Stamp:	07:16:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
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)	_form1449.pdf	45485 dd2faaea347b1e61cdff999c810b577e820de020	no	2
Warnings:					

Information:					
This is not an USPTO supplied IDS fillable form					
2	Transmittal Letter	_USPTOltr.pdf	23803	no	3
			3da3a074e23722b0506028e187d55bad6c b3f002		
Warnings:					
Information:					
3	Foreign Reference	3-335205.pdf	5190061	no	56
			710ea3ff692d22864e06717278fdd0d80aad 6e74		
Warnings:					
Information:					
4	Non Patent Literature	4-335215.pdf	390753	no	4
			a3a518392b103f30b585db503108c582859 c634a		
Warnings:					
Information:					
5	Non Patent Literature	5-335212.pdf	174349	no	2
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Warnings:					
Information:					
6	Non Patent Literature	6-335213.pdf	402026	no	4
			2e7e61b6aa01f85dcb9e020bf50e4df69acf c314		
Warnings:					
Information:					
7	Non Patent Literature	7-335219.pdf	2016098	no	21
			846f8a9b26a6a74c7ea3b2670c39d501847 66060		
Warnings:					
Information:					
8	Non Patent Literature	8-335208.pdf	6174158	no	45
			3d42a4e5aaf0036c1f21db40cd7e6916f475e a36		
Warnings:					
Information:					

9	Non Patent Literature	9-335210.pdf	4478295	no	64
			8865cde8c4ef0dbf88697311c7423a137f91c102		
Warnings:					
Information:					
10	Non Patent Literature	10-335204.pdf	2594293	no	46
			342324fafba5310a1346289f8ca36f1f05746a75		
Warnings:					
Information:					
Total Files Size (in bytes):				21489321	
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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

67801 7590 04/01/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER	
PHAM, THAI N	
ART UNIT	PAPER NUMBER
2844	

DATE MAILED: 04/01/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	07/01/2020

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

67801 7590 04/01/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	07/01/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, THAI N	2844	315-297000

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 03-09 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,

(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.

1 _____
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642
67801	7590	04/01/2020	EXAMINER	
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.			PHAM, THAI N	
P.O. BOX 16446			ART UNIT	
ARLINGTON, VA 22215			PAPER NUMBER	
			2844	

DATE MAILED: 04/01/2020

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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 30 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. 15/481,460	Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM	Art Unit 2844	AIA (FITF) Status Yes

-- 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 RCE submitted on 03/05/2020.
☐ 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 75-88 and 90-94. 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 _____.

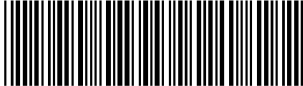
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

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)

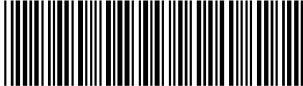
1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>03/05/2020</u> .	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/Thai Pham/ Primary Examiner, Art Unit 2844	
--	--

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018	07/08/2019	10/12/2019	01/21/2020	03/24/2020			
	1	-	-	-	-	-	-			
	2	-	-	-	-	-	-			
	3	-	-	-	-	-	-			
	4	-	-	-	-	-	-			
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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE								
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Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC						
Symbol					Type	Version
F21V	/	23	/	003	F	2013-01-01
H05B	/	47	/	18	I	2020-01-01
H05B	/	47	/	19	I	2020-01-01
H05B	/	47	/	155	I	2020-01-01

CPC Combination Sets					
Symbol				Type	Set
	/		/		

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/Thai Pham/ Primary Examiner, Art Unit 2844 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 2

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F21V		23	00
H05B		37	02

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	24 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
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/Thai Pham/ Primary Examiner, Art Unit 2844 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 2

U.S. Patent and Trademark Office

Part of Paper No.: 20200324

<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
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Updated East search	07/08/2019	TP
Updated East search	10/12/2019	TP
Did the interference search	10/12/2019	TP
Looked at IDS	01/21/2020	TP
Looked at IDS	03/24/2020	TP
Updated East search	03/24/2020	TP

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
H05B	37/02, 37/0272, 37/029, 37/0281, 33/08, 33/0842	10/12/2019	TP
F21V	23/00, 23/003	10/12/2019	TP

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PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	15/481,460		
		Filing Date	April 07, 2017		
		First Named Inventor	GAMMONS Roderick Allen et al		
		Group Art Unit	2844		
Examiner Name	PHAM Thai N.				
Sheet	2	Of	2	Attorney Docket Number	69726
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	4	Third Party Observation for European Application Number EP20170165609 Dated 17 October 2019. (4 Pages)			
	5	Third Party Observation for European Application Number EP20170165609 Dated 28 June 2019. (2 Pages)			
	6	Third Party Observation for European Application Number EP20170165609 Dated 29 June 2019. (4 Pages)			
	7	Astera "ARC2 - Radio Frequency Remote Controller: User Manual", Astera LED Technology, Version 3.1.7, 21 P., 02 June 2010.			
	8	Daslight "Daslight Virtual Controller 2: User Manual", Daslight, P.1-45, 08 December 2017.			
	9	SGM "P-5 Wash Light User Manual", SGM, Version 2.43, P.1-63, 2015.			
	10	Showline "SL PAR 155 Zoom RGBW LED Luminaire: Installation & User's Manual", Showline, Vari-Lite, P.1-43, 10 December 2013.			
Examiner Signature	/Thai Pham/			Date Considered	03/24/2020

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S3	378	((("FRANCIS") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
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S30	137	S26 and S29	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:50
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"5907742"	"5924784"	"5961201"
"6016038"	"6020825"	"6028694"
"6056420"	"6068383"	"6127783"
"6132072"	"6149283"	"6150771").PN.
OR ("6150774"	"6158882"	"6166496"
"6183086"	"6183104"	"6183108"
"6188181"	"6211626"	"6212213"
"6234645"	"6234648"	"6235648"
"6250774"	"6252254"	"6255670"
"6273589"	"6283612"	"6292901"
"6294800"	"6299329"	"6323832"
"6329764"	"6330111"	"6331915"
"6340868"	"6357889"	"6357893"
"6361186"	"6369525"	"6379022"
"6411046"	"6441558"	"6445139"
"6448550"	"6459919"	"6469322"
"6474837"	"6495964"	"6504301"
"6507159"	"6510995"	"6513949"
"6528954"	"6548967"	"6550952"
"6551282"	"6552495"	"6577080"
"6592238"	"6596977"	"6599000"
"6600175"	"6608453"	"6624597"
"6630691"	"6630801"	"6636003"
"6692136"	"6717376"	"6720745"
"6726350").PN.	OR ("7014336").URPN.	

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S40	18813	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT	OR	ON	2019/10/15 11:09
S41	9	light\$4 with effect with control\$4 with memory with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:10
S42	41	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:11
S43	16	S40 and S42	US-PGPUB; USPAT	OR	ON	2019/10/15 11:12
S44	61	light\$4 same effect same control\$4 same (user near5 input) same (calculat\$4 or comput\$4) same (memory or stor\$4) same (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:15
S45	1	S40 and S44	US-PGPUB; USPAT	OR	ON	2019/10/15 11:15
S46	12	light\$4 with effect with control\$4 with (user near5 input) with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:17
S47	117	(light\$4 and effect and control\$4 and memory and stor\$4 and user and input and interface and (calculat\$4 or comput\$4) and (vary\$4 or	US-PGPUB; USPAT	OR	ON	2019/10/15 11:19

EAST Search History

		adjust\$4 or tun\$4)).clm.					
--	--	----------------------------	--	--	--	--	--

3/25/2020 5:56:54 PM

C:\Users\tpham3\Documents\EAST\Workspaces\15481460.wsp

Bibliographic Data

Application No: 15/481,460

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged:

Examiner's Signature

Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/07/2017	315	2844	69726
RULE			

APPLICANTS

Rotolight Limited, London, UNITED KINGDOM

INVENTORS

Roderick Allen GAMMONS Staines Upon Thames, UNITED KINGDOM

Andrew FRANCIS Witham, UNITED KINGDOM

Roderick Aaron GAMMONS Winkfield, UNITED KINGDOM

Stefan Lange Shepperton, UNITED KINGDOM

CONTINUING DATA

This application has PRO of 62319809 04/08/2016

FOREIGN APPLICATIONS

UNITED KINGDOM 1606907.2 04/20/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

** SMALL ENTITY **

STATE OR COUNTRY

UNITED KINGDOM

ADDRESS

MARTIN D. MOYNIHAN d/b/a PRTSI, INC.

P.O. BOX 16446

ARLINGTON, VA 22215

UNITED STATES

FILING FEE RECEIVED

\$1,100

Request for Continued Examination (RCE) Transmittal Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	15/481,460
	Filing Date	April 7, 2017
	First Named Inventor	Roderick Allen GAMMONS
	Art Unit	2844
	Examiner Name	Thai N. PHAM
	Attorney Docket Number	69726

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted, if a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☐ Amendment/Reply
- ii. ☐ Affidavit(s)/ Declaration(s)
- iii. ☒ Information Disclosure Statement (IDS)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees**
- The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 50-1407.
- a. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)
- d. ☐ Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	/Martin D. Moynihan/	Date	June 30, 2020
Name (Print/Type)	Martin D. Moynihan	Registration No.	40338

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.	
Signature	
Name (Print/Type)	
Date	

This collection of information is required by 37 CFR 1.114. 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: Mail Stop RCE, 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 Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Total in USD (\$)				950

Electronic Acknowledgement Receipt	
EFS ID:	39866030
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	30-JUN-2020
Filing Date:	07-APR-2017
Time Stamp:	10:49:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$950
RAM confirmation Number	E20206TA49475820
Deposit Account	501407
Authorized User	Martin Moynihan
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees) 37 CFR 1.20 (Post Issuance fees) 37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	69726RespNoticeAllowance1A pr2020.pdf	15687	no	1
			e7931e76588a003281f8415625bb14e35ac 791d2		
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	69726RCEWithdrawAllowance. pdf	126114	no	1
			2f36fa128ec3f174e28c0691db75c10a124b c74d		
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30302	no	2
			ab004af16ce61fc5fef16f8982b49841c4ca7 ac7		
Warnings:					
Information:					
Total Files Size (in bytes):			172103		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of.:	§	
	§	
Roderick Allen GAMMONS et al.	§	
	§	Confirmation No.: 5642
Serial No.: 15/481,460	§	
	§	
Filed: April 7, 2017	§	Group Art Unit: 2844
	§	
For: LIGHTING SYSTEM AND	§	
CONTROL THEREOF	§	
	§	
Examiner: Thai N. PHAM	§	Attorney Docket: 69726
	§	

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE OF ALLOWANCE

Sir:

This is a response to the Notice of Allowance dated April 1, 2020 for which payment is due on or before July 1, 2020.

Applicant hereby submits a Request for Continued Examination (RCE). Applicant will soon submit a Supplemental Information Disclosure Statement (IDS) and copies of the references cited therein.

The allowance of claims 75-88 and 90-94 and a new Notice of Allowance after consideration of the references cited in the Supplemental Information Disclosure Statement is respectfully requested.

Respectfully submitted,

/Martin D. Moynihan/

Martin D. Moynihan
Registration No. 40338
Telephone: (703) 859-9634

Date: June 30, 2020

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

[illegible]

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered.

Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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

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

[illegible]

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional).

² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

6 Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	
	§	
GAMMONS Roderick Allen et al	§	
Serial No.: 15/481,460	§	Confirmation No.: 5642
Filed: April 07, 2017	§	
For: LIGHTING SYSTEM AND CONTROL THEREOF	§	Group Art Unit: 2844
Examiner: PHAM Thai N.	§	
	§	Attorney Docket: 69726
	§	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

We file herewith an Information Disclosure Statement to disclose to the Examiner copies of third party observations that have been filed in respect of the Applicant's corresponding pending UK Patent Application No. 1802585.8 and European Patent Application No. 17165609.3. We also file herewith a Declaration, signed by the CEO of the Applicant, Rotolight Limited, who is also co-inventor for this present US patent application.

The effective filing date (the priority date) of the present US patent application is April 8, 2016. Under 35 U.S.C. § 102(b)(1)(A), disclosures made 1 year or less before the effective filing date shall not be prior art if that disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor. As the Examiner will see, all of the alleged disclosures referenced in the third party observations are alleged to have been made after April 8, 2015 and made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly therefrom. On this basis, these alleged disclosures are not prior art and therefore are not material to the patentability of this present US patent application. Nonetheless, because these third party observations have been filed in respect of related non-US patent applications,

these third party observations are being disclosed to the Examiner out of an abundance of caution to ensure fulfilment of the duty of disclosure, candor, and good faith to the Office.

We look forward to receiving a further Notice of Allowance.

Enclosed is a PTO Form 1449 which lists citations which may be material to the patentability and examination of the above identified application. Also enclosed are copies of the references cited, other than U.S. Patents and U.S. patent applications. These are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56, 37 CFR 1.97 and 37 CFR 1.98. The Examiner is requested to make these citations of official record in this application.

The undersigned states:

A. NO CERTIFICATION OR FEE DUE

☒ This Information disclosure Statement is being filed within three months of filing a national application or entry of a national phase of an international application; or before the mailing date of a first Office action on the merits of the above-identified application. Accordingly, no fee or Certification is believed due. However, if a fee is due, authorization to deduct such fee from the Deposit Account 501407 of the undersigned is hereby provided.

B. CERTIFICATION

☐ 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; 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.

C. FEE

☐

☒ No Fee is Due.

This Information Disclosure Statement under 37 CFR 1.56 is not to be construed as a representation that a search has been made, that additional matter which is material to the examination of this application does not exist, or that any one or more of the citations listed constitutes prior art as defined by 35 U.S.C. 102.

It is respectfully requested that the Examiner consider the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and sign the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application. Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information.

FOR PATENT TERM ADJUSTMENT CALCULATION PURPOSES ONLY:

Unless indicated otherwise, to the best of our knowledge and procedures, each item of information contained in the information disclosure statement was first known no more than thirty days prior to the filing of the information disclosure statement, either by the inventor named in the application, Attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, the applicant, an assignee, or anyone to whom there is an obligation to assign the application.

Respectfully submitted,

/ Martin D. Moynihan /

Martin D. Moynihan
Registration No. 40338
Telephone: (703)859-9634

Date: 30 June 2020

Electronic Acknowledgement Receipt	
EFS ID:	39872845
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan/Darrell Hollis
Filer Authorized By:	Martin Dennis Moynihan
Attorney Docket Number:	69726
Receipt Date:	30-JUN-2020
Filing Date:	07-APR-2017
Time Stamp:	15:19:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
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)	_form1449.pdf	45823 ba74f495fcb27ff93ef78cc4bf335ffc0e0a7ab	no	2
Warnings:					

Information:					
This is not an USPTO supplied IDS fillable form					
2	Transmittal Letter	_USPTOltr.pdf	30198 2224d2a2b1810ad9f57b9c9523e7f369d31a65a4	no	3
Warnings:					
Information:					
3	Non Patent Literature	1-345109.pdf	274470 8131ba39a1d35d52ffda4c3f4f77f1f5ce7550cb1	no	3
Warnings:					
Information:					
4	Non Patent Literature	2-345111.pdf	5452296 e91997226953e0b3c4b232f48805681bb858d972	no	25
Warnings:					
Information:					
5	Non Patent Literature	3-345110.pdf	1610840 0fa54f0326bac4c8564dfb874b843372c234586e	no	26
Warnings:					
Information:					
Total Files Size (in bytes):			7413627		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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

67801 7590 07/28/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
c/o Purrfect Patents LLC
11213 Piedmont Drive
Fredericksburg, VA 22407

EXAMINER	
PHAM, THAI N	
ART UNIT	PAPER NUMBER
2844	

DATE MAILED: 07/28/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	10/28/2020

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

67801 7590 07/28/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
c/o Purrfect Patents LLC
11213 Piedmont Drive
Fredericksburg, VA 22407

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	10/28/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, THAI N	2844	315-297000

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 03-09 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,

(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.

1 _____
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

67801 7590 07/28/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
c/o Purrfect Patents LLC
11213 Piedmont Drive
Fredericksburg, VA 22407

EXAMINER

PHAM, THAI N

ART UNIT	PAPER NUMBER
----------	--------------

2844

DATE MAILED: 07/28/2020

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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 30 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. 15/481,460	Applicant(s) GAMMONS et al.	
	Examiner THAI N PHAM	Art Unit 2844	AIA (FITF) Status Yes

-- 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 RCE submitted on 06/30/2020.
☐ 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 75-88 and 90-94. 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 <u>06/30/2020</u> .	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. _____.	

/Thai Pham/ Primary Examiner, Art Unit 2844	
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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC - Searched*		
Symbol	Date	Examiner
H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003	3/5/2018	TP
Same as above	12/20/2018	TP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

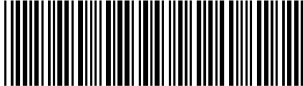
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<i>Search Notes</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

Search Notes		
Search Notes	Date	Examiner
CPC search, Text search, Inventor name search, Assignment data search, backward and forward search	3/5/2018	TP
Looked at IDS	3/5/2018	TP
Looked at PCT and ISA search report	3/5/2018	TP
Looked at IDS	12/20/2018	TP
Updated East search	12/20/2018	TP
Updated East search	07/08/2019	TP
Updated East search	10/12/2019	TP
Did the interference search	10/12/2019	TP
Looked at IDS	01/21/2020	TP
Looked at IDS	03/24/2020	TP
Updated East search	03/24/2020	TP
Looked at IDS	07/20/2020	TP
Updated East search	07/20/2020	TP

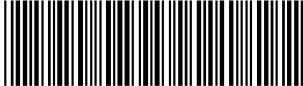
Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
H05B	37/02, 37/0272, 37/029, 37/0281, 33/08, 33/0842	10/12/2019	TP
F21V	23/00, 23/003	10/12/2019	TP

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<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018	07/08/2019	10/12/2019	01/21/2020	03/24/2020	07/20/2020		
	1	-	-	-	-	-	-	-		
	2	-	-	-	-	-	-	-		
	3	-	-	-	-	-	-	-		
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	40	-	-	-	-	-	-	-		
	41	-	-	-	-	-	-	-		
	42	-	-	-	-	-	-	-		

<i>Index of Claims</i> 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CLAIM		DATE								
Final	Original	03/05/2018	12/20/2018	07/08/2019	10/12/2019	01/21/2020	03/24/2020	07/20/2020		
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	44	-	-	-	-	-	-	-		
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	67	✓	-	-	-	-	-	-		
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	82		✓	=	=	=	=	=		
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	90		✓	=	=	=	=	=		
	91		✓	=	=	=	=	=		
	92		✓	O	=	=	=	=		
	93		✓	=	=	=	=	=		
	94		✓	O	=	=	=	=		

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

CPC						
Symbol					Type	Version
F21V	/	23	/	003	F	2013-01-01
H05B	/	47	/	18	I	2020-01-01
H05B	/	47	/	19	I	2020-01-01
H05B	/	47	/	155	I	2020-01-01

CPC Combination Sets					
Symbol				Type	Set
	/		/		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	20 July 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office

Part of Paper No.: 20200718

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F21V		23	00
H05B		37	02

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/Thai Pham/ Primary Examiner, Art Unit 2844	20 July 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Issue Classification 	Application/Control No. 15/481,460	Applicant(s)/Patent Under Reexamination GAMMONS et al.
	Examiner THAI N PHAM	Art Unit 2844

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
-	1	-	13	-	25	-	37	-	49	-	61	-	73	11	85
-	2	-	14	-	26	-	38	-	50	-	62	-	74	12	86
-	3	-	15	-	27	-	39	-	51	-	63	1	75	13	87
-	4	-	16	-	28	-	40	-	52	-	64	2	76	14	88
-	5	-	17	-	29	-	41	-	53	-	65	3	77	-	89
-	6	-	18	-	30	-	42	-	54	-	66	4	78	15	90
-	7	-	19	-	31	-	43	-	55	-	67	5	79	16	91
-	8	-	20	-	32	-	44	-	56	-	68	6	80	17	92
-	9	-	21	-	33	-	45	-	57	-	69	7	81	18	93
-	10	-	22	-	34	-	46	-	58	-	70	8	82	19	94
-	11	-	23	-	35	-	47	-	59	-	71	9	83		
-	12	-	24	-	36	-	48	-	60	-	72	10	84		

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/Thai Pham/ Primary Examiner, Art Unit 2844 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 2

U.S. Patent and Trademark Office

Part of Paper No.: 20200718

Bibliographic Data

Application No: 15/481,460

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /Thai Pham/

Examiner's Signature

Initials

Title:

LIGHTING SYSTEM AND CONTROL THEREOF

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/07/2017	315	2844	69726
RULE			

APPLICANTS

Rotolight Limited, London, UNITED KINGDOM

INVENTORS

Roderick Allen GAMMONS, Staines Upon Thames, UNITED KINGDOM

Andrew FRANCIS, Witham, UNITED KINGDOM

Roderick Aaron GAMMONS, Winkfield, UNITED KINGDOM

Stefan Lange, Shepperton, UNITED KINGDOM

CONTINUING DATA

This application has PRO of 62319809 04/08/2016

FOREIGN APPLICATIONS

UNITED KINGDOM 1606907.2 04/20/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

** SMALL ENTITY **

STATE OR COUNTRY

UNITED KINGDOM

ADDRESS

MARTIN D. MOYNIHAN d/b/a PRTSI, INC.

c/o Purrfect Patents LLC

11213 Piedmont Drive

Fredericksburg, VA 22407

UNITED STATES

FILING FEE RECEIVED

\$1,100

15/481,460 - GAU: 2844

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Page 480 of 495

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"15481460"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:32
S2	4	((("GAMMONS") near3 ("Roderick") near3 ("Allen"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:33
S3	378	((("FRANCIS") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S4	3	((("GAMMONS") near3 ("Roderick") near3 ("Aaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:34
S5	3	S2 and S3 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:34
S6	1	((("ROTOLIGHT") near3 ("LIMITED"))).AANM.	USPAT	OR	ON	2018/02/20 11:35
S8	22	("20070159347" "20080129226" "5307295" "5921659" "5924784" "7038399" "7353071").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:44
S9	3	("3787752").PN. OR ("7365649").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 11:46
S10	26	"2424525"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 11:48

S11	48,723	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:23
S12	4	"20080129226"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 12:24
S13	1	"15820469"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/20 15:21
S14	5	"2005052751"	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/01 18:49
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S16	574	light\$4 with control\$4 with (calculat\$4 or comput\$4) with random	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/03/02 17:41
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S18	37	S17 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2018/03/02 17:41

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S22	158	("20080084701" "20080259598" "20080278957" "20080304269" "20090184666" "5851063" "5912477" "7334917" "20070274080" "20080089053" "20080137347" "20080278952" "20090160363" "6563139" "7213940" "7358954" "5851063" "20060105482" "20070171145" "20070263393" "20070278934" "20080084685" "20080106907" "20090246895" "20100165001" "6132072" "7005679" "7144130" "20070280624" "20080278950" "20100079059" "20100103678" "20070139923" "20070223219" "20080106895" "20070170447" "20070236911" "20070278974" "20070279440" "20080084700" "20080112168" "20080112183" "20080310154" "20090108269" "20100102967" "20100254129" "5631190" "7564180" "7759854" "20070274063" "20070279903" "20080304261" "20100259182" "5803579" "7135664" "7213940" "20070137074" "20080088248" "20080112170" "20080130298" "20080309255" "20100102199" "4918487").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/12/21 19:00
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S26	59,607	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S27	203	light\$4 same control\$4 same simulat\$4 same (calculat\$4 or comput\$4) same random same (wire\$1less or wifi or zigbee) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:09
S29	1,093	light\$4 with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:49
S30	137	S26 and S29	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 10:50
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S32	9	light\$4 with effect with control\$4 with memory with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2019/10/15 10:56

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S35	4	S26 and S34	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:01
S36	92	light\$4 with control\$4 with memory with stor\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:02
S37	3	S26 and S36	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:04
S38	74	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/10/15 11:06
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S48	4	"20170165609"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/21 12:18
S49	22	"3229463"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/21 12:20
S51	6	(US-0044374-\$ US-20120044374-\$ US-7014336-\$).DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/03/25 17:49
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S54	0	"1802585.8"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/20 13:05

S55	14	("20040257007" "20070159347" "20080129226" "20140139130" "20170343197" "20180112862" "20180135842" "5307295" "5921659" "5924784" "7038399" "7353071" "7777427" "8253666").PN. OR ("10197257").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/20 13:11
S57	5	("20070159347" "20080129226" "20140139130" "5924784" "7038399").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/20 13:14

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S40	18,813	(H05B37/02 OR H05B37/0272 OR H05B37/029 OR H05B37/0281 OR H05B33/08 OR H05B33/0842 OR F21V23/00 OR F21V23/003).CPC.	US-PGPUB; USPAT	OR	ON	2019/10/15 11:09
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S42	41	light\$4 with effect with control\$4 with user with (calculat\$4 or comput\$4) with (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:11
S43	16	S40 and S42	US-PGPUB; USPAT	OR	ON	2019/10/15 11:12
S44	61	light\$4 same effect same control\$4 same (user near5 input) same (calculat\$4 or comput\$4) same (memory or stor\$4) same (vary\$4 or adjust\$4 or tun\$4)	US-PGPUB; USPAT	OR	ON	2019/10/15 11:15
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7/20/2020 1:15:45 PM
C:\Users\tpham3\Documents\EAST\Workspaces\15481460.wsp

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

67801 7590 07/28/2020
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
c/o Purrfect Patents LLC
11213 Piedmont Drive
Fredericksburg, VA 22407

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/481,460	04/07/2017	Roderick Allen GAMMONS	69726	5642

TITLE OF INVENTION: LIGHTING SYSTEM AND CONTROL THEREOF

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	10/28/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHAM, THAI N	2844	315-297000

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 03-09 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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Rotolight Limited

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

Iver Heath, United Kingdom

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

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. **50-1407**

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 /Martin D. Moynihan/

Date October 27, 2020

Typed or printed name Martin D. Moynihan

Registration No. 40338

Electronic Patent Application Fee Transmittal				
Application Number:		15481460		
Filing Date:		07-Apr-2017		
Title of Invention:		LIGHTING SYSTEM AND CONTROL THEREOF		
First Named Inventor/Applicant Name:		Roderick Allen GAMMONS		
Filer:		Martin Dennis Moynihan		
Attorney Docket Number:		69726		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt	
EFS ID:	40952685
Application Number:	15481460
International Application Number:	
Confirmation Number:	5642
Title of Invention:	LIGHTING SYSTEM AND CONTROL THEREOF
First Named Inventor/Applicant Name:	Roderick Allen GAMMONS
Customer Number:	67801
Filer:	Martin Dennis Moynihan
Filer Authorized By:	
Attorney Docket Number:	69726
Receipt Date:	27-OCT-2020
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37 CFR 1.19 (Document supply 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)	69726IssueFeeTransmittalSheetfromNoticeofAllowancedated28Jul2020.pdf	234993	no	1
			93bbe2e95151ca8d1ed01ab50ac72c31b5baaaa		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30039	no	2
			d9e9f6c389a46951e19fefb1f039c4543eeca		
Warnings:					
Information:					
Total Files Size (in bytes):			265032		
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15/481,460	11/24/2020	10845044	69726	5642

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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 0 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.

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