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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40617.0493USC5
		Application Number	
Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		
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.)
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Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Steven	J.	Altamura			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
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Address 1	14 Elba Place					
Address 2						
City	Scarsdale	State/Province	NY			
Postal Code	10583	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add						

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☐ An Address is being provided for the correspondence information of this application.	
Customer Number	52835
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Application Information:

Title of the Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		
Attorney Docket Number	40617.0493USC5	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	16	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40617.0493USC5
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Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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.

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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.

Please Select One:	☒ Customer Number	US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	52835		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim 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.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16/693552	2019-11-25

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		Application Number			
Title of Invention		RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT			

Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16/693552	Continuation of	15/899264	2018-02-19	10492282	2019-11-26
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/899264	Continuation of	14/840705	2015-08-31	9900968	2018-02-20
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
14/840705	Continuation of	14/052124	2013-10-11		
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
14/052124	Continuation of	12/947488	2010-11-16		
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12/947488	Division of	11/962964	2007-12-21	7851981	2010-12-14
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
11/962964	Claims benefit of provisional	60/876868	2006-12-22		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					

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This section allows for the applicant to claim priority to a foreign application. 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. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, 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 specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)

0003

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40617.0493USC5
		Application Number	
Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

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1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is 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 State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40617.0493USC5
		Application Number	
Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove
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. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary 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 Applicant is an Organization check here. ☒		
Organization Name	Seasonal Specialties, LLC	
Mailing Address Information For Applicant:		
Address 1	11455 Valley View Road	
Address 2		
City	Eden Prairie	State/Province
Country	US	Postal Code
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

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Assignee	1			
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See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael Lasky/		Date (YYYY-MM-DD)	2021-08-12
First Name	Michael B.	Last Name	Lasky	Registration Number
				29555
Additional Signature may be generated within this form by selecting the Add button. Add				

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40617.0493USC5
		Application Number	
Title of Invention	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

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.**

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- 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)).
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- 8 A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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Fig. 1

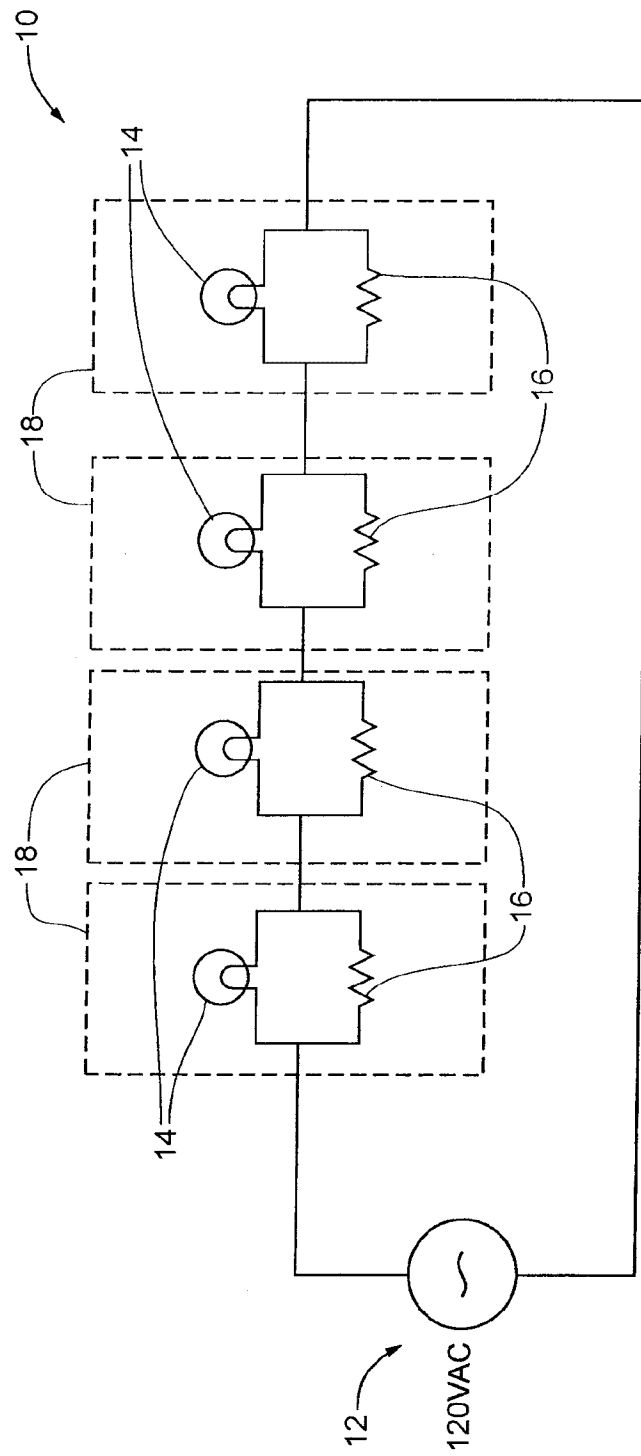


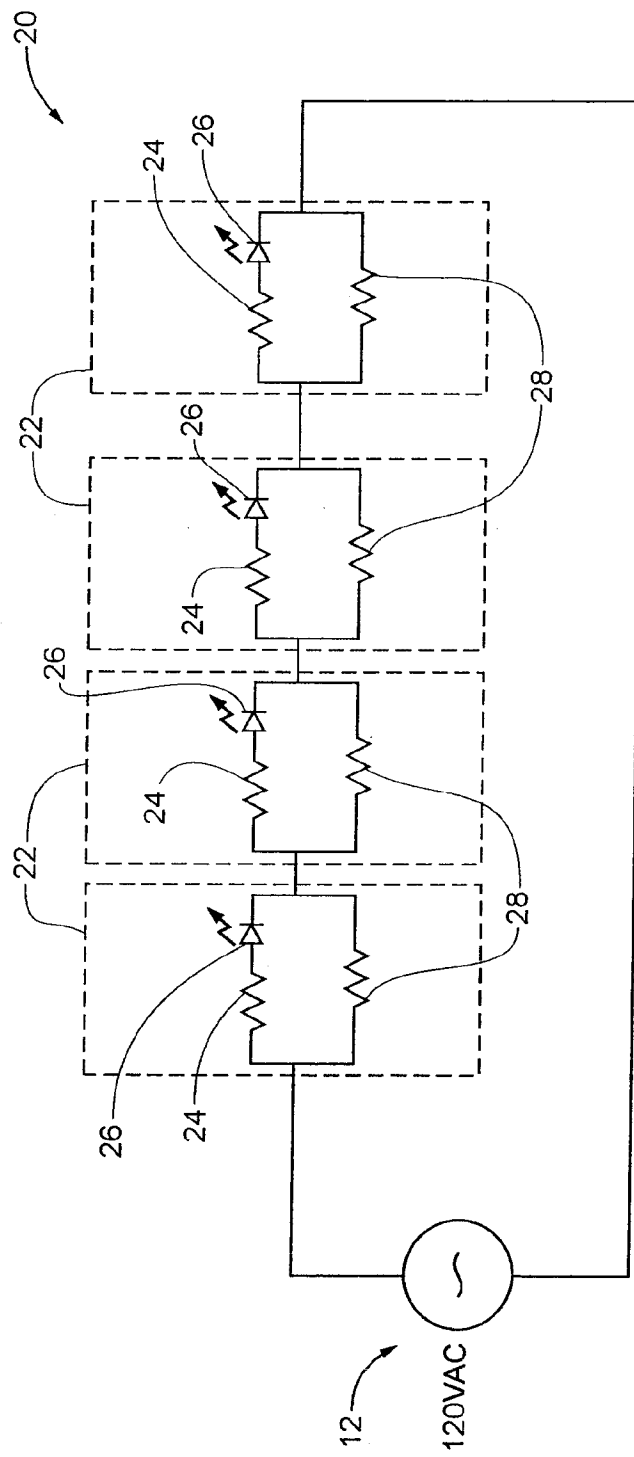
Fig. 2

Fig. 2a

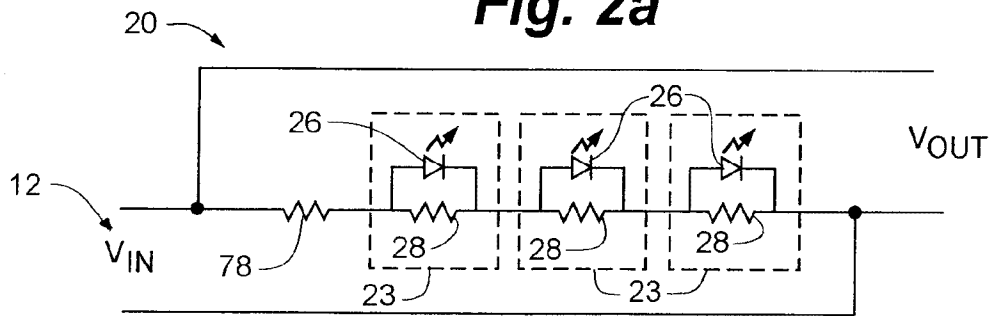
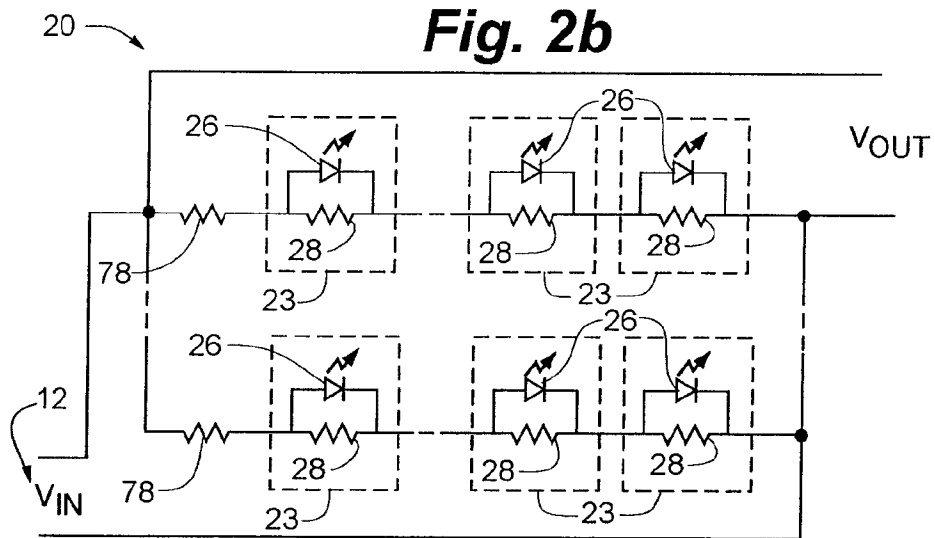


Fig. 2b



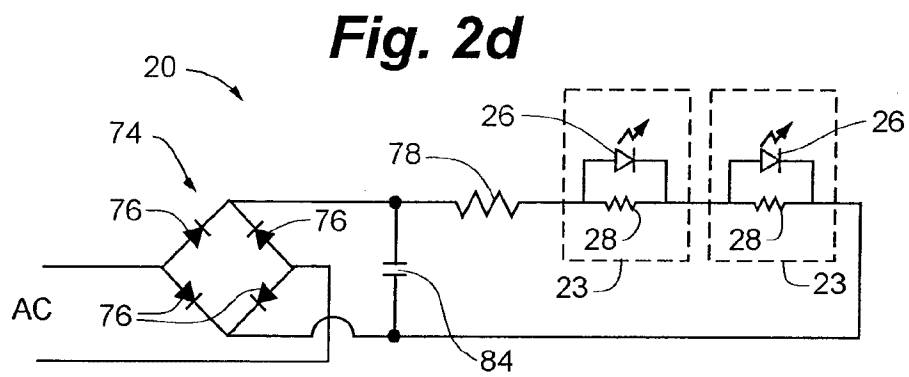
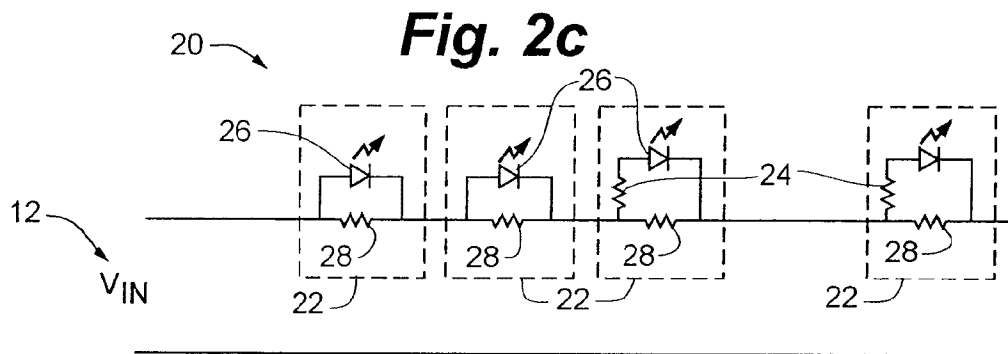


Fig. 3

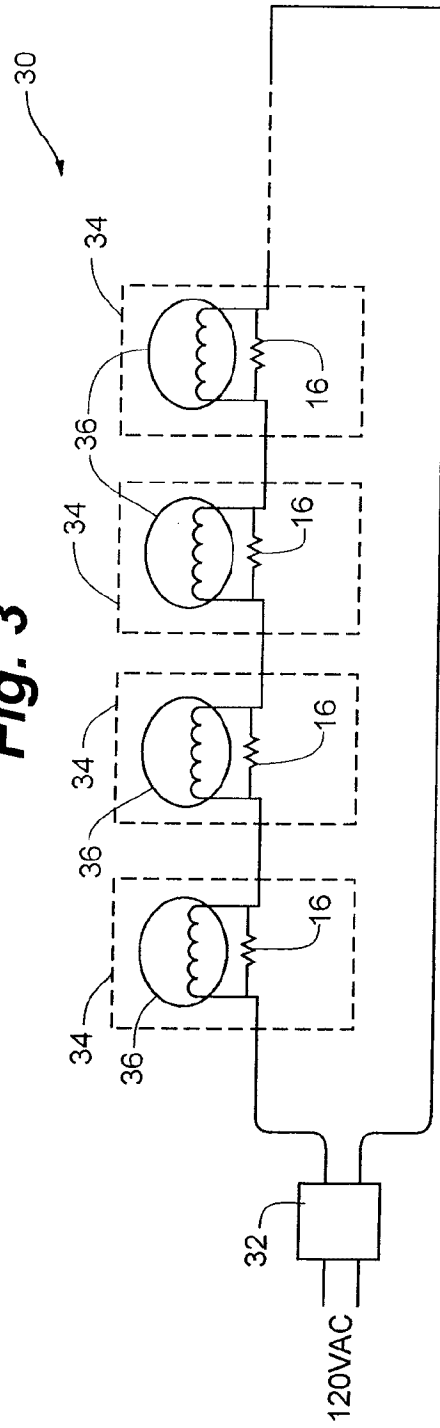


Fig. 4a

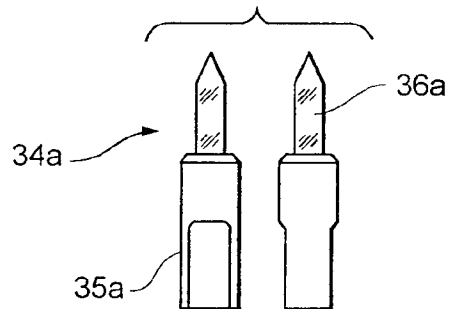


Fig. 4b

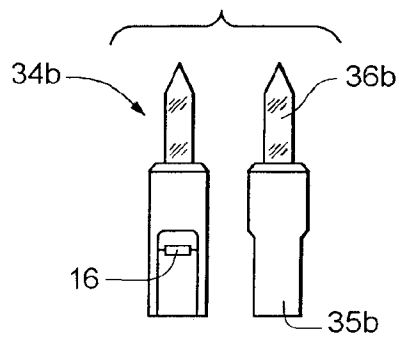


Fig. 4c

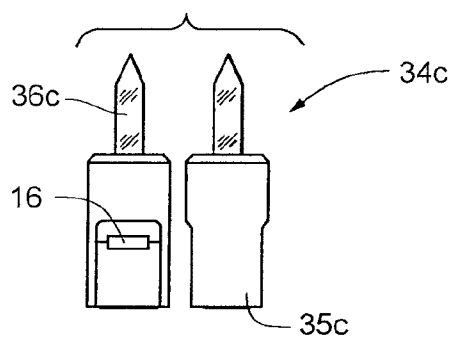
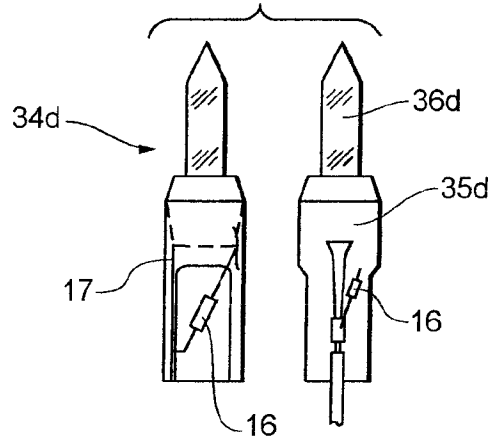


Fig. 4d



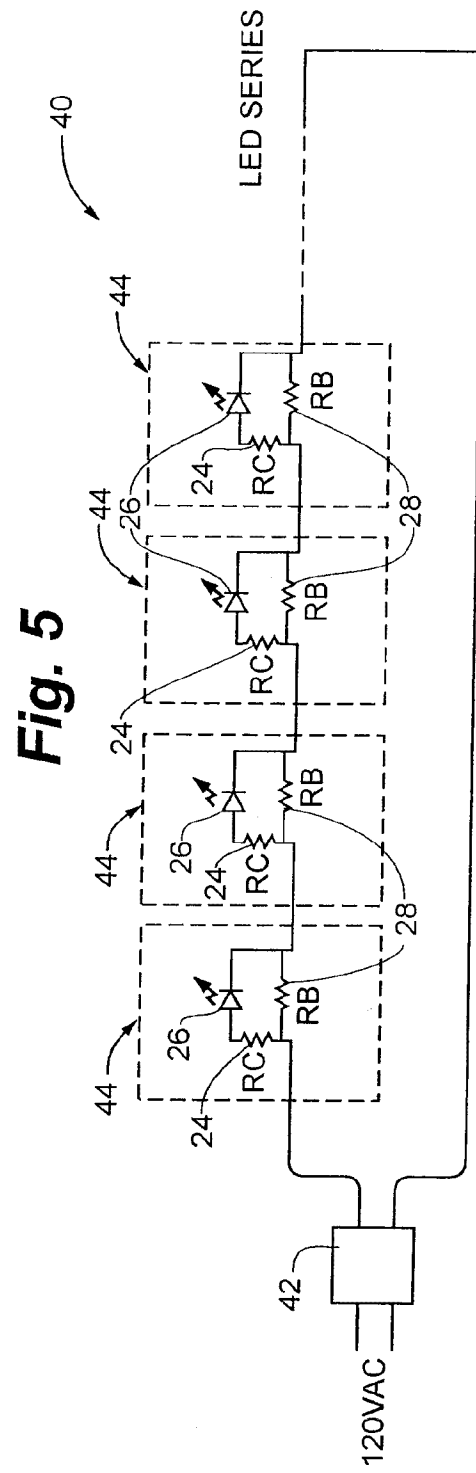


Fig. 6

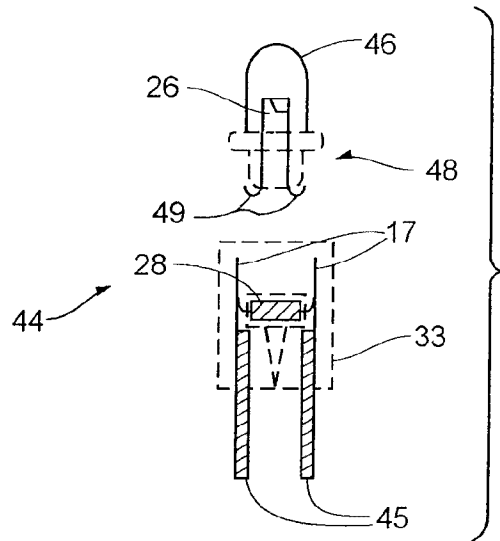
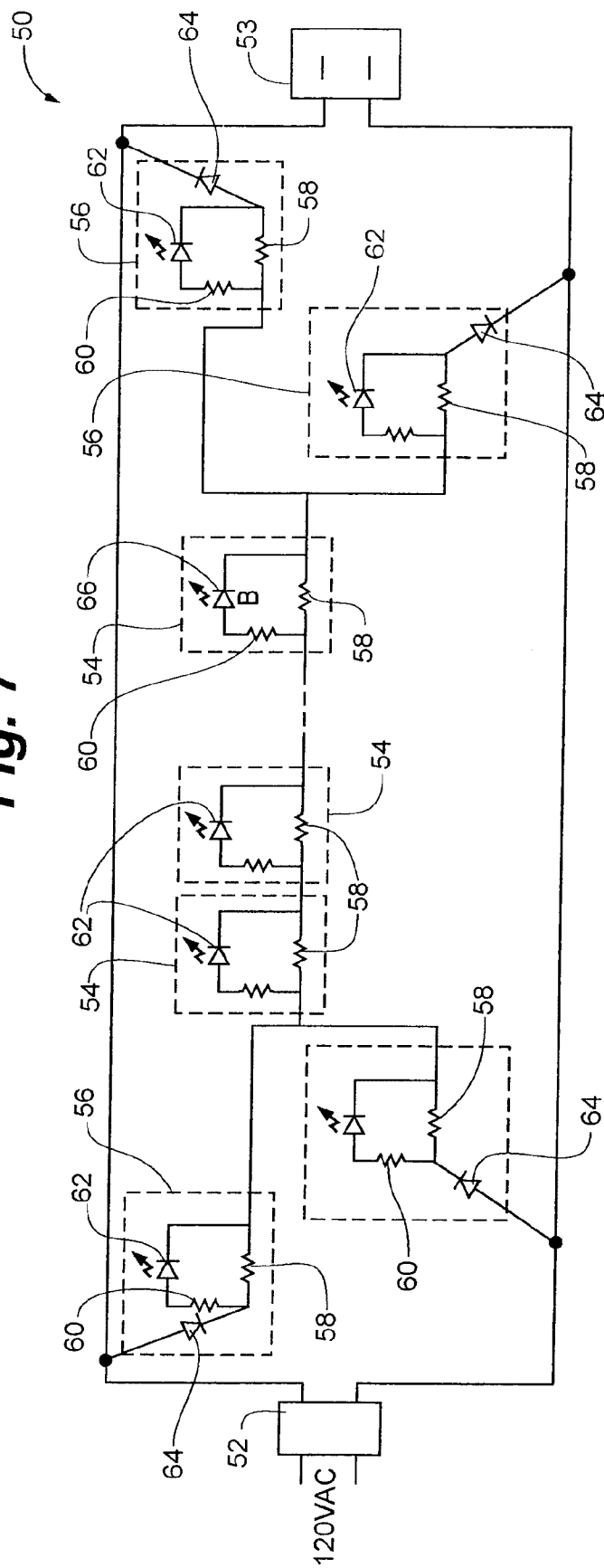


Fig. 7



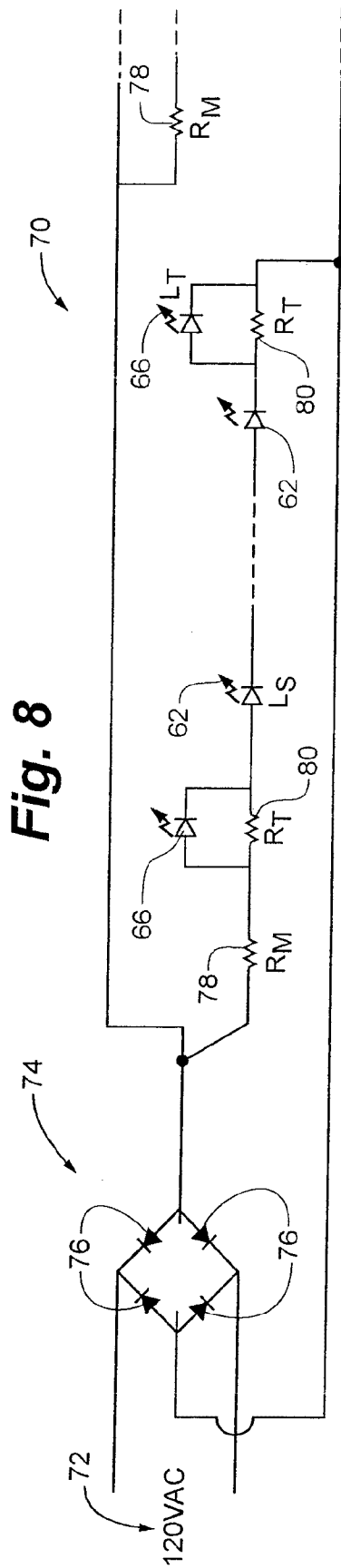


Fig. 9

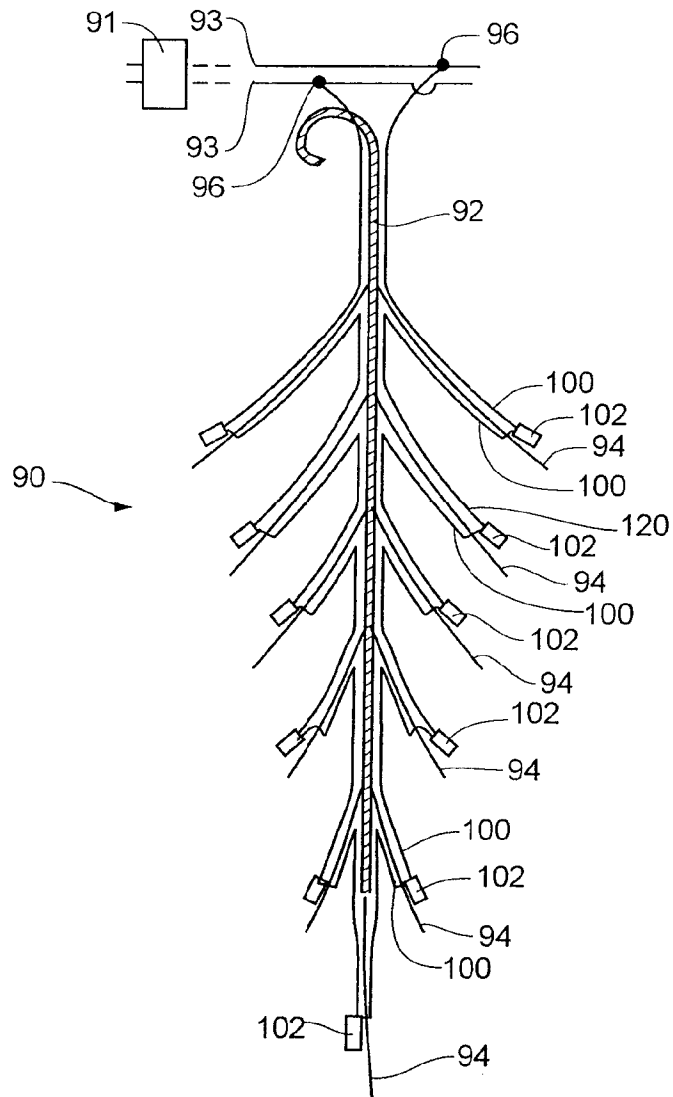


Fig. 10

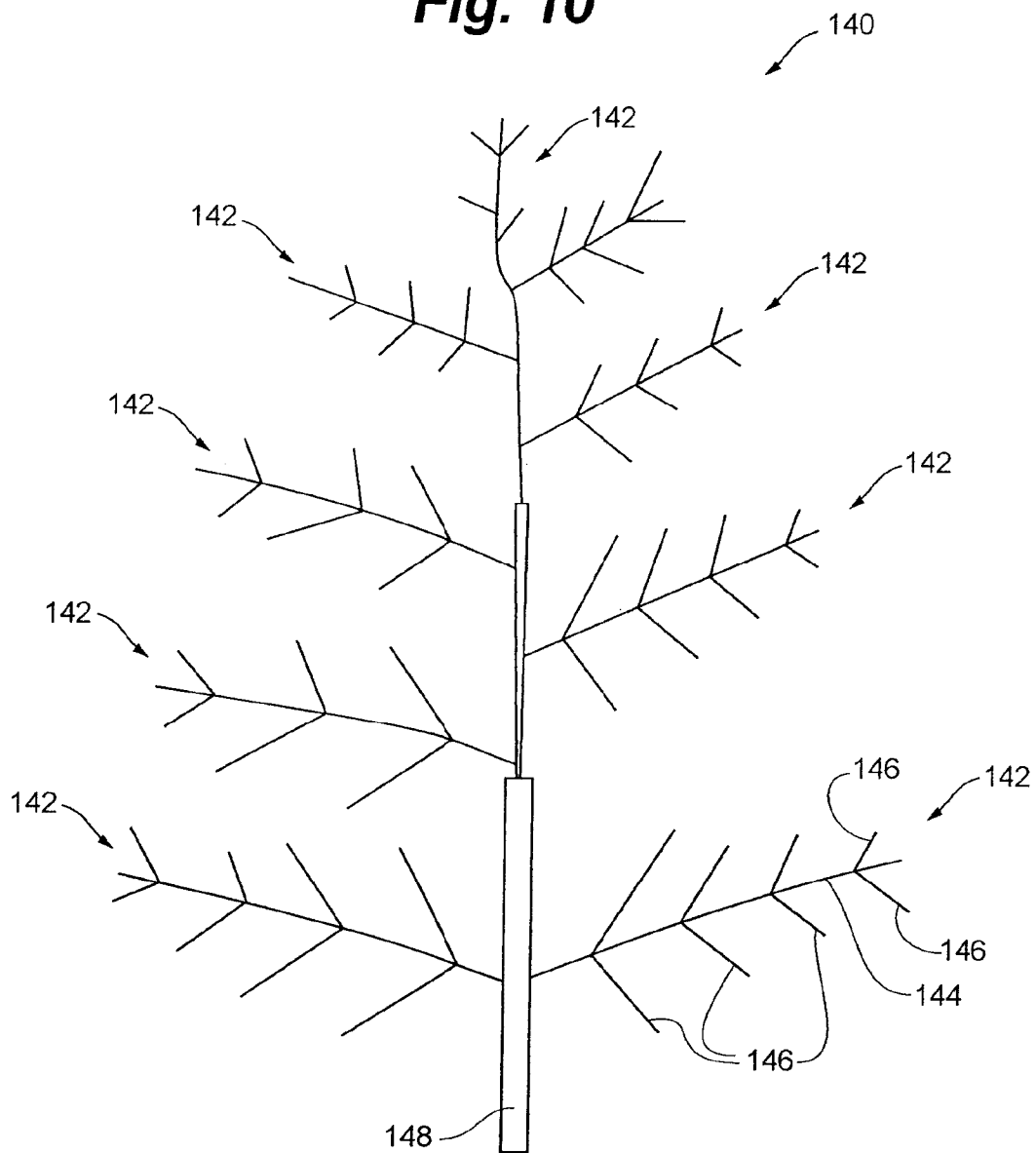


Fig. 11

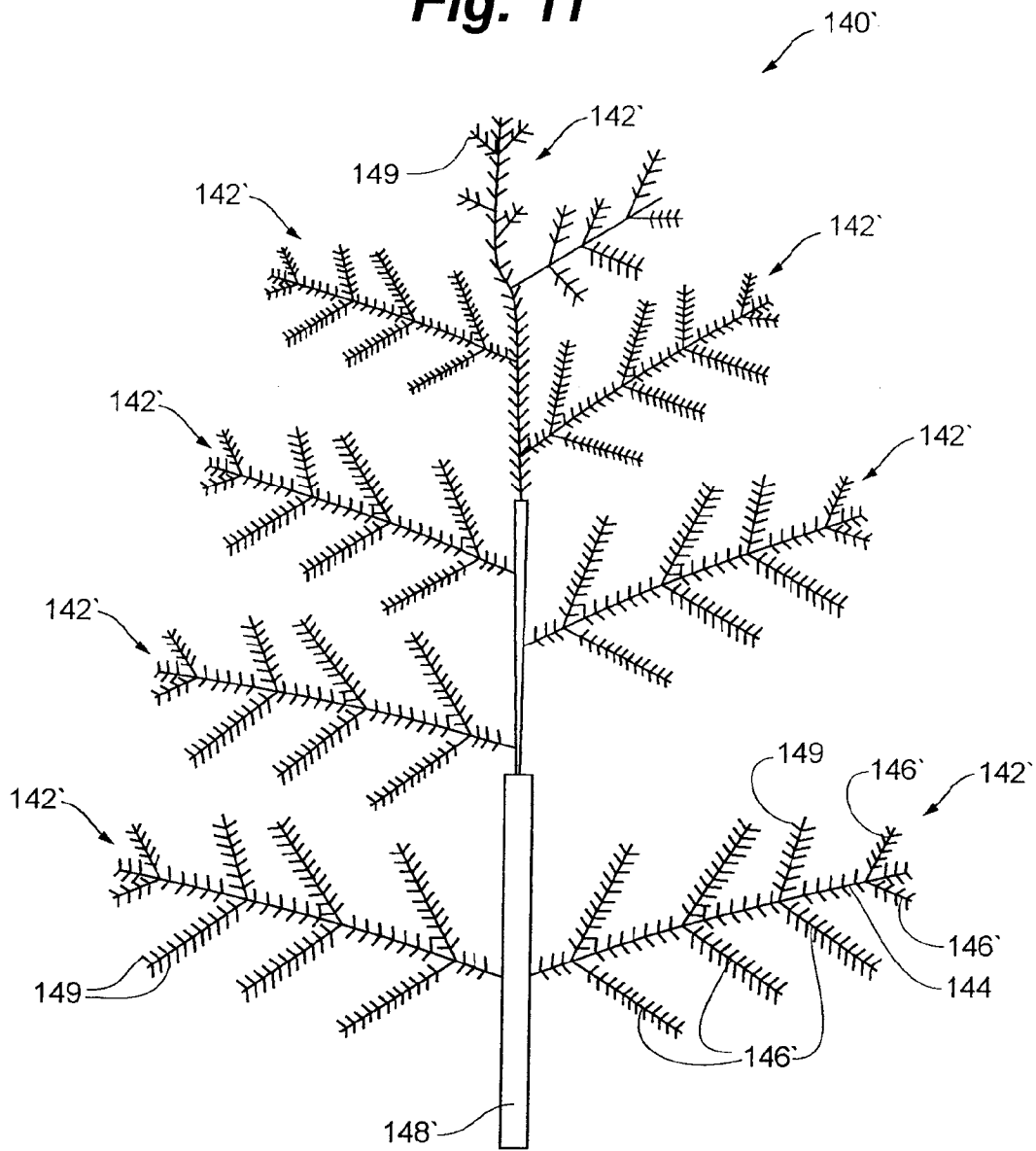


Fig. 12

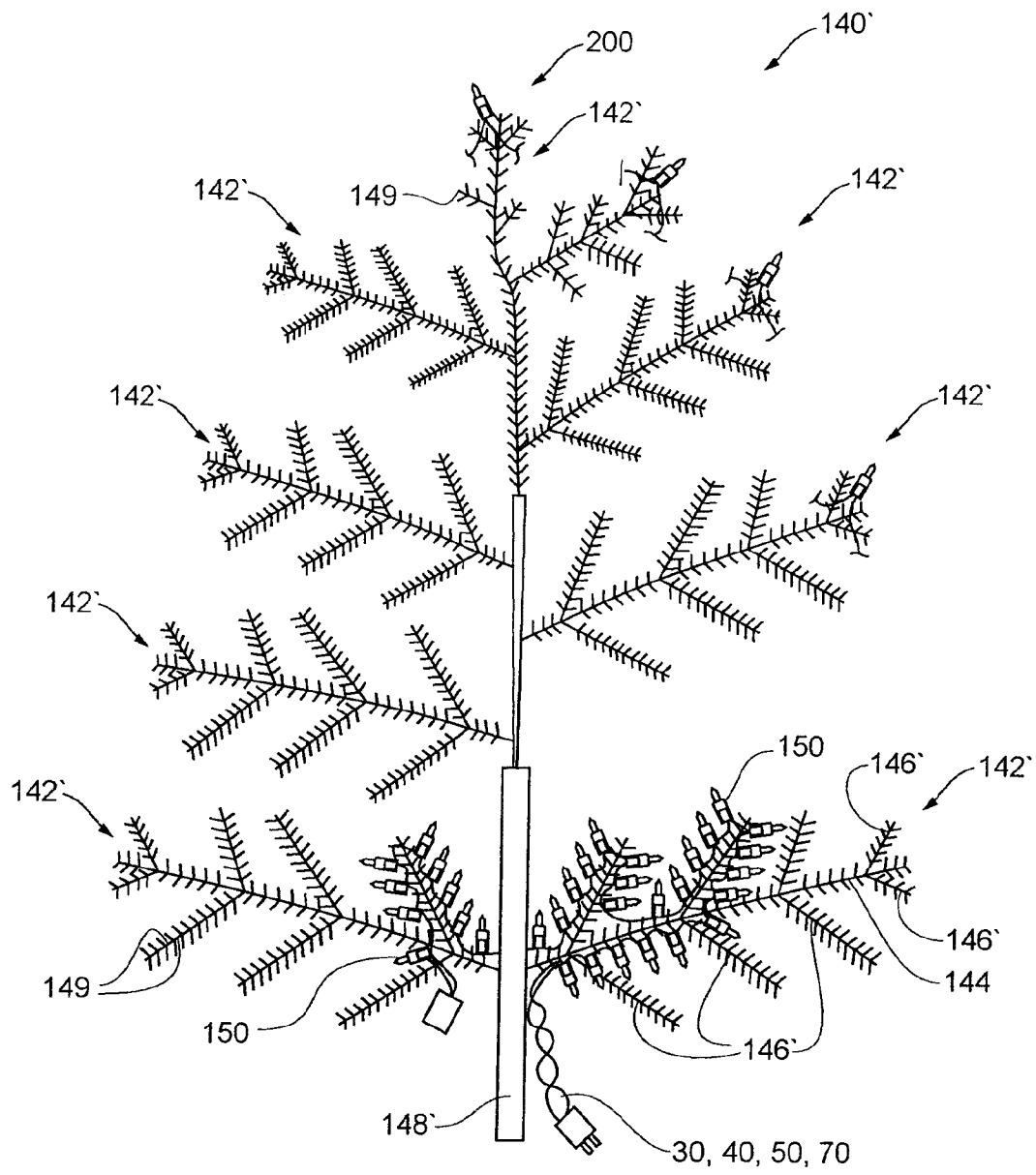


Fig. 13

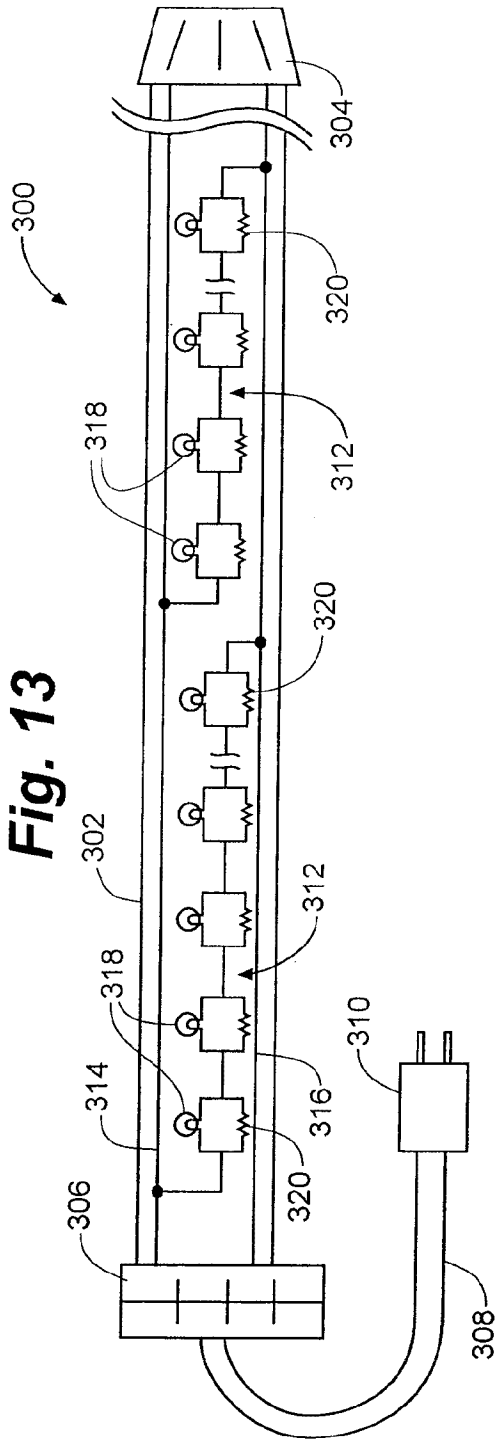
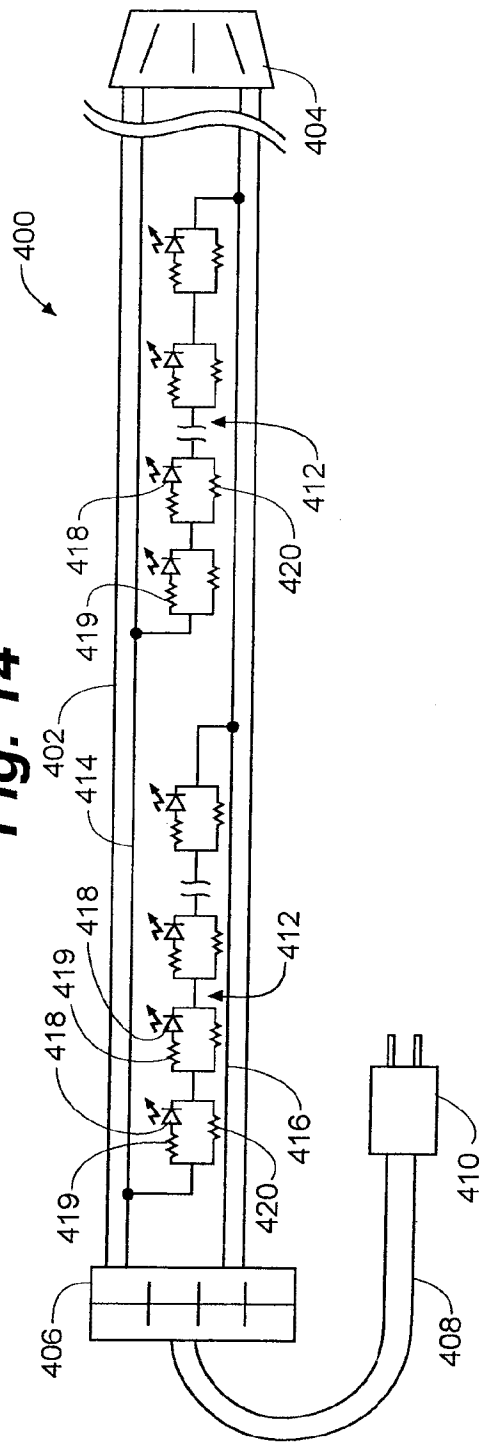
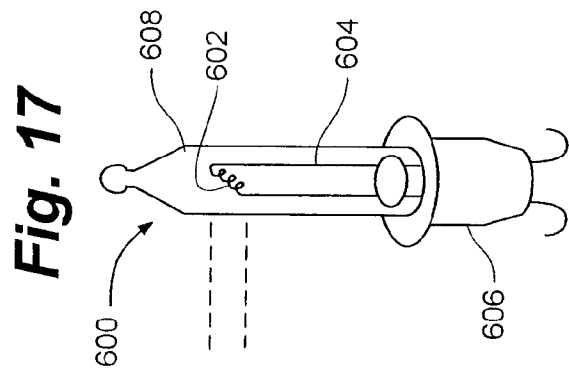
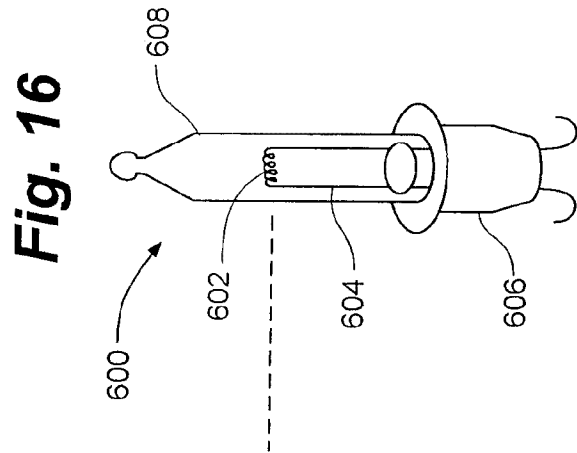
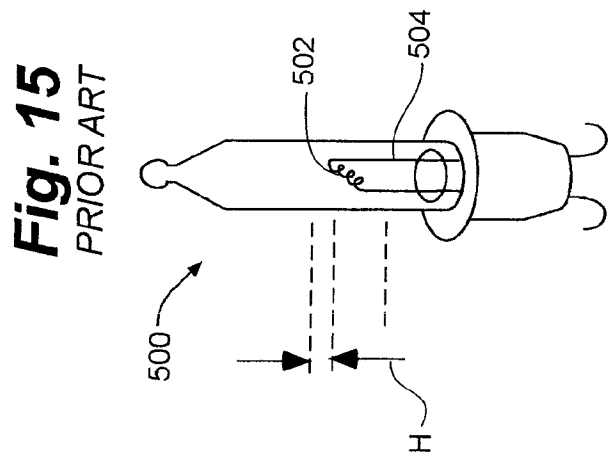


Fig. 14





RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

Related Applications

The present invention claims the benefit of U.S. Provisional Application 60/876,868, filed on December 22, 2006, incorporated herein in its entirety by reference.

5

Technical Field of the Invention

The present invention is generally related to an improved light circuit for series circuits or series-parallel circuits utilizing incandescent, LED, or other types of lighting sources, and more particularly, the present invention relates to a resistive bypass element that will continue to conduct electricity and keep the remainder of the series circuit of
10 lights lit even when one or more individual lighting elements are burnt out, defective, broken, have a loose connection or a broken connection in the series circuit, including series parallel circuits.

Background of the Invention

Series connected circuits containing lighting sources are well known especially in
15 lighting strings and flexible lighting (Rope Lights) around the holidays when such light strings are used for decorative purposes. More recently, series connected lighting sources are becoming popular in task lighting, general illumination, automotive lighting, and specialty lighting utilizing LEDs. Generally, the lights in these lighting circuits are electrically in series rather than in parallel. One particular drawback to these types of
20 lighting circuits is that when a lighting source is removed from the circuit, is burnt out, defective, or has a loose connection, the entire lighting circuit is rendered inoperable. Each lighting element within the circuit completes the electrical circuit, so when a light source is removed (for a replaceable type), a connection becomes loose, or the lighting

element burns out or other lighting component within the light source, a gap is created in the circuit and electricity is unable to continue to flow through the circuit. When a "good" light source is inserted into the circuit or socket, it completes the circuit, thus allowing electricity to flow uninterrupted.

5 Specifically, Fisherman, U.S. 2,760,120, discloses a series circuit for a light set with individual incandescent flasher or twinkle bulbs that include a bypass resistor in parallel with the bulb element. The operation of the Fisherman light set is limited to a set with a bulb that flashes on and off, a duty cycle of less than 100%. The on time of the bulb is necessary to control heat generation in the resistor, the resistor conducting during
10 the off time of the bulb, thereby regulating the heat produced in the resistor circuit. The Fisherman device cannot be applied to a set wherein a bulb is burnt out, removed, or loose (and not conducting) to continue to illuminate the remaining bulbs in the circuit. In such situation, the bypass resistor is continually conducting and the temperatures generated on any bypass resistor of practical size (let alone one that fits into a socket) will
15 far exceed ignition temperatures of near by materials used in construction of the set. Further, the Fisherman bulb is a high energy bulb, being 8 volt and $\frac{1}{4}$ amp, for a power consumption of 2 watts. A more energy efficient bulb is in demand at the present time. Presently, bulbs, such as that depicted generally at 500 in prior art Fig. 15, are utilized. Such bulbs are a considerable improvement when compared to the Fisherman bulb,
20 having 0.35 – 0.425 watt power consumption. There is still a need in the industry for a more energy efficient bulb.

While previous mechanical and electrical circuit configurations have been used in an attempt to address the problems described above, none do so with the reliability,

simplicity, low cost of the present invention, and reduced energy consumption. The difficulties and drawbacks of previous lighting series circuit configurations are overcome by the resistive bypass for a series light circuit of the present invention.

5

Summary of the Invention

The systems and methods of the invention have several features, no single one of which is solely responsible for its desirable attributes. Without limiting the scope of the invention as expressed by the claims which follow, its more prominent features will now be discussed briefly. After considering this discussion, and particularly after reading the
10 section entitled "Detailed Description of the Drawings" one will understand how the features of the light unit for a light string provide several advantages over traditional series light circuit.

Accordingly, it is an object of the present invention to provide a novel and improved bypass circuit for a series light circuit configuration capable of keeping
15 uninterrupted current flow on condition that a light source of the circuit is removed, becomes loose, fails to conduct, or lighting element or other lighting device of the light source burns out, or becomes defective within the light source.

A further object of the present invention is to provide an incandescent bulb of reduced energy consumption while at the same time maintaining the level of brightness
20 apparent to the human eye as is produced by current higher energy consuming bulbs (the standard bulb having a power consumption of 0.35 – 0.425 watts). The present invention utilizes bulbs that are less than 0.25 watts and are more preferably 0.20 watts. In order to achieve substantially the same brightness as the standard bulb, the bulb of the present

invention uses a higher purity tungsten filament, along with a tighter coil for the filament when rated 0.20 watts. Further, to improve the brightness, the filament is placed higher into the bulb canopy, so that losses from the plastic bulb adaptor at the bottom of the bulb do not absorb as much light. This provides for a measurably brighter bulb, and also provides to the human eye an even apparently brighter bulb, as the filament is higher up into the bulb, something that hasn't been done in the industry to date. Such bulbs can be utilized with a duty cycle of 100% and, when disabled, the conducting bypass resistor in the circuit of the present invention does not achieve dangerous temperature levels due to the reduced current flow. The Fisherman device is necessarily restricted to employment with flasher bulbs, and these must be used in a set where the bulbs are never fully off (disabled) so that the bypass resistor is not continually conducting.

Another object of the present invention is to provide the ability to allow for semiconductor light sources, such as light emitting diodes (LEDs), to provide a twinkling affect, by utilizing LED packages that incorporate integrated circuits (ICs) or other types of electronic circuits that control the flashing rate of the light source, which would only effect the individual lighting element as the resistive bypass would allow current to continue to flow in remaining lighting elements in the series circuit. In another embodiment of the invention, one or more semiconductor light sources, each with a flashing circuit, but without an associated bypass element in parallel, can be located in the lighting circuit in order to flash all the remaining light sources in the series circuit.

In yet another embodiment of the invention, one or more incandescent light sources, each with a flashing device, but without an associated bypass element in parallel,

can be located in the lighting circuit in order to flash all the remaining light sources in the circuit.

Yet another object of the present invention is to provide the ability to allow for semiconductor light sources, such as LEDs, to provide color changing characteristics by
5 utilizing LED packages that incorporate two or more LED chips, and an IC, or other electronic circuit, that controls each LED chip in the LED package independently, while the electronic circuit or IC controls the current and/or voltage to the individual LEDs in the LED package, allowing for the mixing of the LED chip colors to get various resultant colors, which would only affect the individual lighting element as the resistive bypass
10 would allow current to continue to flow in remaining lighting elements in the series circuit. Those skilled in the art would also recognize that a zener diode could be used in parallel to the light source and bypass circuit to help regulate the voltage across the light source.

Further objects and features of the invention will be readily apparent to those
15 skilled in the art from the following specification which includes the appended claims and drawings.

To achieve the above objects and in accordance with the purpose of the invention, as embodied and broadly described herein, one embodiment of a light circuit for a series lighting circuit of the present invention comprises lighting sources connected in series
20 with each other, where each lighting source has a resistive bypass element connected in parallel across it.

The embodiment of this device is to provide a low cost resistive bypass element for series connected light sources. The current movement towards low energy

incandescent bulbs, LEDs, and other energy saving light sources allows for a simple resistor to be utilized without creating the heating issues previously faced if such a device was attempted. Now with these low power consuming lighting sources, a resistive bypass element becomes the forefront of products, providing a low-cost bypass circuit.

5 In addition, the use of the resistive bypass element in series connected lighting circuits enables longevity and durability to continue without affect from the failure of any single light source due to defect, or connection issues.

 In another embodiment of the present invention, the resistive bypass element may be connected in parallel with more than one light source, where the failure of one bulb
10 would then only affect a limited amount of light sources in the lighting circuit, further saving the cost of bypass resistive elements across each lighting source.

 In another embodiment of the present invention, a resistive bypass circuit allows for other types of lighting effects, such as twinkle type products where a semiconductor light source can utilize miniature ICs inside a lighting package, and will only affect that
15 lighting source, allowing the remaining light sources to function independently. Also, more than one light package may have the twinkling effect. For this embodiment, the resistive bypass may only be used across those twinkling effect light sources, as an additional embodiment, or may be used across all lighting sources.

 One more embodiment of the resistive bypass circuit is that it also allows for the
20 use of color changing LED packages, that utilize more than one LED chip inside, and may consist of an IC controlled mixing of the LED chips to create other resultant colors, and will only effect that lighting source, allowing the remaining light sources to function independently. Also, more than one light package may have this color changing effect.

For this embodiment, the resistive bypass may only be used across those color changing light sources, as an additional embodiment, or may be used across all lighting sources.

The series circuits above with bypass resistors, can also be employed in series – parallel circuits, and be employed in products with or without lampholders, including
5 directly connected to printed circuit boards, as other embodiments of the invention.

The present invention has numerous features and advantages associated therewith.

The bypass circuit of the present invention herein described has an advantage of keeping the remainder of lights within a series lighting circuit lit when a light source is missing from, or becomes loose in, one or more light source sockets or circuits, or
10 becomes defective. This is accomplished by continuing to conduct electricity through the series light circuit even when a light source is broken, loose, poor connection, or defective light source.

The bypass circuit can be utilized in AC or DC circuits powered by batteries, step down transformers, AC utility power, or converters from AC to DC or DC to AC power,
15 pulsed DC, and filtered or unfiltered DC.

As will be realized, the invention is capable of other and different embodiments and its several details are capable of modifications in various respects, all without departing from the invention. Accordingly, the drawing and description are to be regarded as illustrative and not restrictive.

20 Other objects, advantages and novel features of the present invention will be drawn from the following detailed description of preferred embodiment of the present invention with the attached drawings. The accompanying drawings are included to provide a further understanding of the invention, and are incorporated in and constitute a

part of this specification. The drawings illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention, in which:

Brief Description of the Drawings

Fig. 1 is a circuit diagram of one embodiment of the present invention where the
5 lighting sources are incandescent bulbs;

Fig. 2 is a circuit diagram of one embodiment of the present invention where the lighting sources include LEDs;

Figs. 2a – 2c show various configurations and locations of the current limiting resistor and series and series-parallel configurations of Fig. 2;

10 Fig. 2D shows a circuit diagram of one embodiment using a full wave rectifier with an optional filter capacitor;

Fig. 3 is a diagram of a light string embodiment of the present invention where the lighting sources are incandescent bulbs and the lighting element is a filament;

Fig. 4a is a front and side view of a light source assembly where the light source
15 is an incandescent bulb;

Fig. 4b is a front and side view of a light source assembly that includes an incandescent light bulb and a resistor;

Fig. 4c is a front and side view of a light source assembly that includes an incandescent light bulb, a resistor, and a large-diameter lamp holder;

20 Fig. 4d is a front and side view of a light source assembly showing the brass contacts of the light source assembly and an alternate resistor mounting position;

Fig. 5 is a diagram of a light string embodiment of the present invention where the light sources LEDs and the lighting element is an LED semiconductor chip;

Fig. 6 is a front view of a light source assembly where the light source includes an LED encased in an epoxy lens;

Fig. 7 is a diagram of one embodiment of the present invention that produces a twinkling effect and includes a split construction of a full wave rectifier;

5 Fig. 8 is diagram of another embodiment of the present invention that produces a twinkling effect and includes traditional full-wave rectification;

Fig. 9 is a front and close-up view of the present invention embodied in a wire tree branch;

10 Fig. 10 is a front view of a needless artificial tree as used in a lighted green goods system of the present invention;

Fig. 11 is a front view of an artificial tree with needles as used in a lighted green goods system of the present invention;

Fig. 12 is a front view of one embodiment of a lighted green goods system using bypass circuit light strings;

15 Fig.13 is a view of a flexible lighting system with a bypass circuit using incandescent light sources;

Fig.14 is a view of a flexible lighting system with a bypass circuit using LED light sources;

Fig. 15 is an elevational view of a prior art bulb;

20 Fig. 16 is an elevational view of a bulb of the present invention; and

Fig. 17 is an elevational view of a bulb of a further embodiment of the present invention.

Detailed Description of the Drawings

The resistive bypass circuit 10, being a set or sting of lights, as shown in Fig. 1 includes a power source 12, light sources 14, and bypass resistors 16. Power source 12 is shown in Fig. 1 is a 120 volt alternating current (AC) power source, power source can be any voltage AC, direct current (DC), AC converted to DC, or DC converted to AC, both filtered or unfiltered DC, and pulsating DC or any other power source that can power the lighting sources. Light sources 14 may include incandescent bulbs, LEDs, or other lighting devices. Light sources 14 of Fig. 1 are incandescent bulbs.

Bypass resistors 16 are configured in parallel with light sources 14, and combinations of bypass resistors 16 and light sources 14 are configured in series. Light sources 14 and bypass resistors 16 may be packaged together into light source assemblies 18. When all light sources 14 are operating properly, a portion of the total current flowing through bypass circuit 10 flows through light source 14, while the remainder flows through bypass resistor 16.

In the event that a light source 14 ceases to conduct, and current flow is interrupted through that light source 14, the total current will flow through its corresponding bypass resistor 16. A missing, broken, or improperly connected light source 14 may cause a light source 14 to fail to conduct. In the case where light source 14 is an incandescent bulb, filament failure, or burnout, may be the cause of a light source failing to conduct. Without bypass resistors 16 operating in parallel with light sources 14, any failure in a light source 14 would interrupt power to all other light sources 14. The values of bypass resistors 16 are typically the same, and are chosen such

that an appropriate current flows through light sources 14 when all light sources are operating properly.

Fig. 2 illustrates another embodiment of the present invention that uses LEDs as a light source. Resistive bypass circuit 20 includes power source 12, light sources 26, optional current limiting resistors 24, and bypass resistor 28. Light sources 26, optional current limiting resistors 24, and bypass resistors 28 may be packaged together into light source assemblies 22. In the embodiment shown in Fig. 2, light source 26 is a single LED, preferably of equal to or less than 0.25W. In other embodiments, light source 26 may be an LED chip that includes more than one LED. Those skilled-in-the-art will appreciate that the value of current limiting resistors 24 will be chosen based on the type of light source 26, the number of light sources 26, the number of bypass resistors 24, and the number and value of bypass resistors 28.

In the embodiment shown in Fig. 2, power source 12 provides power to bypass circuit 20. When all light sources 26 are operable, current flows through the circuit, with a portion of the total current flows through the path containing current limiting resistor 24 and light source 26, while the remainder flows through bypass resistor 28. When current flow is interrupted through a light source 26, total current flows through the corresponding bypass resistor 28, allowing the remaining light sources 26 to operate.

Resistive bypass circuits 10 and 20 may be used with any series, or series-parallel connected lighting device where failure of the bulb or its connection will turn off some or all of the bulbs. This includes mini-bulb lighting strings used for Christmas and other holiday decorative lighting, rope lights (also known as flexible lighting) and other general

lighting applications that use series connected lamps or LEDs, such as a LED desk lamp, or under-counter light.

Power source 12 is shown in Fig. 2 is a 120 volt alternating current (AC) power source, power source can be any voltage AC, direct current (DC), AC converted to DC, or
5 DC converted to AC, both filtered or unfiltered DC, and pulsating DC, or any other power source that can power the lighting sources.

Figs. 2a – 2c show various configurations and locations of the current limiting resistor and series and series-parallel configurations of Fig. 2. Figures 2a and 2b, show light source assemblies, 22, that contain only the light source, 26, and the bypass resistor,
10 28, with the current limiting resistor located outside of the light source assembly 22.

Fig. 2D shows a circuit diagram utilizing a filtered full wave rectifier, 82 with an optional filter capacitor 84. The full wave rectifier could be replaced by a single rectifier diode, 76, to produce $\frac{1}{2}$ wave rectification, and can be optionally filtered by capacitor 84. If a large enough capacitor 84 is selected, utilizing a single diode, 76, it could simulate
15 full wave rectification to the circuit.

It was desired to utilize incandescent bulbs with the resistive bypass circuit 10 as shown in Fig. 1. In order to make the resistor set 10 work with modern, high temperature materials, it was needed to reduce the wattage of the bulbs to at least 0.25W (standard bulbs in the industry are either the common 0.425W bulb, or the less common 0.35W
20 bulb, as noted in prior art Fig. 15), but it is preferable to use 0.20 Watts. Sets using 0.25W bulbs are on the edge of passing ANSI/UL standards, a critical condition for placing such sets in the marketplace. The 0.20W bulbs, on the other hand, more safely allow the set to operate, however, either could be used.

While the 0.25W bulbs (2.5V, 100mA) were close in brightness to the 0.425W bulbs (2.5V, 170mA) that are commonly used, by using a thinner filament wire or other techniques to compensate for lumen output, the brightness of the 0.25 watt bulb is substantially equal to the standard 0.425 bulb. A conventionally constructed 0.20W bulb
5 (2.5V, 80mA) bulb is even dimmer than the 0.35W bulb (2.5V, 140mA), and in the holiday market, the market demands bright bulbs.

To make up for the shortcomings of a conventionally constructed 0.20W bulb, the bulbs of the present invention, noted generally at 600 in Figs.16 and 17, employ a higher purity tungsten filament, along with a tighter coil of the filament 602. Further, the
10 filament 602 is disposed higher into the bulb canopy 608 by the dimension H, noted in Fig. 15. The filament 602 is connected by relatively longer leads 604 than the leads 504 of the prior art that support the prior art filament 502. An advantage of such disposition is that losses from the plastic bulb adaptor 606 at the bottom of the bulb 600 did not absorb as much light. Such disposition of the filament 602 provides for a measurably brighter
15 bulb 600, and also, as viewed by the human eye, an even brighter bulb 600 is perceived as compared with the prior art construction of Fig. 15, as the filament 602 is higher up into the bulb canopy 608, a construction that hasn't been done in the industry.

Further, to enhance the brilliance of the reduced wattage, one version of the low energy bulb 600 of the present invention, the filament 602 is formed of a purer form of
20 tungsten and is of thinner construction as compared to the prior art bulb 500. Additionally, the filament 602 is wound tighter than the filament 502 of the prior art. However, one skilled in the art would recognize that if brighter bulbs were not desired, standard bulb construction could be utilized.

In addition, as noted with respect to Fig. 2 above, resistor sets 10 may be employed with light sources 26 being LEDs. Such LEDs typically operate at much lower current (20mA) with a power draw of 0.08W or less, and therefore allow for very cool operation of the resistor bypass circuit 28, even when the bypass resistor 28 is continually
5 conducting. In either case, there is substantial energy savings. In another embodiment, higher power LEDs or several LEDs in parallel may be employed across the bypass resistor.

The above noted features allow the resistor bypass circuit 10 to operate as a twinkling set by inserting a flasher bulb into any part of the circuit or, if provided, into a
10 socket socket. Flasher bulbs are bulbs where a bimetallic strip heats, and open circuits the bulb (see for example, Fisherman), where a normal holiday light set that creates a twinkling effect has to use twinkling bulbs, where when the bimetallic strip is heated by the filament, it shorts out the bulb, allowing the remaining bulbs to light. In such sets where the bulbs short, ANSI/UL has very stringent requirements for construction and
15 operation. In contrast however, in the resistor bypass set 10 of the present invention, use of a flasher bulb is not restricted, nor does it pose any additional safety concerns, as when the flasher bulb open circuits, it allows the resistor bypass set to work as it would normally, and actually reduces the current to the remaining bulbs, allowing the remaining bulbs to run cooler, as compared to the twinkle bulb set where it operates hotter when one
20 or more bulbs is in the shorted condition.

The resistor bypass set 10 also has the advantage of being a safer set than the standard mini light sets that commonly use a shunt wire inside the bulb to allow the current to continue flowing, as sets containing shunted bulbs create short circuits across

the bulb, further dividing the input voltage by the remaining bulbs, increasing the power drop across each bulb. The increased power drop increases the surface temperature of the bulb, and causing the remaining bulbs in the set to burn out faster. This repeated action causes the bulbs to become very hot, where as the resistor bypass set 10 of the present invention operates such that every bulb failure, places a higher resistance into the set than the bulb it replaces, causing the remaining bulbs to proportionally dim, causing them to increase their life, and to run cooler. However, the resistor could be sized such that the current is not reduced, and may remain relatively constant, or even slightly increase, depending on the effect desired.

Fig. 3 is an embodiment of the present invention in the form of a series-connected decorative light string 30. Decorative light string 30 includes power plug 32, optional light source assemblies 34, incandescent bulbs 36 and bypass resistors 16. Power plug 32 may directly plug into utility power (120V, 208V, 220V, 240V, 280V, etc), connect to a step down power supply (such as a Class 2 power supply) or may be omitted for direct connection to a power source. As shown in Fig. 3, incandescent bulbs 36 may be a miniature bulb-type (mini bulb) operating on 2.5 VAC at 70-120 mA, or some other low current draw bulb. Resistors 16 may be in the range of 30 ohms to 60 ohms, though the value of resistors 16 will vary according to the total current flow desired, as well as according to other factors mentioned above. Resistors 16 are configured in parallel with light sources 36. Light source assemblies 34, if provided, are configured electrically in series with each other. As indicated earlier, when a light source assembly 36 fails, total system current will flow through the corresponding bypass resistor 16, allowing the other light sources 36 to remain lit.

In one embodiment of the decorative light string 30 includes one or more light source assemblies 34 that includes a flashing device, but does not include a bypass element 16 in parallel, causing all of the remaining light source assemblies 34 in the series circuit of decorative light string 30 to flash.

5 Some methods of making light source assemblies 34 are further described in Figs. 4a-d, but the present invention is not limited to the embodiments depicted in the figures.

Fig. 4a illustrates a light source assembly 34a including a light source 36a in the form of a mini bulb, and a lamp holder 35a. Fig. 4b illustrates a light source assembly 34b that includes a light source assembly 34b, a light source 36b in the form of a mini bulb, a
10 bypass resistor 16, and a lamp holder 35b. Lamp holder 35b may be larger than lamp holder 35a to accommodate bypass resistor 16. Bypass resistor 16 is connected across light source 36b in parallel. The connection may be accomplished by soldering, crimping, friction fit, compression fit, or other means, including connecting to a pair of brass contacts (not shown), to the leads of light source 26b, or to other conductors.

15 Fig. 4c illustrates yet another light source assembly, light source assembly 34c, which includes a light source assembly 34c, a light source 36c in the form of a mini bulb, a bypass resistor 16, and a lamp holder 35c. In this embodiment, lamp holder 34c is even larger than lamp holder 35b.

Fig. 4d illustrates another light source assembly, light source assembly 34d, which
20 includes a light source assembly 34d, a light source 36d in the form of a mini bulb, a bypass resistor 16, and a lamp holder 35d. In this embodiment, lamp holder 34d may be longer than lamp holder 35b. In the embodiment shown in Fig. 4, one lead of bypass resistor 16 can be crimped to the brass contact. The other lead of bypass resistor 16 may

be crimped to a second brass contact 17, or connected by other means, such that it is electrically in parallel with light source 36d. Other means includes being connected to the leads of light source 36. In addition to crimping, soldering, friction fit, compression, and other common connection means may be employed.

5 In yet another embodiment, light sources 36 may be mini bulbs filled with an inert gas. Since the use of a bypass resistor 16 has the potential to decrease current flow through light sources 36, an inert gas, such as Krypton, can be used in place of a vacuum to allow for the bulb filament to burn whiter and maintaining the same bulb life expected from mini bulbs and get even closer to a standard mini bulb brightness.

10 Lamp holders 35 of light source assemblies 34 may include molded lamp holders, assembled-on lamp holders, heat-shrink formed lamp holders, and other types of lamp holders. Light sources 36 may be removable, or non-replaceable. In another embodiment, the light source assemblies 34 may be mounted on a rigid or flexible printed circuit board, or connected directly to conductors or wires.

15 Another embodiment of the present invention is a light string 40 as shown in Fig. 5. Light string 40 includes an optional power plug 42, light sources 26, current-limiting resistors 24, and bypass resistors 28. Light sources 26, current limiting resistors 24, and bypass resistors 28 may be packaged together into light source assemblies 44. The embodiment as shown works substantially as described above.

20 One embodiment of light source 44 is shown in Fig. 6. Lamp holder base 33 houses bypass resistor 28, brass contacts 17, and the ends of wires 45. Bypass resistor 28 is connected to brass contacts 17 or other contact material to create a parallel configuration. Brass contacts 17 may be crimped on to wires 45 or other conductors.

The optional lamp holder adapter 48 attaches to epoxy or some other material lens 46.

The lens 46 encases light source 26, where light source 26 in this embodiment is an LED.

In another embodiment, the bypass resistor 28, may be located directly across the LED leads 49 outside of any optional lens material, 46.

5 In an alternate embodiment, the bypass resistor 28 may be located within the LED lens material 46 in parallel with the LED, or even inside the glass bulb envelope for incandescent bulbs.

Fig. 7 illustrates another embodiment of the present invention, light string 50, that utilizes partial rectification and blinking LEDs inside the epoxy lens. Light string 50
10 includes a power plug 52, end connect 53, and light source assemblies 54 and 56. Light source assemblies 54 are connected in a series configuration. Light source assemblies 56 are connected to the series-connected light sources 54 as shown in Fig. 7.

Light source assemblies 56 includes a bypass resistor 58, optional current limiting resistor 60, light source 62, which in this embodiment is an LED, and diode 64. Light
15 source assembly 56 may also includes a lamp holder (not shown), similar to the ones described above.

Light source assemblies 54 includes a bypass resistor 58, optional current limiting resistor 60, and light source 62 or light source 66. In this embodiment, light source 62 is an LED chip, and light source 66 is a "blinking" LED that incorporates a chip that turns
20 the LED on and off for a blinking or flashing effect. Operation of light source 66 is independent of the other light sources 62 due to the bypass resistor 58. Light source assembly 54 may also includes a lamp holder (not shown), similar to the ones described

above. Circuit 50 may utilize more than one blinking LED 66, per circuit, or may only include blinking LED 66 as its light source.

In this embodiment, diodes 64 provide full-wave rectified power to light source assemblies 54, causing light sources 62 and 66 of light source assemblies 54 to remain lit throughout most of the AC power cycle. Light source assemblies 56 receive partial rectification due to the particular configuration of Fig. 7, causing light sources 62 of light source assemblies 56 to be powered throughout approximately half the AC power cycle.

When light source 66 is a blinking LED chip as shown in Fig. 7, current is periodically interrupted to the LED on the chip. Without bypass resistors 58, this would cause all light sources in light string 50 to lose power due to an interruption of current flowing through the series-connected circuit. However, bypass resistor 28 allows current to continue flowing, maintaining power to other light sources 62 and 66. Under normal operation, light source 66 will cause its LED to blink on and off, creating a twinkling effect, while other light sources 62 remain powered and lit. The use of multiple light sources 66 in a light string 50 creates a desirable twinkling effect as light sources 66 turn on and off, while light sources 62 remain lit.

In another embodiment, Light source 66 may be a multi LED chip configuration, programmed to change the light output color of the light source. Alternate embodiments may use a light source 66 where the bypass device 80 is an electronic circuit, or integrated circuit across the LED leads inside or outside of the epoxy housing/lens.

Figure 8 illustrates another embodiment where, a resistive bypass circuit 70 utilizes full-wave rectification to provide power to all light sources 62 and 66. Resistive bypass circuit 70 includes an AC power source 72, full-wave rectifier 74 with optional

filter capacitor (not shown), main current limiting resistor 78, bypass resistors 80, light sources 66 and 62. Full-wave rectifier 74 includes four diodes 76. Full wave rectifier 74 may optionally employ one diode 76, and a sufficiently sized filter capacitor to simulate full wave rectification. The AC power source 72 may be any source voltage.

5 In this embodiment, full-wave rectifier 74 provides DC power for bypass circuit 70. Main current limiting resistor 78 limits the total amount of current flowing through circuit 70 and is sized partially based on the number of light sources 62 and 66. The use of a single current limiting resistor 78 rather than multiple current limiting resistors simplifies design and manufacturing efforts, but may optionally be manufactured with
10 multiple current limiting resistors as described in the embodiments above. Lights source 66 in the form of blinking LED chips, along with bypass resistors 80 create a twinkling effect when embodied in a light string. The size of bypass resistor 80 depends on the electrical characteristics of light source 66, but in one embodiment may be 300 to 600 ohms. In some embodiments, bypass resistor 80 may only be used in conjunction with
15 light sources 66, and not with light sources 60. This configuration would enable the twinkling effect, but would eliminate the bypass function at light sources 62.

 Another embodiment is the use of circuit 70 in a DC-supplied circuit, such that full wave rectifier 74 is not required. Additional embodiments of circuit 70 are configured in a series-parallel configuration. In another embodiment, light source 66
20 may be a multi LED chip configuration, programmed to change the light output color of the light source.

 Fig. 9 depicts a decorative lighting sculpture 90 that includes an optional power plug 91, wires 98, optional connectors 96, main rod 92, branches 94, wires 100 and light

source assemblies 102. Power plug 91 may be connected in one embodiment to a 45 VDC to 50 VDC class 2 transformer with an output of 1.2 A, though other voltage ranges and power sources may be used. Alternatively, light sculpture 90 may not include power plug 91 and may be directly connected a power source. Light source assemblies 102 may
5 be similar in configuration to the other light source assemblies described above, utilizing incandescent bulbs, LEDs, or other light sources configured in parallel with a bypass resistor.

In alternate embodiments, the bypass resistor may be replaced by bypass circuits utilizing transistors or other electronic active circuits.

10 The circuits and light strings of the present invention as applied to artificial trees, wreaths, garlands, and other artificial greenery, or alternatively to medium to large decorative products, such as stars, figures, icons and other decorative products provide a number of advantages. Replacing light strings due to light sources that have failed on a light string that is attached to an artificial tree or other decorative product, can be a
15 difficult task since the string is not easily removed from the tree or products and the use of electric testers is not practical due to the fields such products produce with the volumes of wires and optional metal support structures. The bypass circuits and light sets described herein ensure that the light string will continue to remain lit even in the event of a light source failure, meaning that the entire light string does not have to be removed
20 from the tree or decorative product. The combination of circuits, light strings and tree make a reliable, convenient lighted green goods system. Figs. 10-12 depict some of the artificial trees used in such a lighted green goods system.

Fig. 10 shows one version of an artificial tree 140 that includes a tree trunk 148, branches 142, branch mains 144, and sub-branches 146. Artificial tree 140 may be constructed of a combination of many materials as described above. In this embodiment, artificial tree 140 is constructed primarily of painted metal, or in another embodiment made primarily of plastic, or a combination of plastic and metal.

Fig. 11 shows another version of an artificial tree, 140'. Artificial tree 140' includes tree trunk 148', branches 142', branch mains 144', sub-branches 146' and needles 149. Needles 149 are commonly derived from PVC, nylon, and/or PE and may be green in color to make artificial tree 140' appear to be an evergreen or pine tree. In another embodiment it may use white needles and branches for different aesthetics.

FIG. 12 light string, such as light string 30, 40, 50, 70, or a combination thereof, attached to branches 142 of tree 140 to form a pre-lit tree system 200. Light strings 30, 40, 50, 70, or other embodiments of the present invention, may be similarly attached to trees 140'. Light string 30, 40, 50, 70 is shown attached to tree 140 via clips 150. Clip 150 may include but are not limited to C clips, snap lock clips, and wire ties.

Figs. 13 and 14 depict the present invention in the form of flexible lighting, or rope lighting. Flexible lighting 300 as depicted in FIG. 13 includes an outer encasement 302, end cap 304, power cap 306, power cord 308, power plug 310, and one or more bypass circuits 312. Flexible lighting 300 may operate on 120VAC, which is transmitted through power plug 310 and power cord 308, though other voltages may be used, and the input may be rectified or DC. Outer encasement 302 is typically made of a PVC material, and houses bypass circuit 312. Power cap 306 assists in attaching power cord

308 to bypass circuit 312 and may attach to outer encasement 302 by any number of known methods.

Bypass circuits 312 are series circuits and each bypass circuit 312 is connected in parallel with the other. Bypass circuit 312 includes a plurality of light sources 314 electrically connected in parallel with bypass resistors 320. Light sources 318 may be incandescent bulbs, LEDs, or other light sources. As described in previous embodiments, bypass resistor 320 may be replaced with another active circuit device. Bypass circuit 312 may also include conductors 314 and 316 which extend the length of flexible lighting 300 and provide power to the bypass circuits 312 when more than one circuit 312 is employed.

Operation of flexible lighting 300 is similar to those embodiments described above. During normal operation, current flows through both light source 318 and bypass resistors 320. If light source 318 fails, the entire bypass circuit 312 current flows through bypass resistor 320, allowing flexible lighting 300 to stay lit.

FIG. 14 depicts a similar flexible lighting system that relies on LEDs, rather than incandescent bulbs. Flexible lighting 400 as depicted in FIG. 14 includes an outer encasement 402, end cap 404, power cap 406, power cord 408, power plug 410, and one or more bypass circuits 412. Flexible lighting 400 may operate on 120VAC, which is transmitted through power plug 410 and power cord 408, though other voltages may be used, and the input may be rectified or DC. Outer encasement 402 is typically made of a PVC material, and houses bypass circuit 412. Power cap 406 assists in attaching power cord 408 to bypass circuit 412 and may attach to outer encasement 402 by any number of known methods.

Bypass circuits 412 are series circuits and each bypass circuit 412 is connected in parallel with the other. Bypass circuit 412 includes a plurality of LEDs 414 electrically connected series with resistors 419. Series connected LEDs 414 and resistors 419 are electrically in parallel with bypass resistors 420. Light sources 418 may be LEDs, or
5 other light sources. As described in previous embodiments, bypass resistor 420 may be replaced with another active circuit device. Bypass circuit 412 may also include conductors 414 and 416 which extend the length of flexible lighting 400 and provide power to the bypass circuits 412 when more than one circuit 412 is employed. The number or location of resistors 419 in each circuit 421 may vary based on circuit
10 requirements, with some bypass circuits 412 not including a resistor 419. In other embodiments, resistor 419 may be located external to circuit 421, and in line with circuit Bypass circuit 412.

Operation of flexible lighting 400 is similar to those embodiments described above. During normal operation, current flows through both light source 418 and bypass
15 resistors 420. If light source 418 fails, the entire bypass circuit 412 current flows through bypass resistor 420, allowing flexible lighting 400 to remain lit.

Other embodiments of flexible lighting 300 and 400 may incorporate twinkling, flashing and color changing properties as previously described above.

It is desired to utilize incandescent bulbs with the embodiment of Fig. 1. In order to
20 make the resistive bypass set 10 function with modern, high temperature materials, it was needed to reduce the wattage of the bulbs to at least 0.25W (standard bulbs in the industry are the 0.30W bulb). It is preferable to use bulbs of 0.20 Watts. Sets using 0.25W bulbs are on the edge of passing ANSI/UL standards, a critical condition for

placing the resistive bypass set 10 in the marketplace. The 0.20W bulbs, on the other hand, safely allows the set to operate and readily meet ANSI/UL standards, however, either 0.25W or 0.20W bulbs could be used.

5 In addition, the resistor sets with LED sources can also be employed, and as those typically operate at much lower current (20mA) drawing approximately 0.08W, those allow for very cool operation of the resistor bypass circuit. Additional embodiments may use a higher power LED or multiple LEDs connected in parallel across the resistive element.

10 Both of these lighting changes (lower wattage/higher brightness bulbs, and LEDs) were not anticipated, or contemplated by Fisherman, therefore only restricting it to flasher bulbs, and the use in such a set where the bulbs are never fully off.

15 In addition, this allows our resistor bypass set to operate as a twinkling set by inserting a flasher bulb into any circuit. Flasher bulbs are bulbs where the bimetallic strip heats, and open circuits the bulb, where a normal holiday light set that creates a twinkling effect has to use twinkling bulbs, where when the bimetallic strip is heated by the filament, it shorts out the bulb, allowing the remaining bulbs to light, however, in such sets where the bulbs short, ANSI/UL does not allow for such constructions in flexible (rope) lighting. However, in the resistor bypass set, use of a flasher bulb is not restricted, nor does it pose any additional safety concerns, as when the flasher bulb open circuits, it
20 allows the resistor bypass set to work as it would normally, and actually reduces the current to the remaining bulbs, allowing to run cooler, vs. the twinkle bulb set where it operates hotter when one or more bulbs is in the shorted condition.

The resistor bypass set also has the advantage providing a shunting circuit, as

ANSI/UL standards do not allow for shunts that short circuit the bulb in rope (flexible) lighting, as the bulbs are not replaceable, and shorts caused by shunt wires in or out to the bulb would create an unsafe condition as more and more bulbs burn out. A shunt wire inside the bulb to allow the current to continue flowing, as those bulbs create short
5 circuits, further dividing the input voltage by the remaining bulbs, increasing the power drop across each bulb, thereby increasing the surface temperature of the bulb, and causing the subsequent bulb to burn out faster, and this repeated action causing the bulbs to become very hot, where as the resistor bypass set operates such that every bulb failure, places a higher resistance into the set than the bulb it replaces, causing the remaining
10 bulbs to proportionally dim, causing them to increase their life, and run cooler. However, the resistor could be sized such hat the current is not reduced, and may remain relatively constant.

In addition to decorative lighting, the bypass circuits of the present invention may also be used in general lighting applications including portable lighting, auto lighting,
15 traffic lights and the like.

The invention addresses many of the deficiencies and drawbacks previously identified. The invention may be embodied in other specific forms without departing from the essential attributes thereof; therefore, the illustrated embodiments should be considered in all respects as illustrative and not restrictive. The claims provided herein
20 are to ensure adequacy of the present application for establishing foreign priority and for no other purpose.

Claims

What is claimed is:

1. A resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, each respective light source low wattage and being capable operating on a one hundred percent duty cycle as desired.
2. The resistor bypass circuit of claim 1, where the circuit is series-parallel connected.
3. The resistor bypass circuit of claim 1, the light source being an incandescent bulb.
4. The resistor bypass circuit of claim 1, the light source being a semiconductor
5. The resistor bypass circuit of claim 1, the light source being an LED.
6. The resistor bypass circuit of claim 4, the light source the semiconductor light source providing a twinkling effect.
7. The resistor bypass circuit of claim 6, the semiconductor light source utilizing electronic circuits that control the flashing rate of the light source, which would only affect the individual lighting element as the resistive bypass would allow current to continue to flow in remaining lighting elements in the series circuit.
8. The resistor bypass circuit of claim 6, the electronic circuits being LED packages that incorporate integrated circuits (ICs)
9. The resistor bypass circuit of claim 5, the light source being a semiconductor light source for providing color changing characteristics.

10. The resistor bypass circuit of claim 9, the semiconductor light source utilizing LED packages that incorporate two or more LED chips, and an integrated circuit (IC), the integrated circuit controlling each LED chip in respective LED packages independently.

11. The resistor bypass circuit of claim 10, the IC controlling the current and/or
5 voltage to the individual LED chips in the LED package, the control providing for the mixing of the LED chip colors to get various resultant colors.

12. The resistor bypass circuit of claim 11, the control only affecting individual lighting element, the bypass resistor providing for current continuing to flow in remaining lighting elements in the series circuit.

10 13. The resistor bypass circuit of claim 1, a respective resistive bypass resistor being connected in parallel with more than one light source, the failure of one of the light sources thereby only affecting a limited number of the plurality of light sources.

14. The resistor bypass circuit of claim 1 being utilized in AC or DC circuits powered
form a power source selected from the list consisting of batteries, step down
15 transformers, AC utility power, or converters from AC to DC or DC to AC power, pulsed DC, and filtered or unfiltered DC, or partially filtered AC.

15. A resistor bypass circuit for a series lighting circuit comprising a plurality of
serially connected incandescent light sources and a bypass resistor being connected in
parallel with at least one of the respective light sources, each respective light source
20 being low wattage when conducting and being capable operating on a one hundred percent duty cycle as desired.

16. The resistor bypass circuit of claim 15, where the circuit is series-parallel connected.

17. A method of forming a resistor bypass circuit for a series lighting circuit comprising serially connecting a plurality of light sources, connecting a bypass resistor in parallel with at least one of the respective light sources, and to be capable of operating on a one hundred percent duty cycle as desired.

5 18. The method of claim 17, including forming the light source of an incandescent bulb.

19. The method of claim 17, including forming the light source of a semiconductor

20. The method of claim 19, including forming the light source of an LED.

21. An incandescent light bulb having an illuminating element disposed in a region of
10 a bulb canopy that is displaced distant from a bulb base.

22. The bulb of claim 21, a filament being formed of a relatively pure form of tungsten of relatively thin construction.

23. The bulb of claim 21, with a relatively greater number of windings of the filament.

15 24. The bulb of claim 21 with a relative tighter turn radius of the filament.

25. The bulb of claim 21, with a filament being formed of a relatively pure form of tungsten of relatively thin construction with a relatively tighter turn radius of the filament.

20

Abstract

A resistor bypass circuit for a series lighting circuit includes a plurality of serially connected light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, each respective light source being low wattage and being
5 capable operating on a one hundred percent duty cycle as desired.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

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	Unknown
Filing Date	August 12, 2021
First Named Inventor	Steven J. Altamura
Title	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	40617.0493USC5

SIGNATURE of Applicant or Patent Practitioner

Signature	/Michael Lasky/	Date (Optional)	August 12, 2021
Name	Michael B. Lasky	Registration Number	29,555
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.



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POWER OF ATTORNEY BY APPLICANT

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

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- ☒ 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: 52835
- 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.)

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

Seasonal Specialties, LLC

- ☐ 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)	
Name	David Fagerlee, Jr.		
Title	President		

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.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

As the below named inventor, I hereby declare that:

This declaration
is directed to:

☐

The attached application, or

☒

United States application or PCT international application number 15/899264

filed on 19 February 2018

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

I believe that 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.

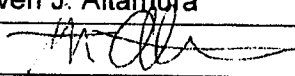
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LEGAL NAME OF INVENTOR

Inventor: Steven J. Altamura

Date (Optional) : _____

Signature: 

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Steven J. Altamura	Examiner:	Unknown
Serial No.:	Unknown	Group Art Unit:	Unknown
Filed:	August 12, 2021	Docket No.:	40617.0493USC5
Title:	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

PRELIMINARY AMENDMENT

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

Dear Sir:

Please enter the following preliminary amendment into the above-referenced application.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-25. (Cancelled)

26. (New) A resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough.

27. (New) The resistor bypass circuit of claim 26, where the circuit is series-parallel connected.

28. (New) The resistor bypass circuit of claim 26 wherein at least one of the light sources is a semiconductor providing a twinkling effect, and wherein the semiconductor light source utilizes electronic circuits that control the flashing rate of the light source.

29. (New) The resistor bypass circuit of claim 26, wherein the LED light source uses 0.20 watts or less.

30. (New) The resistor bypass circuit of claim 26, at least one of the light sources is a semiconductor light source providing a twinkling effect.

31. (New) The resistor bypass circuit of claim 26, at least one of the light sources is a semiconductor light source utilizing electronic circuits that control the flashing rate of the light source, which would only affect the individual lighting element as the resistive bypass would allow current to continue to flow in remaining lighting elements in the series circuit.

32. (New) A resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough and wherein the resistance of the bypass resistor is equal to or greater than the inherent resistance of the light source to which the resistor is attached.

33. (New) The resistor bypass circuit of claim 32, the light source being a semiconductor light source for providing color changing characteristics.

34. (New) The resistor bypass circuit of claim 32, the semiconductor light source utilizing LED packages that incorporate two or more LED chips, and an integrated circuit (IC), the integrated circuit controlling each LED chip in respective LED packages independently.

35. (New) The resistor bypass circuit of claim 34, the IC controlling the current and/or voltage to the individual LED chips in the LED package, the control providing for the mixing of the LED chip colors to get various resultant colors.

36. (New) The resistor bypass circuit of claim 35, the control only affecting individual lighting element, the bypass resistor providing for current continuing to flow in remaining lighting elements in the series circuit.

37. (New) The resistor bypass circuit of claim 26, wherein said light source is a blinking LED with a first state allowing current to flow through the device and a second state where the light source is an open circuit, whereby remaining light sources in the light string operate with current passing through the bypass resistor when the light source is in the second state.

38. (New) The resistor bypass circuit of claim 26 being utilized in AC or DC circuits powered from a power source selected from the list consisting of batteries, step down transformers, AC utility power, or converters from AC to DC or DC to AC power, pulsed DC, and filtered or unfiltered DC, or partially filtered AC.

39. (New) A method of bypassing an LED light source, having a predetermined resistance to current flow, in a serially connected LED light string comprising the steps of:

- a. selecting a bypass resistor with the following characteristics:
 - i. a resistance greater than or equal to the predetermined resistance of said LED light source;
 - ii. the ability to carry all of the current in the light string; and
 - iii. the ability to operate at 100% duty cycle;
- b. inserting said bypass resistor in parallel with said LED light source.

REMARKS

The above preliminary amendment is made to cancel claims 1-25 for this Continuation application filing and to introduce new claims 26-39. No new matter has been added.

Applicant respectfully requests that this preliminary amendment be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Michael B. Lasky at (952) 253-4106.

Respectfully submitted,

Hamre, Schumann, Mueller & Larson, P.C.

Customer No. 52835

Date: August 12, 2021

By: /Michael Lasky/
Michael B. Lasky
Reg. No. 29,555
MBL/yik

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2021-08-12
	First Named Inventor	Steven J. Altamura	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	40617.0493USC5	

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7963670		2011-06-21	Yu	
	2	7666036		2010-02-23	Zou	
	3	9433057		2016-08-30	Janning	
	4	9510423		2016-11-29	Janning	
	5	1024495		1912-04-30	Booth	
	6	1868689		1932-07-26	Brander	
	7	2072337		1937-03-02	Kamm	
	8	2760120		1956-08-21	Fisherman	

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Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

9	3345482		1967-10-03	Shih-Woo Lou	
10	3912966		1975-10-14	Harnden, Jr.	
11	4727449		1988-02-23	Fleck	
12	4985001		1991-01-15	Nagai	
13	5453664		1995-09-26	Harris	
14	5777868		1998-07-07	Gibboney, Jr.	
15	5886423		1999-03-23	Gershen et al.	
16	6084357		2000-07-04	Janning	
17	6283797		2001-09-04	Wu	
18	6323597		2001-11-27	Janning	
19	6344716		2002-02-05	Gibboney, Jr.	

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Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

20	6580182		2003-06-17	Janning	
21	6597125		2003-07-22	Janning	
22	6765313		2004-07-20	Janning	
23	6929383		2005-08-16	Janning	
24	7042116		2006-05-09	Janning	
25	7166968		2007-01-23	Janning	
26	7178961		2007-02-20	Janning	
27	7261458		2007-08-28	Janning	
28	1510847		1922-04-18	Holder	
29	1865689		1929-06-25	Brander	
30	2152228		1937-05-05	Waters	

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Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

31	2760120		1955-10-26	Fisherman	
32	7342327		2008-03-11	Janning	
33	6690103		2004-02-10	Uke	
34	6555948		2003-04-29	Noll	
35	4464600		1984-08-07	Kosmatka et al.	
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Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

42	4629943	1986-12-16	Ponce, Jr.
43	7851981	2010-12-14	Altamura
44	9900968	2018-02-20	Altamura
45	5886423	1999-03-23	Gershen et al.

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	1	20030117021		2003-06-26	Janning	
	2	20050174065		2005-08-11	Janning	
	3	20050205971		2005-09-22	Janning	
	4	20180199419		2018-07-12	Altamura	

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Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

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(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2021-08-12
First Named Inventor	Steven J. Altamura
Art Unit	
Examiner Name	
Attorney Docket Number	40617.0493USC5

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Michael Lasky/	Date (YYYY-MM-DD)	2021-08-12
Name/Print	Michael B. Lasky	Registration Number	29555

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	43492762
Application Number:	17400338
International Application Number:	
Confirmation Number:	6936
Title of Invention:	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT
First Named Inventor/Applicant Name:	Steven J. Altamura
Customer Number:	52835
Filer:	Michael B. Lasky/Yelena Kase
Filer Authorized By:	Michael B. Lasky
Attorney Docket Number:	40617.0493USC5
Receipt Date:	12-AUG-2021
Filing Date:	
Time Stamp:	12:16:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 830
RAM confirmation Number	E20218BC17140552
Deposit Account	503478
Authorized User	Yelena Kase

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.21 (Miscellaneous fees and charges)

0072

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Application_0493USC5.pdf	2075392	yes	46
			0f44401b98456c46a4cb711baa0dc893eb5bfa41		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	26	
	Claims		27	29	
	Abstract		30	30	
	Drawings-only black and white line drawings		31	46	
Warnings:					
Information:					
2		Preliminary_Amendment_0493 USC5.pdf	93688	yes	5
			620fc8f21825d494c24597c9eeb02d48868dcfb4		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Claims		2	4	
	Applicant Arguments/Remarks Made in an Amendment		5	5	
Warnings:					
Information:					
3	Application Data Sheet	ADS_0493USC5.pdf	1823067	no	9
			cf28f857841d98e990af63f61c3b28da75ac939f		
Warnings:					
0072					

Information:					
4	Oath or Declaration filed	Declaration_0493USC5.pdf	66786	no	1
			7f7921d6aa8f7369093b0b20cb8537ad1388c02e		
Warnings:					
Information:					
5	Power of Attorney	POA_0493USC5.pdf	251602	no	2
			f2c10c655bf880ea1646d62a391115d445b3f75e		
Warnings:					
Information:					
6	Information Disclosure Statement (IDS) Form (SB08)	IDS_0493USC5.pdf	1035815	no	8
			a24f40721dcf8173f9ddcf492eca481d730b50d		
Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	44215	no	2
			067ce237acdc959a6ef55de8e0d716215c26cc4f		
Warnings:					
Information:					
Total Files Size (in bytes):			5390565		
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Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT			
First Named Inventor/Applicant Name:	Steven J. Altamura			
Filer:	Michael B. Lasky/Yelena Kase			
Attorney Docket Number:	40617.0493USC5			
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	80	80
UTILITY SEARCH FEE	2111	1	350	350
UTILITY EXAMINATION FEE	2311	1	400	400
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
0075				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				830



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Alexandria, Virginia 22313-1450
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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
17/400,338	08/12/2021	2844	830	40617.0493USC5	14	3

CONFIRMATION NO. 6936

FILING RECEIPT



0000000127898002

52835

HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

Date Mailed: 08/24/2021

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

Steven J. Altamura, Scarsdale, NY;

Applicant(s)

Seasonal Specialties, LLC, Eden Prairie, MN;

Power of Attorney: The patent practitioners associated with Customer Number 52835

Domestic Priority data as claimed by applicant

This application is a CON of 16/693,552 11/25/2019 PAT 11096252
which is a CON of 15/899,264 02/19/2018 PAT 10492282
which is a CON of 14/840,705 08/31/2015 PAT 9900968
which is a CON of 14/052,124 10/11/2013 ABN
which is a CON of 12/947,488 11/16/2010 ABN
which is a DIV of 11/962,964 12/21/2007 PAT 7851981
which claims benefit of 60/876,868 12/22/2006

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

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: 08/23/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/400,338**

Projected Publication Date: 12/02/2021

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

Preliminary Class

315

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

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/400,338	
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 (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	350		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	14	minus 20 = *	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 240 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$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			
			TOTAL	830		TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2.							
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 (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.							



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/400,338	08/12/2021	Steven J. Altamura	40617.0493USC5

CONFIRMATION NO. 6936

PUBLICATION NOTICE



OC000000130179053

52835
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

Title: RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

Publication No. US-2021-0378063-A1

Publication Date: 12/02/2021

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's 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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Steven J. Altamura	Examiner:	HINES, Anne M.
Serial No.:	17/400338	Group Art Unit:	2879
Filed:	August 12, 2021	Docket No.:	40617.0493USC5
Title:	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT		

SECOND PRELIMINARY AMENDMENT

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

Dear Sir:

Please enter the following preliminary amendment into the above-referenced application.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-25. (Cancelled)

26. (New) A resistor bypass circuit for a ~~series~~ lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times across the light sources when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough.

27. (New) The resistor bypass circuit of claim 26, where the circuit is series-parallel connected.

28. (New) The resistor bypass circuit of claim 26 wherein at least one of the light sources is a semiconductor providing a twinkling effect, and wherein the semiconductor light source utilizes electronic circuits that control the flashing rate of the light source.

29. (New) A resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough and further including an LED flashing light source which includes a flashing circuit which causes the entire light circuit to flash.

30. (New) The resistor bypass circuit of claim 26, wherein the LED light source uses 0.20 watts or less.

31. (New) The resistor bypass circuit of claim 26, at least one of the light sources is a semiconductor light source providing a twinkling effect.

32. (New) The resistor bypass circuit of claim 26, at least one of the light sources is a semiconductor light source utilizing electronic circuits that control the flashing rate of the light source, which would only affect the individual lighting element as the resistive bypass would allow current to continue to flow in remaining lighting elements in the series circuit.

33. (New) A resistor bypass circuit for a ~~series~~-lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor connected across the at least one light sources and being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough and wherein the resistance of the bypass resistor is equal to or greater than the inherent resistance of the light source to which the resistor is attached.

34. (New) The resistor bypass circuit of claim 33, the light source being a semiconductor light source for providing color changing characteristics.

35. (Previously Presented) The resistor bypass circuit of claim 33, the semiconductor light source utilizing LED packages that incorporate two or more LED chips, and an integrated circuit (IC), the integrated circuit controlling each LED chip in respective LED packages independently.

36. (New) The resistor bypass circuit of claim 35, the IC controlling the current and/or voltage to the individual LED chips in the LED package, the control providing for the mixing of the LED chip colors to get various resultant colors.

37. (New) The resistor bypass circuit of claim 36, the control only affecting individual

lighting element, the bypass resistor providing for current continuing to flow in remaining lighting elements in the series circuit.

38. (New) The resistor bypass circuit of claim 26, wherein said light source is a blinking LED with a first state allowing current to flow through the device and a second state where the light source is an open circuit, whereby remaining light sources in the light string operate with current passing through the bypass resistor when the light source is in the second state.

39. (New) The resistor bypass circuit of claim 26 being utilized in AC or DC circuits powered from a power source selected from the list consisting of batteries, step down transformers, AC utility power, or converters from AC to DC or DC to AC power, pulsed DC, and filtered or unfiltered DC, or partially filtered AC.

40. (New) A method of bypassing an LED light source, having a predetermined resistance to current flow, in a serially connected LED light string having at least one light source, the method comprising the steps of

- a. selecting a bypass resistor with the following characteristics:
 - i. a resistance greater than or equal to the predetermined resistance of said LED light source;
 - ii. the ability to carry all of the current in the light string; and
 - iii. the ability to operate at 100% duty cycle;
- b. inserting said bypass resistor in parallel with said at least one LED light source.

REMARKS

This is a preliminary amendment prior to first office action. The claims are similar in scope to the parent case which has issued as a patent. A terminal disclaimer will be supplied on request.

Copies of letters sent to applicant is attached hereto. The letter writers argues, inter alia, that the declaration submitted in that application lacked the named exhibit. Such exhibit is attached to the declaration filed herewith, which includes many more supporting exhibits.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Michael B. Lasky at (952) 253-4106.

Respectfully submitted,

Hamre, Schumann, Mueller & Larson, P.C.

Customer No. 52835

Date: September 14, 2022

By: /Michael Lasky/
Michael B. Lasky
Reg. No. 29,555
MBL/yik

BLANKROME

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May 20, 2022

Michael B. Lasky, Esq.
Hamre, Schumann, Mueller & Larson, PC
45 South Seventh Street, Suite 2700
Minneapolis, MN 55402

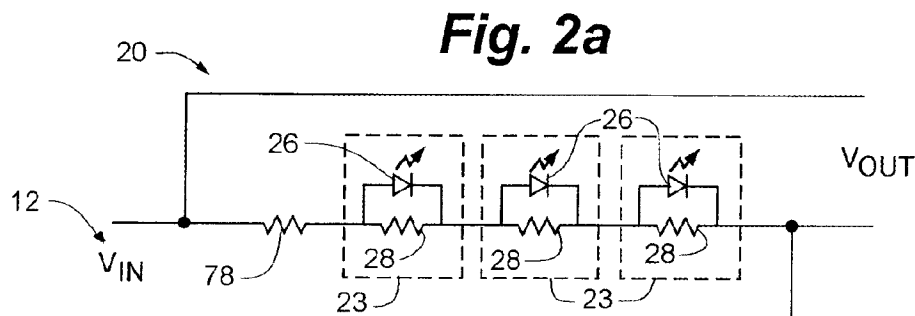
Re: Seasonal Specialties U.S. Patent No. 11,096,252 - Costco
Your Reference: 40617.0576USAA
Our Reference: 157691-00102

Dear Mr. Lasky:

We represent Inliten LLC in intellectual property matters.

We are responding (on behalf of Inliten and Costco) to your letter of May 2, 2022, charging Costco with infringement of U.S. Patent No. 11,096,252 (Seasonal Specialties), based on sales of two light strings supplied to Costco by Inliten. As explained below, U.S. Patent No. 11,096,252 is invalid, and your charge of infringement is therefore unfounded.

U.S. Patent No. 11,096,252 issued from a series of continuation applications, and claims a resistor bypass circuit for a series LED light string in which a bypass resistor 28 is connected in parallel with each LED light 26 to allow current to continue to flow in remaining LEDs if one of the LEDs is burnt out, defective or has a loose connection.



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Michael B. Lasky, Esq.
May 20, 2022
Page 2

During prosecution of the application for U.S. Patent No. 11,096,252, the Examiner rejected the claims (which, as filed, recited a light string with resistive shunts) as anticipated by U.S. Patent No. 5,886,423 (Gershen). In response to the rejection, the claims were amended to recite “the bypass resistor being in circuit and conducting current at all times when current is flowing in the circuit, regardless of whether LED light sources are conducting current therethrough.” You argued that Gershen does not disclose bypass resistors which continuously conduct current, but instead discloses breakdown shunts (SCRs 34), which only conduct when the voltage across the shunt exceeds the breakdown voltage. The Examiner accepted this distinction, allowed the claims, and the patent issued as U.S. Patent No. 11,096,252.

The Examiner erred in allowing U.S. Patent No. 11,096,252 to issue because he did not realize that the broad subject matter recited in the claims, i.e., a light string circuit with resistive shunts, is in the prior art and thus unpatentable, as shown, for example, in prior art U.S. Patent No. 7,963,670 (Yu) and U.S. Patent No. 6,283,797 (Wu).

Yu discloses an LED light string with a resistive bypass shunt 318:

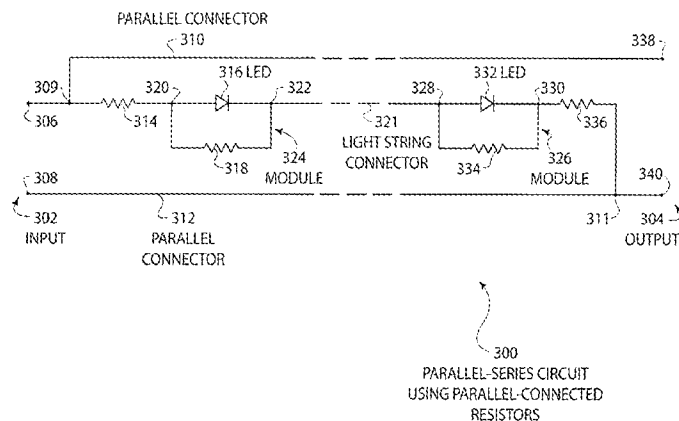


FIG. 3

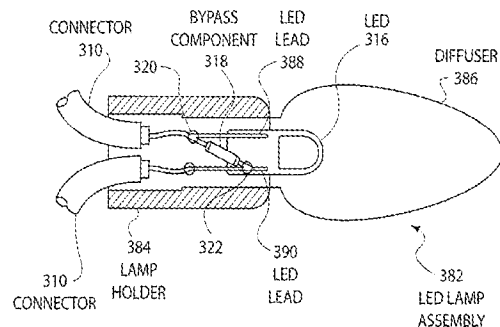


FIG. 4

The USPTO file history reveals that you were aware of Yu (which was buried in an IDS listing 44 prior art patent documents) and attempted to eliminate Yu as prior art by filing an unsolicited Rule 131 declaration swearing behind the July 31, 2006 filing date of Yu – notably, without alerting the Examiner that Yu was the prior art at issue. However, the declaration is deficient in that: (1) Attachment A, referenced in the declaration as allegedly establishing a date of conception of January 12, 2006, was not attached to the declaration; and, in any event (2) the declaration does not establish diligence for the period between the filing date of Yu (July 31, 2006) and the constructive reduction to practice (the filing of the provisional application on Dec. 22, 2006) – indeed, there is a considerable unexplained period void of activity between June 2006 and December 2006, which is fatal to the declaration.

Wu discloses a lamp base for a series light string, with a resistive shunt 5:

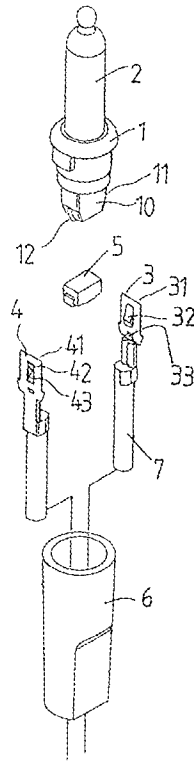


FIG 2

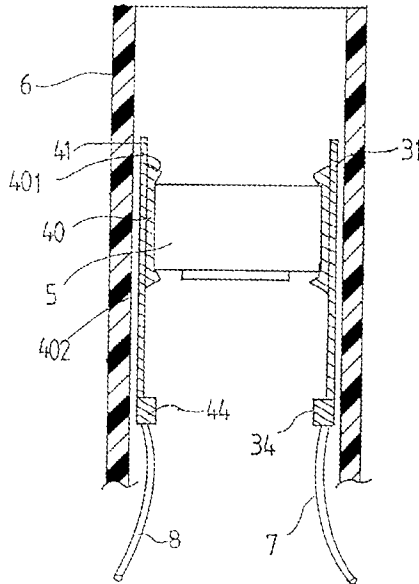


FIG 5

As stated in Wu, col. 2, lines 17-22:

When the lamp series are turned on, the current will flow from wires 7, 8 to connection plug 3, 4 and the conductive sheets 11, 12 under the lamp socket 1 to light on the lamp in the lamp base of the lamp series. If the lamp 2 is burnt out or loose, the resistor sheet 5 will become short to make the lamp in other lamp base units light as the same.

Wu is 102(b) prior art and cannot be overcome by a Rule 131 declaration.

Both Yu and Wu clearly disclose the fundamental feature of the claimed subject matter – i.e., a resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected light sources, and a bypass resistor connected in parallel with at least one of the respective light sources – subject matter that Seasonal Specialties had previously sought to patent in the parent patent applications, but had been denied.

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Michael B. Lasky, Esq.

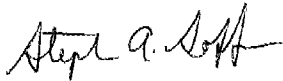
May 20, 2022

Page 4

For the reasons set forth above, we have advised Costco that U.S. Patent No. 11,096,252 is invalid and that your charge of infringement is unfounded.

We trust that you will not pursue this matter further with Costco, and will refrain from interfering with Inliten's customer relations by attempting to enforce the patent against other Inliten customers.

Very truly yours,



Stephen A. Soffen

Tel: (202) 420-4879

Stephen.Soffen@BlankRome.com



J. Mark Smith
(303) 894-4459
jmsmith@fwlaw.com

June 29, 2022

Michael B. Lasky Esq.
Hamre, Schumann, Mueller, & Larson PC
45 S. Seventh St.
Suite 2700
Minneapolis, MN 55402

Re: Rule 408 Communication on Seasonal Specialties' claims of infringement

Dear Mr. Lasky:

I represent LedUp Manufacturing Group, Inc., concerning their intellectual property and related matters. I have received copies of your letters to Home Depot and Fleet Farm dated May 2nd and 4th, 2022, alleging that some of LedUp's products infringe certain patents owned by Seasonal Specialties.

After a preliminary review of the cited patents and LedUp's products listed in your letters we strongly disagree with your allegations of infringement. Some of the cited patents are invalid due to prior art. For the remaining patents, the designs of LedUp's products unambiguously do not infringe the Seasonal Specialties' patents.

Quick summaries of our preliminary analysis and position on the four (4) asserted patents are as follows:

Patent 10,333,252 for Central Shaft Power Connector for Christmas trees.

I am including some pictures of my client's product.

Without addressing any invalidity of this patent, LedUp's products do not infringe this patent. The independent claim recites that the first portion of the connector has:

June 29, 2022

Page 2

“a first central aperture on its lower end and a tubular projection at its upper end, said projection being sized to be received within the first pole section”

LedUp’s design does not have a tubular projection at its upper end and does not have its top portion inserted and received in the pole section. LedUp’s design uses an upper collar to make the electrical connection with a lower collar portion for the tree. The collars fit around the central pole rather than being inserted into the pole section.

A second portion of the connector, as recited in the subject patent’s claim 1 has an upper central projection sized to fit into the bottom aperture of the first or top portion.

“said second portion has an upper central projection sized to be received within the first portion aperture,”

The LedUp connector’s lower portion is a collar without any central projection sized to be inserted into the upper portion’s lower aperture. The interface of the two portions is a flat surface without the insertion of the lower portion’s upper structure into the lower aperture of the upper portion. These essential limitations, which were recited to be the reason for allowance of the subject patent, are not present in LedUp’s products.

Thus, we strongly disagree with Seasonal Specialties allegations of infringement. The LedUp products do not infringe.

Patent 9,544,437, Decorative Light String Switchable between Different Illumination States.

The independent claims 1 and 11 use a first controller or switching circuit to provide power to the illumination element with an initial steady on condition and then progressing over time to a selected pattern of special effects which are repeated.

“a first switching circuit in communication said illumination element for controlling the flow of current to the element, said first circuit containing controller for controlling the power to said illumination element to produce a predetermined special illumination visual lighting effect...when powered up starting from an initial steady-on illuminated state...and then proceeding to other special lighting effects occurring after the steady-on power up and periodically repeating said special lighting effect...”

The Seasonal Specialties patent claims a second controller providing power to the first controller with the ability to turn power on and off or to pulse the power and thereby turn the first controller on and off.

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Page 3

“a second switching circuit in communication with said first circuit, configured to periodically interrupt the flow of current to said first circuit”

The pulse has a frequency such that the pulses interrupt and power on the first controller so as to restart the timing sequence of the first controller repeatedly. The frequency is such that the off signal from the second controller stops the first controller's timer before the steady on condition ends and commences the visual effects sequence. The frequency is sufficiently high to make the illumination element appear to be steady on.

“...at an interruption frequency sufficient to cause the second circuit to reset to its steady-on state without proceeding to said other special lighting effects, and thereby producing a plurality of steady-on illumination pulses in the illumination element.”

The alternative illumination state is accomplished by the second controller providing steady current to the first controller rather than the pulse signal. This allows the first controller's timer to go through the repetitive visual effects that have been programmed into the controller.

LedUp's products do not have two controllers as described in the subject patent to accomplish a steady-on condition or the alternative visual effects. LedUp's illumination elements do not have a special effect after an initial steady-on state that is controlled by another circuit to switch the element on and off at a frequency such that it simulates a steady-on state.

LedUp's products, as identified in your fax to Home Depot of May 2 and May 4, are not infringing the '437 patent.

Patent 10,080,265, Decorative Light String Switchable Between Different Illumination States.

This patent in claims 1-10 continues the claim of the design using two controllers operating as in Pat. No. 9,544,437. Independent Claims 11 and 18, claim a configuration of two (2) LED bulbs wired in parallel but with reverse polarity. There is a switching controller that reverses the DC polarity of the current to the two LED elements, thus energizing one (1) of the parallel LEDs but not the other LED. This switch mechanism in reversing polarity selects between the two (2) alternative illuminations states. .

The claims of this patent are invalid as this design is well known. Specifically U.S. Pat. 8,450,950 discloses all of the elements of independent claims 11 and 18 of the '265 patent and thus anticipates and invalidates those claims. The dependent claims are also anticipated or are not infringed. In addition to the '950 patent U.S. Patent Nos., 8,860,328, 8,941,312, and 9,510,406 disclose all of the elements of the Seasonal Specialties '265 patent. Also there are

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Page 4

prior art patents that disclose the paired LED's with reverse polarity so as to have only some of the LED's illuminated in a particular polarity which would render the claims of the '265 patent obvious.

Patent 11,096,252, Resistive Bypass for Series Lighting Circuit.

The basic design is a series of LED elements, wired with a resistor in parallel such that the current supplying the LED elements continues to flow for all of the LED's in series even if one of the LED elements is broken.

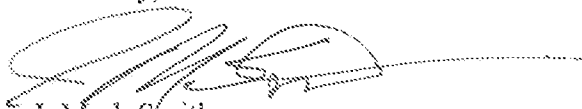
The priority date for this patent is December 22, 2006.

LedUp contends that the relevant claims of this patent are invalid due to prior art disclosures, including a patent owned by LedUp or its related company, Pat. No. 7,963,670 with a priority date of July 31, 2006, but with an earlier date of invention. The LedUp patent discloses, among other configurations, a resistive bypass design with all the elements of the claims in the Seasonal Specialties patent. In addition, there are other prior art patents, including 6,283,797 with a priority date of July 30, 1999 and non-patent publications that disclose the resistive bypass configuration claimed by Seasonal Specialties' patent.

Conclusion

We have addressed all of the patents cited in your letters to Home Depot and Fleet Farm of May 2nd and 4th, 2022. As set forth herein, LedUp's products do not infringe any valid patent claims as alleged. If you have a counter to our analysis or additional facts to consider in evaluating your claims, please forward them at your earliest. If not, we consider the matter closed. In that case we expect that you will notify Home Depot and Fleet Farm that your allegations of infringement are withdrawn.

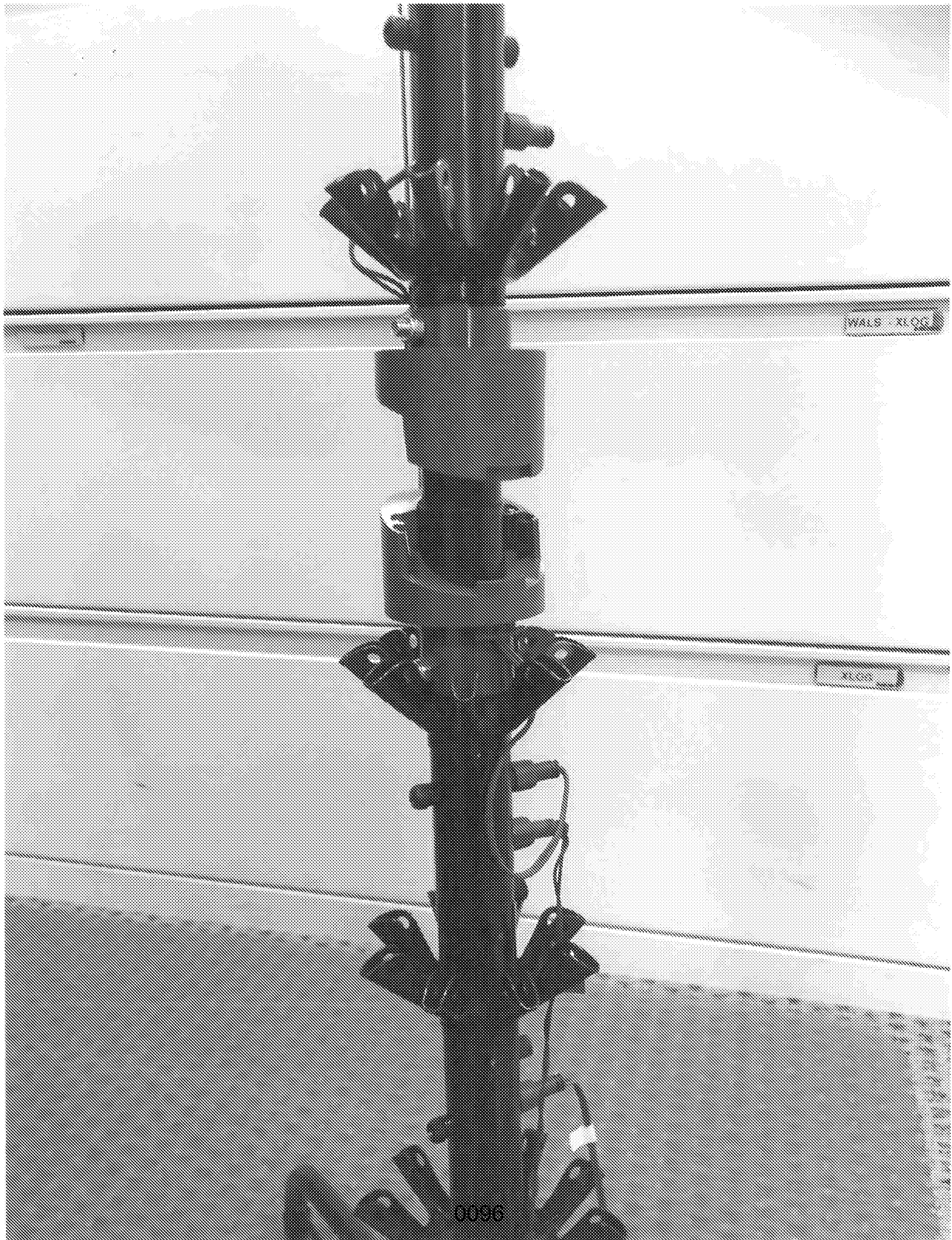
Sincerely,

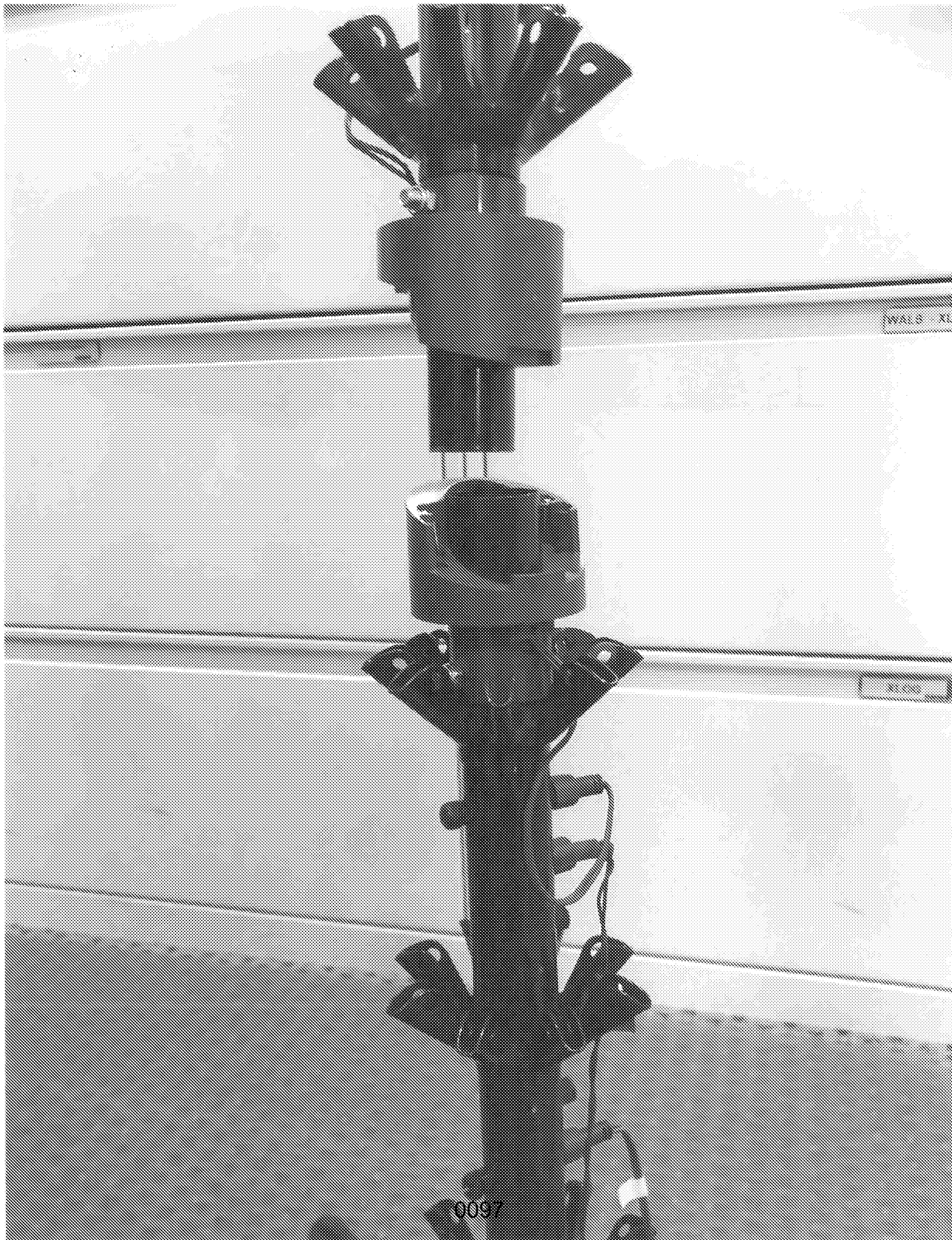


J. Mark Smith
FAIRFIELD AND WOODS, P.C.

JMS:sym

Enclosures





0097



0098

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Altamura	Examiner:	HINES, Anne M.
Serial No.:	17/400338	Group Art Unit:	2879
Filed:	11/25/2019	Docket No.:	40617.0493usc5
Title:	Resistive bypass for series lighting circuit		

**Declaration Of Steven Altamura
Under
37 C.F.R. §1.131**

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

Sir:

1. I am Steven Altamura, an employee of Seasonal Specialties, LLC, the assignee of the above identified patent application and the inventor of the subject matter of the above application.
2. I began work on this invention in 2005 and began documenting my work on paper on January 2006.
3. In 2004 and 2005, it was known that blue and green LEDs had a high failure rate (relative to other colors) and thus multicolored light strings could go dark if there wasn't a solution to this failure rate problem. This problem had to be solved to create a commercially reliable product.
4. My employer was interested in finding a solution to the problem of series light strings, typically used for holiday or ornamental lighting, failing if a single illumination element burning out.
5. At the time, in 2005, most light strings were still using incandescent elements since they were much less expensive than LED elements, but I was working on a resistor by-pass circuit for both LED and incandescent elements simultaneously. I built LED and incandescent prototype light strings at the same

time. It was not known to me, until building the LED prototype, that the LED prototype would function, because it was unknown whether sufficient voltage and current would be applied across the LED if a bypass resistor was in parallel.

6. My first written documentation of this concept is dated January 12, 2006 and written in my own hand. I scanned this document into my computer shortly thereafter. See Exhibit A.
7. I documented in writing further refinements of this bypass concept on Jan 31, 2006 and Feb 27, 2006, showing an illumination element having a bypass resistor in the base of a mini-lamp socket. The socket is used to hold either incandescent or LED elements. See Exhibits B, C and D. I built a prototype of the subject matter of Exhibits A, B, C and D at least as early as 15 Jan 2006, in order to have it reviewed by a customer.
8. I personally hand made a prototype at least as early as 15 Jan 2006, to further test the concept of my invention in the above application.
9. The invention as disclosed in USSN 60/876,868 was submitted to our patent attorneys for drafting into a patent application as early as June 2006.
10. A provisional application according to this invention was filed on 11 Dec 2006 as USSN 60/876,868.

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 are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

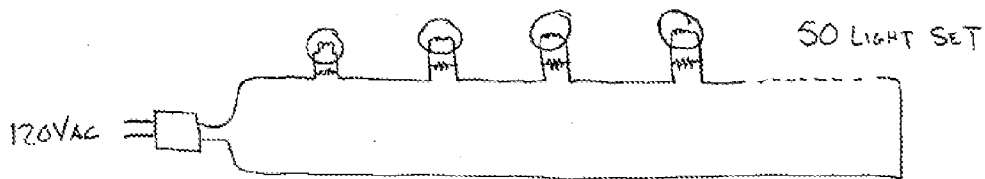
/__Steven Altamura_____/

Steven Altamura

01 September 2022

Exhibit A

LIGHT SET WITH RESISTOR BACKUP
SEASONAL SPECIALTIES LLC
01/12/06 - CONFIDENTIAL



KEY

⊗ = MINI BULB 2.5V, 100mA (NO SHUNT!)

—||— = RESISTOR 45 to 55 Ω - MIN 1/4 WATT (1/2 WATT IS BETTER/COOLER)

Ω = OHM

NOTES

1. RESISTOR IS TO BE ACROSS EVERY BULB & LOCATED INSIDE LAMP HOLDER ACROSS BRASS CONTACTS
2. ELECTRICITY FLOWS THROUGH RESISTORS AT ALL TIMES
3. INPUT CURRENT WILL BE APPROX 150mA (100mA FOR BULBS & 50mA FOR RESISTORS)

Exhibit B

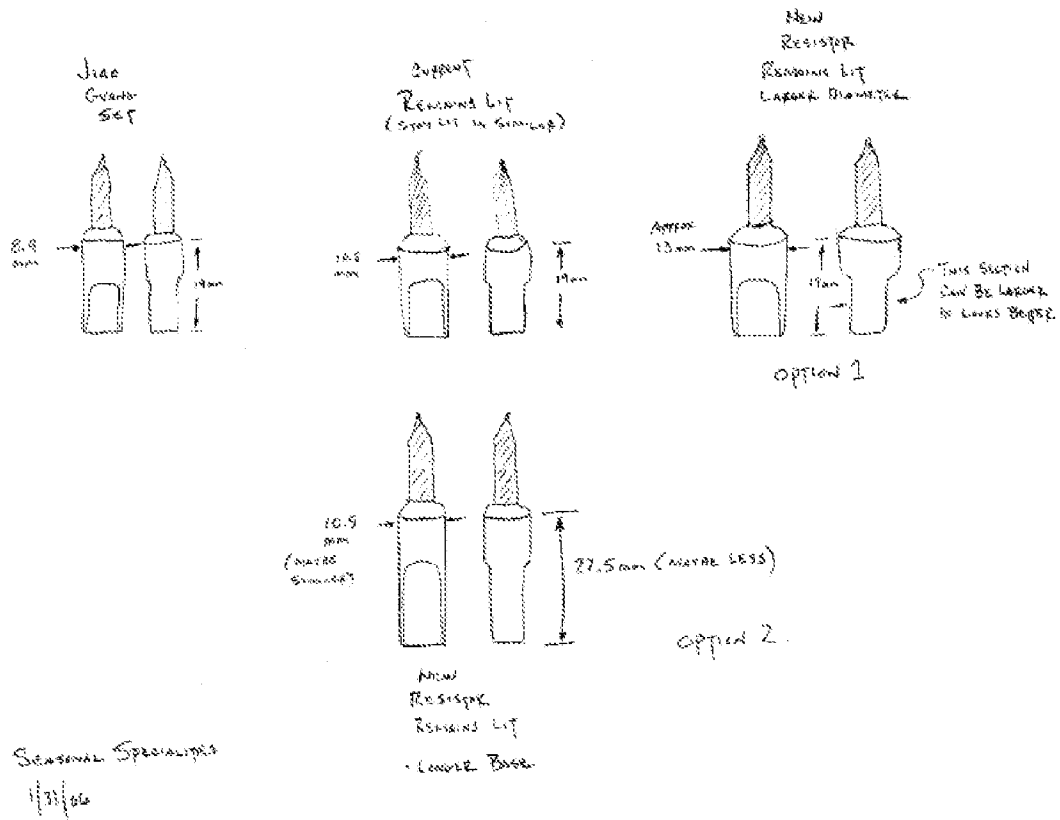


Exhibit C

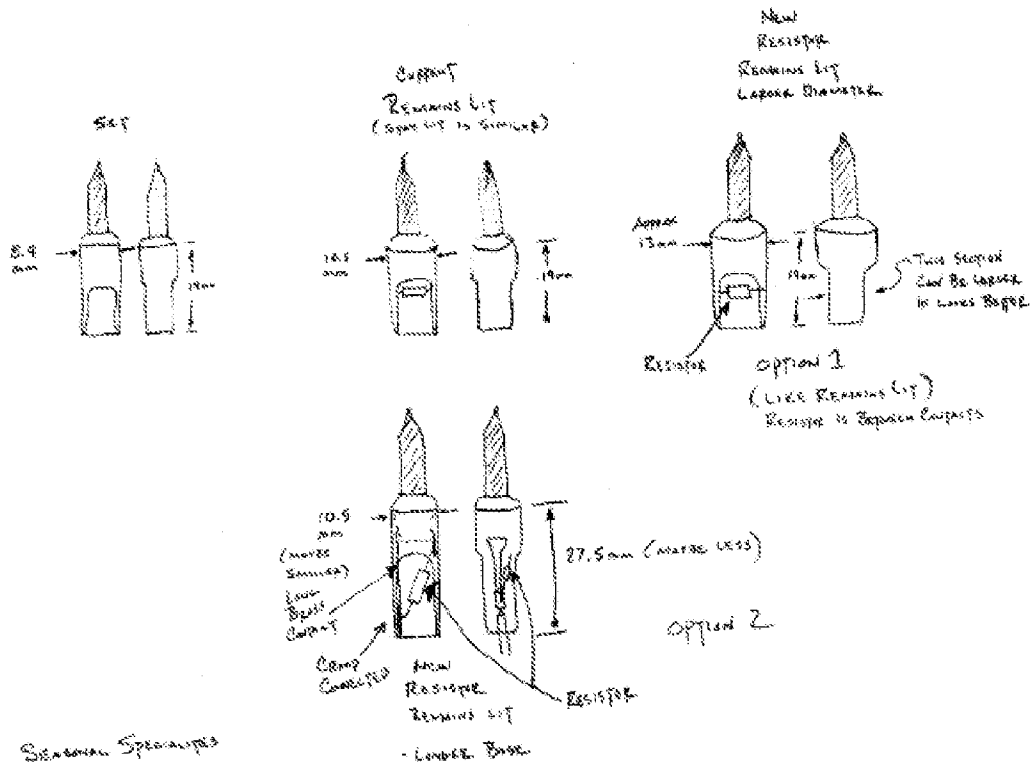
LIGHT SET WITH RESISTOR BEZEL
 Seasonal Specialties LLC
 2/27/06 - Confidential



Key
 Ⓢ = Mini Bulb 2.5V, 100mA (no shunt!)
 --- = Resistor - 47Ω - 1/2 WATT
 Ω = OHM

- Notes
1. Resistor is to be Across Every Bulb & Located Inside Lampholder Across Brass Contacts
 2. Electricity Flows Through Resistors At All Times
 3. Input Current will be approx 150mA (100mA for Bulbs & 50mA for Resistors)
 4. Standard Number of Wires Needed As
No DC is Used
- Rev 2

Exhibit D



Seasonal Specimens
2/27/06

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17400338
	Filing Date		2021-08-12
	First Named Inventor	Steven J. Altamura	
	Art Unit	2879	
	Examiner Name	HINES, Anne M.	
	Attorney Docket Number	40617.0493USC5	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9544437		2017-01-10	Zubas et al.	
	2	10333252		2020-07-28	Altamura	
	3	10080265		2018-09-18	Altamura et al.	
	4	11096252		2021-08-17	Altamura	
	5	8450950		2013-05-28	McRae	
	6	8860328		2014-10-14	McRae	
	7	8941312		2015-01-27	McRae	
	8	9510406		2016-11-29	McRae	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17400338
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First Named Inventor	Steven J. Altamura
Art Unit	2879
Examiner Name	HINES, Anne M.
Attorney Docket Number	40617.0493USC5

9	11096252	2021-08-17	Altamura
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If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
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NON-PATENT LITERATURE DOCUMENTS

Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
1			

If you wish to add additional non-patent literature document citation information please click the Add button

Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

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

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17400338
Filing Date	2021-08-12
First Named Inventor	Steven J. Altamura
Art Unit	2879
Examiner Name	HINES, Anne M.
Attorney Docket Number	40617.0493USC5

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17400338
Filing Date	2021-08-12
First Named Inventor	Steven J. Altamura
Art Unit	2879
Examiner Name	HINES, Anne M.
Attorney Docket Number	40617.0493USC5

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Michael Lasky/	Date (YYYY-MM-DD)	2022-09-14
Name/Print	Michael B. Lasky	Registration Number	29555

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

Privacy Act Statement

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

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

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

Electronic Acknowledgement Receipt

EFS ID:	46613916
Application Number:	17400338
International Application Number:	
Confirmation Number:	6936
Title of Invention:	RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT
First Named Inventor/Applicant Name:	Steven J. Altamura
Customer Number:	52835
Filer:	Michael B. Lasky/Yelena Kase
Filer Authorized By:	Michael B. Lasky
Attorney Docket Number:	40617.0493USC5
Receipt Date:	14-SEP-2022
Filing Date:	12-AUG-2021
Time Stamp:	12:22:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_0493USC5.pdf	1263701	no	5
			5b5139d92c3dc9614899b6f42b6e0f1096518f90		

Warnings:

0110

Information:					
2		SECOND_Preliminary_Amend ment_0493USC5.pdf	94281	yes	5
			e796502331ce61d5c2cfcc624171f58e8d8bd0e		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Claims		2	4	
	Applicant Arguments/Remarks Made in an Amendment		5	5	
Warnings:					
Information:					
3	Affidavit-Rule 131-pre-America Invents Act (First to Invent) ONLY	Affidavit_declaration_Altamura .pdf	191684	no	6
			9af92eb1807a99f4b799e6df8a8afe891f863b25		
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	Letter_Inliten_Costco.pdf	2048956	no	4
			77ff6b607683a2640d09795b77ea8bdd7f0c010a		
Warnings:					
Information:					
5	Miscellaneous Incoming Letter	Letter_LEDup_counsel_infring ement.pdf	3818771	no	7
			e7111b665e14b8d6d7ea74dded30ed3ab168d3ba		
Warnings:					
Information:					
Total Files Size (in bytes):			7417393		

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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 17/400,338		Filing Date 08/12/2021		☐ To be Mailed			
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO											
APPLICATION AS FILED - PART I											
		(Column 1)		(Column 2)							
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 = *				x \$50 =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 = *				x \$240 =					
☐ 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	09/14/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0			x \$50 =		0	
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1			x \$240 =		240	
	☐ Application Size Fee (37 CFR 1.16(s))										
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
								TOTAL ADD'L FEE		240	
		(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 \$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".								/CAROL A BARNES/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".											
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.											

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

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



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :Carol Barnes

Sale Accounting Date:09/20/2022

Sale Item Reference Number
17400338

Effective Date
09/14/2022

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20229J741291163	2201	INDEPENDENT CLAIMS IN EXCESS OF 3	\$240.00	Deposit Account



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

NOTICE OF ALLOWANCE AND FEE(S) DUE

52835 7590 11/01/2022
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

EXAMINER

HINES, ANNE M

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 11/01/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/400,338	08/12/2021	Steven J. Altamura	40617.0493USC5	6936

TITLE OF INVENTION: RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	02/01/2023

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. 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)

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.

52835 7590 11/01/2022
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

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.
17/400,338	08/12/2021	Steven J. Altamura	40617.0493USC5	6936

TITLE OF INVENTION: RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	02/01/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
HINES, ANNE M	2875	445-027000

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/AIA/122 or PTO/SB/122) attached.

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

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

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

2 _____

3 _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document 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. _____



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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/400,338	08/12/2021	Steven J. Altamura	40617.0493USC5	6936
52835	7590	11/01/2022	EXAMINER	
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.			HINES, ANNE M	
45 South Seventh Street			ART UNIT	
Suite 2700			PAPER NUMBER	
Minneapolis, MN 55402-1683			2875	

DATE MAILED: 11/01/2022

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) 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. 17/400,338	Applicant(s) Altamura, Steven J.	
	Examiner ANNE M HINES	Art Unit 2875	AIA (FITF) Status No

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

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

1. ☒ This communication is responsive to Claims filed 9/14/2022.
☐ 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 26-40. 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) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
--	--

/ANNE M HINES/
Primary Examiner, Art Unit 2875

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

Claims 26-40 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent claim 26, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 26, and specifically comprising the limitation wherein a resistor bypass circuit for a lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times across the light sources when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough.

Regarding claims 27-28, 30-32, 38-39, claims 27-28, 30-32, 38-39 are allowable for the reasons given in claim 26 because of their dependency status from claim 26.

Regarding independent claim 29, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 29, and specifically comprising the limitation wherein a resistor bypass circuit for a series lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current

therethrough and further including an LED flashing light source which includes a flashing circuit which causes the entire light circuit to flash.

Regarding independent claim 33, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 33, and specifically comprising the limitation wherein a resistor bypass circuit for a lighting circuit comprising a plurality of serially connected LED light sources and a bypass resistor being connected in parallel with at least one of the respective light sources, said bypass resistor connected across the at least one light sources and being in circuit and conducting current at all times when current is flowing through the circuit regardless of whether the LED light sources are conducting current therethrough and wherein the resistance of the bypass resistor is equal to or greater than the inherent resistance of the light source to which the resistor is attached.

Regarding claims 34-37, claims 34-37 are allowable for the reasons given in claim 33 because of their dependency status from claim 33.

Regarding independent claim 40, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 40, and specifically comprising the limitation wherein a method of bypassing an LED light source, having a predetermined resistance to current flow, in a serially connected LED light string having at least one light source, the method comprising the steps of a. selecting a bypass resistor with the following characteristics: i. a resistance greater than or equal to the predetermined resistance of said LED light source; ii. the ability to carry all of the current in the light string; and iii. the ability to operate at 100% duty cycle; b. inserting said bypass resistor in parallel with said at least one LED light source.

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."

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gershen (US5886423) teaches a resistor bypass for an LED lighting circuit but fails to teach the specific requirements of independent claims 26, 29, 33, and 40.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNE M HINES whose telephone number is (571)272-2285. The examiner can normally be reached on M-F: 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Oluseye Iwarere can be reached on 571-270-5112. 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).

Application/Control Number: 17/400,338

Page 5

Art Unit: 2875

/Anne M Hines/

Primary Examiner

Art Unit 2875

<i>Notice of References Cited</i>	Application/Control No. 17/400,338		Applicant(s)/Patent Under Reexamination Altamura, Steven J.	
	Examiner ANNE M HINES		Art Unit 2875	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-5886423-A	03-1999	Gershen; Bernard	H05B39/105	315/179
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

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

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	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.

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number

Filing Date

First Named Inventor

Art Unit

Examiner Name

Attorney Docket Number

2021-08-12

Steven J. Altamura

40617.0493USC5

U.S.PATENTS

Remove

Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7963670		2011-06-21	Yu	
	2	7666036		2010-02-23	Zou	
	3	9433057		2016-08-30	Janning	
	4	9510423		2016-11-29	Janning	
	5	1024495		1912-04-30	Booth	
	6	1868689		1932-07-26	Brander	
	7	2072337		1937-03-02	Kamm	
	8	2760120		1956-08-21	Fisherman	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

9	3345482		1967-10-03	Shih-Woo Lou	
10	3912966		1975-10-14	Harnden, Jr.	
11	4727449		1988-02-23	Fleck	
12	4985001		1991-01-15	Nagai	
13	5453664		1995-09-26	Harris	
14	5777868		1998-07-07	Gibboney, Jr.	
15	5886423		1999-03-23	Gershen et al.	
16	6084357		2000-07-04	Janning	
17	6283797		2001-09-04	Wu	
18	6323597		2001-11-27	Janning	
19	6344716		2002-02-05	Gibboney, Jr.	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

20	6580182		2003-06-17	Janning	
21	6597125		2003-07-22	Janning	
22	6765313		2004-07-20	Janning	
23	6929383		2005-08-16	Janning	
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25	7166968		2007-01-23	Janning	
26	7178961		2007-02-20	Janning	
27	7261458		2007-08-28	Janning	
28	1510847		1922-04-18	Holder	
29	1865689		1929-06-25	Brander	
30	2152228		1937-05-05	Waters	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
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Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

31	2760120		1955-10-26	Fisherman	
32	7342327		2008-03-11	Janning	
33	6690103		2004-02-10	Uke	
34	6555948		2003-04-29	Noll	
35	4464600		1984-08-07	Kosmatka et al.	
36	4463278		1984-07-31	Kosmatka et al.	
37	3942063		1976-03-02	Winter et al.	
38	3868230		1975-02-25	Krukonis	
39	3461921		1969-08-19	Ackerman	
40	3260888		1966-07-12	Webb	
41	2145911		1939-02-07	Anderson Waldemar et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

42	4629943		1986-12-16	Ponce, Jr.	
43	7851981		2010-12-14	Altamura	
44	9900968		2018-02-20	Altamura	
45	5886423		1999-03-23	Gershen et al.	

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U.S.PATENT APPLICATION PUBLICATIONS

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20030117021		2003-06-26	Janning	
	2	20050174065		2005-08-11	Janning	
	3	20050205971		2005-09-22	Janning	
	4	20180199419		2018-07-12	Altamura	

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First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
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Examiner Signature	/ANNE M HINES/	Date Considered	10/21/2022
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2021-08-12
First Named Inventor	Steven J. Altamura	
Art Unit		
Examiner Name		
Attorney Docket Number	40617.0493USC5	

CERTIFICATION STATEMENT

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

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

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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Signature	/Michael Lasky/	Date (YYYY-MM-DD)	2021-08-12
Name/Print	Michael B. Lasky	Registration Number	29555

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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.
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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.
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Doc code: IDS

PTO/SB/08a (01-22)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 05/31/2024. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number	17400338
Filing Date	2021-08-12
First Named Inventor	Steven J. Altamura
Art Unit	2879
Examiner Name	HINES, Anne M.
Attorney Docket Number	40617.0493USC5

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9544437		2017-01-10	Zubas et al.	
	2	10333252		2020-07-28	Altamura	
	3	10080265		2018-09-18	Altamura et al.	
	4	11096252		2021-08-17	Altamura	
	5	8450950		2013-05-28	McRae	
	6	8860328		2014-10-14	McRae	
	7	8941312		2015-01-27	McRae	
	8	9510406		2016-11-29	McRae	

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Examiner Name	HINES, Anne M.
Attorney Docket Number	40617.0493USC5

	9	11096252	2021-08-17	Altamura
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Art Unit		2879
Examiner Name	HINES, Anne M.	
Attorney Docket Number		40617.0493USC5

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Signature	/Michael Lasky/	Date (YYYY-MM-DD)	2022-09-14
Name/Print	Michael B. Lasky	Registration Number	29555

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Bibliographic Data

Application No: 17/400,338

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged:

/ANNE M HINES/

Examiner's Signature

Initials

Title:

RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/12/2021	445	2875	40617.0493USC5
RULE			

APPLICANTS

Seasonal Specialties, LLC, Eden Prairie, MN,

INVENTORS

Steven J. Altamura, Scarsdale, NY, UNITED STATES

CONTINUING DATA

This application is a CON of 16693552 11/25/2019 PAT 11096252

16693552 is a CON of 15899264 02/19/2018 PAT 10492282

15899264 is a CON of 14840705 08/31/2015 PAT 9900968

14840705 is a CON of 14052124 10/11/2013ABN

14052124 is a CON of 12947488 11/16/2010ABN

12947488 is a DIV of 11962964 12/21/2007 PAT 7851981

11962964 has PRO of 60876868 12/22/2006

FOREIGN APPLICATIONS

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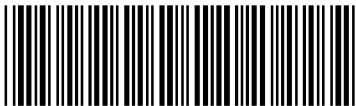
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Issue Classification 	Application/Control No. 17/400,338	Applicant(s)/Patent Under Reexamination Altamura, Steven J.
	Examiner ANNE M HINES	Art Unit 2875

CPC						
Symbol					Type	Version
H05B	/	39	/	041	F	2013-01-01
H05B	/	47	/	23	I	2020-01-01
H01J	/	9	/	00	I	2013-01-01
H01K	/	3	/	00	I	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
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NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 15	
/ANNE M HINES/ Primary Examiner, Art Unit 2875 (Primary Examiner) _____ (Date) 21 October 2022		O.G. Print Claim(s) 26	O.G. Print Figure 7

<i>Issue Classification</i> 	Application/Control No. 17/400,338	Applicant(s)/Patent Under Reexamination Altamura, Steven J.
	Examiner ANNE M HINES	Art Unit 2875

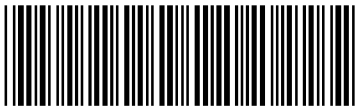
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NON-CLAIMED			
/		/	

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

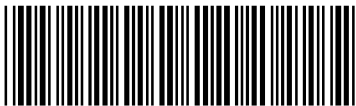
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	15	
/ANNE M HINES/ Primary Examiner, Art Unit 2875	21 October 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	26	7

Issue Classification 	Application/Control No. 17/400,338	Applicant(s)/Patent Under Reexamination Altamura, Steven J.
	Examiner ANNE M HINES	Art Unit 2875

☐ 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	26	12	35												
2	27	13	36												
3	28	14	37												
9	29	7	38												
4	30	8	39												
5	31	15	40												
6	32														
10	33														
11	34														

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 15	
/ANNE M HINES/ Primary Examiner, Art Unit 2875 (Primary Examiner) _____ (Date) 21 October 2022		O.G. Print Claim(s) 26	O.G. Print Figure 7

<i>Search Notes</i> 	Application/Control No. 17/400,338	Applicant(s)/Patent Under Reexamination Altamura, Steven J.
	Examiner ANNE M HINES	Art Unit 2875

CPC - Searched*		
Symbol	Date	Examiner
H05B39/041; 37/036; 47/23	10/21/2022	AMH
H01J9/00	10/21/2022	AMH
H01K3/00	10/21/2022	AMH
F21S4/00	10/21/2022	AMH
F21V19/0005	10/21/2022	AMH
F21W2121/04	10/21/2022	AMH

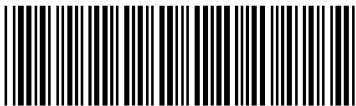
CPC Combination Sets - Searched*		
Symbol	Date	Examiner

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
PE2E SEARCH, see history	10/21/2022	AMH
inventor search in DAV	10/21/2022	AMH
reviewed prosecution history for parent cases	10/21/2022	AMH

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<i>Search Notes</i> 	Application/Control No. 17/400,338	Applicant(s)/Patent Under Reexamination Altamura, Steven J.
	Examiner ANNE M HINES	Art Unit 2875

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
same	as above	10/21/2022	AMH

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	7	(bulb lamp).ab. and (filament with position\$3) and (bypass with resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/06/16 09:46 AM
L2	13	("4629943").URPN.	(USPAT)	OR	OFF	OFF	2017/06/16 09:58 AM
L3	253	(bulb lamp).ab. and (filament with position\$3) and (resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/06/16 10:26 AM
L4	0	("2010/0045186").URPN.	(USPAT)	OR	OFF	OFF	2017/06/16 11:28 AM
L5	5	((("3458756") or ("2044256") or ("3718879")).PN.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2017/06/16 11:41 AM
L6	6	("3458756").URPN.	(USPAT)	OR	OFF	OFF	2017/06/16 11:49 AM
L7	1	"14/840705"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/06/16 02:05 PM
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L9	217	H05B39/041.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/06/16 03:08 PM
L10	170	H01J9/00.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/06/16 03:08 PM
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L12	348	H01K3/00.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/10/12 02:05 PM
L13	106	F21S4/00.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/10/12 02:10 PM
L14	849	F21V19/0005.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/10/12 02:11 PM
L15	520	F21W2121/04.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/10/12 02:11 PM
L16	35	(bulb lamp).ab. and (filament same series) and (bypass with resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:15 AM
L17	18	("3818263" "3836814" "3869631" "4435671").PN. OR ("4629943").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:20 AM
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L20	191	H05B37/036.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:32 AM
L21	349	H01K3/00.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:32 AM
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L23	856	F21V19/0005.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:32 AM
L24	532	F21W2121/04.cpc.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:32 AM
L25	16	(L18 L19 L20 L21 L22 L23 L24) and (bypass with resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:32 AM
L26	0	("2009/0167198").URP N.	(USPAT)	OR	OFF	OFF	2018/04/13 11:33 AM
L27	186	(L18 L19 L20 L21 L22 L23 L24) and (string with light) and (shunt resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 11:36 AM
L28	620	((string tree Christmas) with light).ab. and (resistor)	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 02:44 PM
L29	18	(LED.U/C. same twinkl\$3).ab.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/13 03:27 PM
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		("7250730") or ("5777868") or ("20070164683") or ("7391161") or ("20100207533") or ("20070075646") or ("8044599") or ("20110089852") or ("20090295300") or ("20150233566") or ("20080129213") or ("7166968") or ("20110068701") or ("7777430") or ("20100320499") or ("20120049742") or ("10264637") or ("7732942") or ("20080130288") or ("8016440") or ("20090021185") or ("9295117") or ("8669709") or ("20140036505") or ("9049768") or ("20170202061") or ("7847486") or ("9420644") or ("20170303353") or ("20040246640") or ("8400081") or ("20090261706") or ("20140049189") or ("20180116030") or ("7042116") or ("20080157688") or ("9622316") or ("7976191") or ("9999109") or ("20100148673") or ("8587205") or ("6765313")).PN. or (("20030117022") or ("20020101118") or ("20050225979") or ("20030117021") or ("20020047594") or ("7114830") or ("9253849") or ("9338853") or ("6734678") or ("20160081147") or ("9380657") or ("6710602") or ("20030102869") or ("20140361695") or ("20100045186") or ("20070029937") or					
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		("7679292") or ("20070195527") or ("6900093") or ("20080094837") or ("20020021573") or ("20030011538") or ("7364322") or ("6211626") or ("6528954") or ("20140152185") or ("5343122") or ("20070076426") or ("5957564") or ("20060022611") or ("20030080697") or ("6072280") or ("20030067302") or ("20030076051") or ("4358717") or ("20050170629") or ("7053560") or ("20060103320") or ("20040155609") or ("4870325") or ("6518707") or ("5015918") or ("6292901") or ("8085163") or ("7481570") or ("6830358") or ("20080183081") or ("20050179400") or ("5008595") or ("7276911") or ("6786625") or ("20070018594") or ("20040062041") or ("7453217") or ("4792729") or ("7344275") or ("20040046510") or ("20020101362") or ("6388393") or ("20060193131") or ("20120120649") or ("20100237790") or ("6599000") or ("7946731") or ("5646486") or ("20080094832") or ("8004203") or ("7642501") or ("7661852") or ("20030076281") or ("7436675") or ("6086220") or ("7598686") or ("5663719") or					
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		("6158882") or ("7180250") or ("7067992") or ("6400098") or ("20140218914") or ("9497821") or ("6577080") or ("6166496") or ("6700333") or ("5012157") or ("7323849") or ("20030072145") or ("5345149") or ("20060145636") or ("5686799") or ("20100172127") or ("20060221609") or ("5798619") or ("20070058365") or ("7390115") or ("5894200") or ("20140183946") or ("7274302") or ("20140239832") or ("2924748") or ("5936599") or ("3443106") or ("4290057") or ("20100283391") or ("9706614") or ("6150771") or ("8704462") or ("7656103")).PN.					
L37	3	"10492282"	(US-PGPUB; USPAT)	OR	ON	ON	2021/02/27 02:54 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

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HAMRE, SCHUMANN, MUELLER & LARSON,
P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683



**Courtesy Reminder for
Application Serial No: 17/400,338**

Attorney Docket No: 40617.0493USC5

Customer Number: 52835

Date of Electronic Notification: 11/01/2022

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:
PTOMail@hsm1.com

To view your correspondence online or update your email addresses, please visit us anytime at <https://ppair-my.uspto.gov/pair/PrivatePair>.
If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov or call 1-866-217-9197.

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)

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.

52835 7590 11/01/2022
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

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.

Yelena Kase	(Typed or printed name)
Yelena Kase/	(Signature)
November 15, 2022	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/400,338	08/12/2021	Steven J. Altamura	40617.0493USC5	6936

TITLE OF INVENTION: RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	02/01/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
HINES, ANNE M	2875	445-027000

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/AIA/122 or PTO/SB/122) attached.

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

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(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 Hamre, Schumann,
Mueller & Larson, P.C.
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)

Seasonal Specialties, LLC

Eden Prairie, Minnesota

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government4a. 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. 503478

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 /Michael Lasky/

Date November 15, 2022

Typed or printed name Michael B. Lasky

Registration No. 29,555



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
17/400,338

RECEIPT DATE / TIME
11/15/2022 03:45:43 PM ET

ATTORNEY DOCKET #
40617.0493USC5

Title of Invention

RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6936

FILED BY Yelena Kase

PATENT CENTER # 61182454

FILING DATE 08/12/2021

CUSTOMER # 52835

FIRST NAMED INVENTOR Steven J. Altamura

CORRESPONDENCE ADDRESS -

AUTHORIZED BY Michael Lasky

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Issue_fee_0493usc5.pdf	1	Issue Fee Payment (PTO-85B)	3888 KB

Warning: The attached file contains comments or annotations. Comments are not recommended and may cause processing problems with the document.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Issue_fee_0493usc5.pdf	BC8D20D9FA6B56D9081D5E8BF1B4011AD5C974E068AFC0F2 E5DC57660DD806ED4523630688BACD3967F737F2EC5C2B488 ED531DF2F3D040DED395520F36ED7EF

0154

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 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.



ELECTRONIC PAYMENT RECEIPT

APPLICATION #
17/400,338

RECEIPT DATE / TIME
11/15/2022 03:45:43 PM ET

ATTORNEY DOCKET #
40617.0493USC5

Title of Invention

RESISTIVE BYPASS FOR SERIES LIGHTING CIRCUIT

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 6936

FILED BY Yelena Kase

PATENT CENTER # 61182454

AUTHORIZED BY Michael Lasky

CUSTOMER # 52835

FILING DATE 08/12/2021

CORRESPONDENCE
ADDRESS -

FIRST NAMED
INVENTOR Steven J. Altamura

Payment Information

PAYMENT METHOD
CARD / 1021

PAYMENT TRANSACTION ID
E2022AEF46264552

PAYMENT AUTHORIZED BY
Yelena Kase

PRE-AUTHORIZED ACCOUNT
503478

PRE-AUTHORIZED CATEGORY
37 CFR 1.20 (Post Issuance fees)

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2501	UTILITY ISSUE FEE	600.00	1	600.00
TOTAL AMOUNT:				\$600.00

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 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

0156

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.



APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/400,338	12/20/2022	11533794	40617.0493USC5	6936

52835 7590 11/30/2022

HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
Minneapolis, MN 55402-1683

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 20 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 Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

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