PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S DEPARTMENT OF COMMERCE

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:

☒ Practitioners associated with Customer Number: 00110

OR

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

Name	Registration Number	Name	Registration Number

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

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

☐ The address associated with Customer Number:

OR

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

Assignee Name and Address: Streamlight, Inc.
30 Eagleville Road
Eagleville, PA 19403

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

SIGNATURE of Assignee of Record

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

Signature		Date	4-19-17
Name	Raymond L. Sharrah	Telephone	610-631-0600
Title	President & CEO		

Parhelion, Inc.
EXHIBIT
1002

Privacy Act Statement

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

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

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

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Streamlight, Inc.

Application No./Patent No.: _____ Filed/Issue Date: _____

Titled: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

Streamlight, Inc., a corporation

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

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

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

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

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

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

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

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

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

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

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

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

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

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

Signature	Date 4-19-17
Raymond L. Sharrah	President & CEO
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

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

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

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

ASSIGNMENT

WHEREAS, Raymond L. SHARRAH, Thomas D. BORIS and Donald J. KEELEY, hereinafter individually and collectively referred to as ASSIGNOR, are the named inventors of an invention entitled: **PORTABLE LIGHT WITH PLANE OF LASER LIGHT**, described and claimed in an application for Letters Patent of the United States that was first signed by the below inventors on or about the day and month indicated below and bears the attorney docket number above; and

WHEREAS, STREAMLIGHT, INC., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and engaged in business at 30 Eagleville Road, Eagleville, PA United States 19403-3996, hereinafter referred to as ASSIGNEE, is desirous of acquiring said invention and any and all applications for Letters Patent and any and all Letters Patent of the United States and foreign countries that may be issued therefor;

NOW, THEREFORE, the parties hereto, intending to be legally bound, agree that, in consideration of good and valuable consideration paid to ASSIGNOR by ASSIGNEE, the receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and set over and hereby does sell, assign and set over, unto ASSIGNEE, its successors and assigns, his or her entire right, title and interest for, to and within the United States and all foreign countries, in and to the aforesaid invention and the application identified above, including any and all provisional applications, continuations, divisionals, continuations-in-part, reissues and re-examinations thereof, and in and to any and all Letters Patent that may issue therefor in the United States and in any and all foreign countries (including related rights such as utility model registrations, inventors' certificates and the like). In addition, ASSIGNOR has sold, assigned and set over and hereby does sell, assign and set over, unto ASSIGNEE, its successors and assigns, the right to file patent applications as applicant, to claim priority in any and all foreign applications, including applications filed under the Patent Cooperation Treaty, to the above-referenced application and any and all provisional, continuation, divisional, and continuation-in-part applications for the invention, and hereby consents to and authorizes the filing of any and all such applications.

And ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States to ASSIGNEE, it successors and assigns, as the owner of all right, title and interest therein.

And for said consideration, it is hereby covenanted and agreed that at the request and expense of ASSIGNEE, its successors and assigns, ASSIGNOR will execute any further papers and do such other acts and things as may be necessary and proper to permit ASSIGNEE, its successors and assigns, to file, file as applicant, procure and enforce Letters Patent for said invention in the United States and in such foreign countries as ASSIGNEE, its successors and assigns may elect, and vest the full title thereto in ASSIGNEE, its successors and assigns.

ASSIGNMENT

IN WITNESS WHEREOF, this Assignment has been executed on the day and month indicated below.

Date: 4-19-17 By: _____
Raymond L. SHARRAH

Date: 4/19/17 By: _____
Thomas D. BORIS

Date: 4/19/2017 By: _____
Donald J. KEELEY

COMMONWEALTH OF PENNSYLVANIA :
:
COUNTY OF MONTGOMERY :

Before me, the undersigned, a notary public, in and for the county aforesaid, on this 19th day of April, 2017, personally appeared Raymond L. SHARRAH, Thomas D. BORIS and Donald J. KEELEY, to me known to be the person described in and who executed the foregoing instrument and who acknowledged that he executed the same as his free act and deed and desired the same to be recorded as such.

_____
Notary Public
COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Teresa A. Hall, Notary Public
Lower Providence Twp, Montgomery County
My commission expires August 08, 2019

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. Sharrah et al.
Filer:	Clement Alphonse Berard
Attorney Docket Number:	0096-P06343US01 (SL-727)

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	70	70
UTILITY SEARCH FEE	2111	1	300	300
UTILITY EXAMINATION FEE	2311	1	360	360
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	10	40	400
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	1	210	210
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		1340

Electronic Acknowledgement Receipt

EFS ID:	28977367
Application Number:	15492344
International Application Number:	
Confirmation Number:	3062
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. Sharrah et al.
Customer Number:	110
Filer:	Clement Alphonse Berard/Dawn Underwood
Filer Authorized By:	Clement Alphonse Berard
Attorney Docket Number:	0096-P06343US01 (SL-727)
Receipt Date:	20-APR-2017
Filing Date:	
Time Stamp:	14:02:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1340
RAM confirmation Number	042117INTEFSW00000317041406
Deposit Account	041406
Authorized User	Dawn Underwood

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

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ADS.pdf	1823282 9f9db4c73e9781985532a42b72938d446b50124e	no	9
Warnings:					
Information:					
2		STREAMLIGHT-727-APP.pdf	161762 63a3dd2369e6e4af83460c53e155dfb3a4610e6b	yes	41

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	33
	Claims	34	40
	Abstract	41	41

Warnings:					
Information:					
3	Drawings-only black and white line drawings	SL-727_Drawings.pdf	678539 6507c6bb89a256c31aac6d21af470ea87121202b	no	14
Warnings:					
Information:					
4	Oath or Declaration filed	Declaration.pdf	145503 0441a6c5b0b87b09ca0d3f2dc80db1b73a5be0ec	no	3
Warnings:					
Information:					
5	Power of Attorney	POA.pdf	156036 1bf42831bea6c6f50be4d3553e0b79e293ada60e	no	2

Warnings:					
Information:					
6	Assignee showing of ownership per 37 CFR 3.73	STATEMENT.pdf	174322 c8567c1c1aa6c36b1802987fd2868f003e9ea1ec	no	3
Warnings:					
Information:					
7	Assignee showing of ownership per 37 CFR 3.73	Assignment.pdf	118473 4b29637f7f8b74782535c019e18ca54672422e977	no	2
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	37919 90ada46ed00749f9df4781164a0d209609cebd1cf	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3295836		

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.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0096-P06343US01 (SL-727)
	Application Number	
Title of Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Raymond	L.	SHARRAH	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	Collegeville	State/Province	PA	Country of Residence	US

Mailing Address of Inventor:

Address 1	258 Zvarick Road		
Address 2			
City	Collegeville	State/Province	PA
Postal Code	19426	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Thomas	D.	BORIS	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	Collegeville	State/Province	PA	Country of Residence	US

Mailing Address of Inventor:

Address 1	30 N. Grange Avenue		
Address 2			
City	Collegeville	State/Province	PA
Postal Code	19426	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Donald	J.	KEELEY	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0096-P06343US01 (SL-727)
	Application Number	
Title of Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT	

City	Emmaus	State/Province	PA	Country of Residence	US

Mailing Address of Inventor:

Address 1	623 West Berger Street		
Address 2			
City	Emmaus	**State/Province**	PA
Postal Code	18049	**Country**	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

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

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

Customer Number	00110		
Email Address	docketclerk@ddhs.com	Add Email	Remove Email

Application Information:

Title of the Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT		
Attorney Docket Number	0096-P06343US01 (SL-727)	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	14	**Suggested Figure for Publication (if any)**	1C

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.

PTO/AIA/14 (11-15)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0096-P06343US01 (SL-727)
	Application Number	
Title of Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT	

Representative Information:

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

Please Select One:	● Customer Number	US Patent Practitioner	◯ Limited Recognition (37 CFR 11.9)
Customer Number	00110		

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)
	Claims benefit of provisional	62325917	2016-04-21

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

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[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0096-P06343US01 (SL-727)
	Application Number	
Title of Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT	

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.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0096-P06343US01 (SL-727)
	Application Number	
Title of Invention	PORTABLE LIGHT WITH PLANE OF LASER LIGHT	

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.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

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.

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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. ☒

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Country	US	Postal Code	19403
Phone Number	610-631-0600	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:

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.

PTO/AIA/14 (11-15)
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Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

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If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
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Signature:

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NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

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

Signature	/clement a berard/			Date (YYYY-MM-DD)	2017-04-20
First Name	Clement	Last Name	Berard	Registration Number	29613

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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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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 CooperationTreaty.

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.

PORTABLE LIGHT WITH PLANE OF LASER LIGHT

[001] This Application claims the benefit of US Provisional Patent Application No. 62/325,917 entitled "PORTABLE LIGHT WITH LASER" filed April 21, 2016, which is hereby incorporated herein by reference in its entirety.

[002] The present invention relates to a portable light and in particular, to a portable light with an illumination light source and a laser providing a plane of laser light.

[003] Strong and reliable portable lights are important to the safety of personnel who must enter hazardous and/or dangerous locations. Lights intended for use in such locations often have special circuitry to reduce the danger from high temperatures and/or sparks, and/or have special light producing configurations that improve the ability of a user to see while in hazardous locations. Often the users of such lights may be firefighters, police, security, environmental specialists, military and other first responder personnel, as well as military and rescue personnel in such environments, who may risk health and life in such areas.

[004] Such portable lights are used in many environments to provide illumination and to enable personnel to operate in those environments. In certain environments, visibility may be reduced by smoke, particles, fog, steam, mist, rain, snow and/or other matter suspended or floating in the air. Often these kinds of environments may be hazardous and/or dangerous to personnel, and so the reduced visibility created by such environments can increase the level of hazard and/or danger. Lights for use in these environments may include special optical elements that form and/or direct the light beam produced by the light in ways thought to improve their ability to "cut through" the particle-filled air, thereby to improve visibility.

[005] Typically, a bright light is necessary to penetrate such environments, however, such environments tend to reflect light back towards the portable light and thereby can tend to "blind" the personnel using the portable light. Peripheral light is particularly offensive when reflected back. One way to reduce this reflection-induced blinding is to employ a highly collimated beam of light thereby to reduce any peripherally projected light.

[006] Conventionally, lights employ a highly collimating parabolic reflector and an opaque cover, e.g., as by a black opaque area on an incandescent light source, to block peripheral light. Thus the light intensity at the center of the light beam is increased relative to the intensity at the periphery thereof.

[007] An example of such light includes the SURVIVOR® light available from Streamlight, Inc. of Eagleville, Pennsylvania, which produces a high-intensity light formed into a relatively tight spot beam for reducing side reflected light. A recent version of the SURVIVOR® light includes a removable selectable beam modification element, which may be either opaque or colored, that fits into a recess in a solid optical element in a way to improve visibility in certain reduced and/or limited visibility environments, and which is described in US Patent No. 9,488,331 entitled "PORTABLE LIGHT WITH SELECTABLE OPTICAL BEAM FORMING ARRANGEMENT" which was issued November 8, 2016, and is hereby incorporated herein by reference in its entirety.

[008] However, when a light having a highly collimated spot beam is employed in other environments, the absence of peripheral light may be a disadvantage.

[009] With the advent of modern high light output solid state light sources, e.g., light emitting diode (LED) light sources, a parabolic reflector is less efficient because the LED does not emit light relatively evenly over a complete spherical volume as does an incandescent source. Typically, modern LEDs include an integral curved plastic lens so as to produce light relatively evenly over a hemispherical volume. Typically, many modern LED lights employ an optical arrangement in which internal reflection of light within an optical element is utilized to shape a forward projecting collimated light beam. Also typically, a level of peripheral light is provided by light that is directly emitted from the LED and/or by light diffusing elements to redirect light toward the periphery of the light beam. A permanent opaque plate has been employed to block the direct forward projected light from the LED.

[010] However, even with lessening of the negative effect of peripheral light, Applicant believes there is a need for a portable light that allows individuals to better discern the physical features of environments, e.g., structures and objects therein, in a limited visibility environment,

e.g., one in which smoke, mist, particles, fog, steam and/or other matter may be suspended or floating in the air.

[011] Applicant believes there may be a need for a light that may provide improved discernment in a limited visibility environment.

[012] Accordingly, a portable light may comprise: a light body having an illumination light source and a laser light source supported thereby, each source selectively energizable for producing light; and a switch for selectively energizing the white light and/or laser light source. The laser light source may be configured to provide a plane of laser light, so as to create a line of laser light on objects illuminated by the laser light plane. In this regard, the laser light source may include a cylindrical lens to create the light plane. A TIR optical element may also be disposed in front of the white light source for receiving the light produced thereby, and form the white light into a collimated beam of light, the TIR optical element having a recess in a forward face thereof. A selectable beam modification element may be placeable into and removable from the recess in the forward face of the TIR optical element.

[013] Also, a portable light may comprise: an illumination light source and a laser light source supported by a light body and each selectively energizable by a switch for producing illumination light; and the laser light source may include a cylindrical lens for transmitting a plane of laser light.

[014] Accordingly, a portable light may comprise: light body; an illumination light source supported by the light body relatively remotely to a base end thereof, configured to emit illumination light in a predetermined direction and being selectively energizable by a switch for producing illumination light; a laser light source supported by the light body relatively nearer to the base end thereof and being selectively energizable by the switch for producing laser light, wherein the laser light source includes a cylindrical lens configured for transmitting a plane of laser light in substantially the predetermined direction.

[015] Accordingly, a portable light may comprise: a light body; an illumination light source supported by the light body and selectively energizable for producing illumination light, wherein the illumination light source includes a shaped optically clear element having a forward surface through which the illumination light exits; and a laser light source supported by the shaped

optically clear element and selectively energizable for producing laser light, wherein the laser light source includes a cylindrical lens configured for transmitting a plane of laser light in substantially the same direction as the illumination light.

[016] In summarizing the arrangements described and/or claimed herein, a selection of concepts and/or elements and/or steps that are described in the detailed description herein may be made or simplified. Any summary is not intended to identify key features, elements and/or steps, or essential features, elements and/or steps, relating to the claimed subject matter, and so are not intended to be limiting and should not be construed to be limiting of or defining of the scope and breadth of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWING

[017] The detailed description of the preferred embodiment(s) will be more easily and better understood when read in conjunction with the FIGURES of the Drawing which include:

[018] FIGS. 1A and 1B are front and rear perspective views of an example embodiment of a portable light with a laser light source, FIGS. 1C and 1D are front and rear views thereof, and FIGS. 1E and 1F are top and bottom views thereof, respectively;

[019] FIG. 2 is an exploded perspective view of the example portable light of FIG. 1;

[020] FIG. 3 is a cross-sectional view of FIG. 1C;

[021] FIG. 4 is a perspective view of the example beam forming arrangement with a laser light source of FIG. 3;

[022] FIGS. 5A and 5B are first and second end views of the example optical beam forming arrangement with a laser light source of FIG. 4, and FIGS. 5C and 5D are side cross-sectional views of the example optical beam forming arrangement with a laser light source of FIG. 4 and of an alternative embodiment thereof, respectively;

[023] FIGS. 6A, 6B and 6C are side cross-sectional, end and plan views, respectively, of an example laser light source of FIG. 4;

[024] FIG. 7A is a front view of the example light illustrating an alternative position for the laser light source, FIGS. 7B is a front view of the example light with the example optical

element removed, and FIGS. 7C and 7D illustrate alternative mounting of the example laser light source in the example optical element including for rotatability of the example laser light source;

[025] FIGS. 8A and 8B are perspective views of alternative embodiments of the portable light 100 including mounting the example laser light source on the light body thereof at locations that are spaced away from the illumination light source; and

[026] FIG. 9A is a front view of an alternative embodiment including mounting an example laser light source on a flexible stalk that is mounted to the example portable light, and FIGS. 9B and 9C are a perspective view and a cross-sectional view, respectively, of the example laser light source mounted on the flexible stalk.

[027] In the Drawing, where an element or feature is shown in more than one drawing figure, the same alphanumeric designation may be used to designate such element or feature in each figure, and where a closely related or modified element is shown in a figure, the same alphanumerical designation primed or designated "a" or "b" or the like may be used to designate the modified element or feature. Similarly, similar elements or features may be designated by like alphanumeric designations in different figures of the Drawing and with similar nomenclature in the specification. According to common practice, the various features of the drawing are not to scale, and the dimensions of the various features may be arbitrarily expanded or reduced for clarity, and any value stated in any Figure is given by way of example only.

DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[028] FIGS. 1A and 1B are front and rear perspective views of an example embodiment of a portable light 100 with a laser light source, FIGS. 1C and 1D are front and rear views thereof, and FIGS. 1E and 1F are top and bottom views thereof, respectively; FIG. 2 is an exploded perspective view of the example portable light 100 of FIG. 1; and FIG. 3 is a cross-sectional view of the example portable light 100 including an example embodiment of an optical beam forming arrangement 200-300 with laser light source 400 therefor. Portable light 100 includes a body or housing 120 that is configured to have a base 130 upon which light 100 can rest, e.g., on a

horizontal surface, and to have a light source 140 that when energized projects light in a direction substantially perpendicularly to the long axis (e.g., vertical axis) of body 120.

[029] Light 100 preferably, but optionally, includes a clip 150 on light body 120 by which it can be attached (e.g., clipped) to an article of clothing or to equipment or to another object, e.g., a belt or strap or rope or bar, as well as a hanger or loop 155 by which it can be attached (e.g., hung) from an article of clothing or equipment or another object. Hanger 155 is attached to light body or housing 120 by a bracket, e.g., the bracket 152 that supports clip 150, and more specifically, hanger 155 is pivotable on the pivot or hinge pin 154 on which clip 150 pivots on that bracket 152 relative to housing 120.

[030] A switch actuator 160 is provided for selectively energizing and de-energizing illumination light source 140, e.g., white light source 140, and laser light source 400, where the light sources 140, 400 may be energized separately, so that only one source 140, 400 is on at a given time. Preferably switch actuator 160 is at the upper end on body 120 where it can easily be actuated by a finger when light 100 is held in hand or can be pressed when light 100 is resting on a horizontal surface or is attached by clip 150 or hung by loop 155. Also preferably, light sources 140, 400 are proximate the upper end of light body 120.

[031] Light body or housing 120 is preferably a hollow tube 120, e.g., a molded plastic tube, having a receptacle 1b for receiving elements, e.g., elements 142-148, 176, 200, 300 of white light source 140 extending substantially perpendicularly from the upper end of body 120, and having an opening 126 at the upper end thereof for receiving elements, e.g., elements 162-166, of switch actuator 160. A switch boot 162 of switch actuator 160 is attached over an opening 126 in the upper end of housing 120 by a switch ring 164 which is attached to housing 120, e.g., by adhesive or by welding or by another suitable method to sealingly attach boot 162 thereto. A switch spacer 166 is disposed behind switch boot 162 for transmitting a pressing of boot 162 to actuate an electrical switch 172 which is adjacent thereto when LED module assembly 170 is inserted into housing tube 120 through the opening at the base 130 thereof and is fully seated against the upper end thereof.

[032] LED module assembly 170 includes, e.g., a heat sink structure 178 to an upper end of which is mounted electrical switch 172 and to a lower end of which are mounted a pair of spring

contacts 174 for making electrical connections to a battery assembly 180. Heat sink structure 178 is substantially rectangular with two substantially parallel opposing sides thereof having extensions projecting upwardly and downwardly, e.g., to increase the heat sinking area and mass thereof. A preferably integral wall fills the rectangular center of heat sink 178 and thermally connects to all sides thereof and presents a mounting surface substantially in the plane of heat sink 178. Mounted to that mounting surface of heat sink structure 178 is a light emitting diode (LED) 176, which is also an element of illumination light source 140. LED 176 is mounted in a position to direct light substantially outward and away from that surface of heat sink 178 and around a perpendicular to the long axis of housing 120, e.g., into the base of optical element 200, as described below.

[033] Battery assembly 180 includes an inner carrier structure 182 which carries, e.g., a plurality of battery cells (not shown) and provides interconnections therebetween and an outer carrier cover 186. Carrier 182 includes a pair of contacts 184 at its upper end, e.g., accessible through openings in the upper end of carrier cover 186, for making electrical connection to the spring contacts 174 extending from LED module 170. Battery assembly 180 may contain either single use battery cells or rechargeable battery cells. Where battery assembly 180 contains rechargeable battery cells, carrier cover 186 may be permanently attached to inner carrier 182. In that embodiment, battery assembly 180 preferably also provides a pair of contacts at its lower end for making electrical connection to optional connections 134 through battery door 132.

[034] Battery door 132 is hinged by pin 125 engaging a clevis 124 at the base of housing 120 and preferably includes a pair of contacts 134 there through for connecting battery carrier 180 internal to light 100 to an external source of charging power, e.g., a charger base, when light 100 is placed therein for charging rechargeable batteries that may be utilized in light 100. Battery door 132 includes a pivotable clasp 138 for securing battery cover 132 in a closed position in housing 120, and may also include an O-ring, gasket or other seal for sealing the battery door end of housing 120.

[035] White illumination light source 140 may be provided by an LED 176 of LED module assembly 170 in conjunction with elements 142-148, 200, 300. Optical element 200 is a shaped optically clear plastic element 210 that has a polished generally parabolic external side surface 240, a generally wider flat polished forward surface 220, and a shaped narrower rearward

surface 230 that is disposed adjacent to LED 176 of LED module assembly 170. LED 176 may be surrounded by a raised ring sized and shaped to receive the rearward end 230 of optical element 200. Polished side surface 240 may be a generally parabolic surface or other suitably shaped surface to collimate the light produced by LED 176 into a desired beam, e.g., a collimated forward projecting white light beam.

[036] Optical element 200 is covered by a lens 144 and both are retained in the threaded receptacle 122 of housing 120 by a lens ring 142. Preferably Lens ring 142 has threads, e.g., internal threads, that engage complementary threads, e.g., external threads, of receptacle 122 for securing lens ring 142, lens 144 and optical element 200 in housing 120. Preferably, but optionally, an O-ring 146 grommet 146 or other seal 146, may be provided between lens ring 142 and lens 144 to provide a seal thereat and housing 120 may have a second O-ring 148 around outer periphery of receptacle 122 for sealing between lens ring 144 and housing 120.

[037] Preferably, but optionally, a pivotable clip assembly 150 includes a pivotable clip 150c and is attached at a bracket 152 thereof to housing 120 by one or more fasteners 159, e.g., two screws 159. Clip assembly 150 includes the clip 150c which is pivotably mounted to bracket or base 152 by a pivot pin 154, and has hanger or loop 155 that is pivotable by the ends thereof pivotably engaging hinge pin or pivot pin 154 on which clip 155 pivots. Housing 120 may be provided with a pressure relief valve 128, typically a resilient valve 128, disposed in an opening in housing.

[038] FIG. 4 is a perspective view of the example beam forming arrangement 200 of FIG. 3; FIGS. 5A and 5B are first and second end views of the example optical beam forming arrangement 200 with a laser light source 40 of FIG. 4, and FIGS. 5C and 5D are side cross-sectional views of the example optical beam forming arrangement 200 with a laser light source 400 of FIG. 4 and of an alternative embodiment thereof, respectively. Optical element 200 is a shaped optically clear plastic element whose optically clear body 210 has a curved polished side surface 240, a generally wider flat polished forward surface 220, and a narrower rearward shaped surface that is disposed adjacent to LED 176 of LED module assembly 170 as described. Light, typically white light, produced by LED 176 enters optical element 200 through the rearward end 230

thereof, is essentially totally internally reflected therein to form a highly collimated beam of light, and exits optical element 200 at the flat forward exit surface 220 thereof. Thus the totally internally reflective (TIR) optical element 200 serves to redirect the rays of light emitted by LED 176, which are emitted therefrom substantially radially into a substantially hemispherical volume, into substantially parallel rays of light defining a highly collimated beam of light that exits forward surface 220 of optical element substantially parallel to the central axis, e.g., the axis of optical symmetry, thereof.

[039] More specifically, light emitted by LED 176 impinges on and is refracted by the side wall of the rearward cylindrical recess 260 and into the body 210 of optical element 200 wherein it is totally internally reflected (TIR) by external curved surface 240 to exit via the flat forward face 220 thereof as a highly collimated beam. While most of the light entering via the side wall 262 of cylindrical recess 260 is believed to come directly from LED 176, LED 176 is not a true point source and so some rays may be reflected by surface 270 towards side wall 262. Because optical element 200 is highly efficient in collecting and in internally reflecting and collimating the light emitted by LED 176, very little light is emitted toward the periphery of optical element 200.

[040] A substantially cylindrical recess 260 at the rearward end of optical element 200 has a curved convex bottom 270 for refracting light from LED 176 into optical body 210 in a direction towards the bottom 252 of cylindrical recess 250 in the flat forward surface 220 thereof, from which it exits optical element 200. Preferably, the light exiting optical element 200 is diffused through the textured bottom surface 252 of recess 250 to provide peripheral light. The cylindrical recess 250 provided in the flat forward face 220 of optical element 200 in an available embodiment thereof has a flat textured bottom surface 252 so as to diffuse light from LED 176 that impinges upon surface 252 thereby to provide the peripheral light.

[041] Because peripheral light is sometimes desirable and sometimes is not desirable, Applicant provides a selectable beam modification element 300 that enables a user to easily reconfigure portable light 100 to provide the desired level of peripheral light. A removable beam modification element 300, e.g., a removable plug element 300, may be disposed in the cylindrical recess 250 in the forward surface of optical element 200, whereat is can block or otherwise modify

one or more characteristics of the light exiting through surface 252, e.g., which can provide peripheral light. Preferably removable beam modification element 300, e.g., removable plug element 300, has an opaque body or base 310 so as to maximize the peripheral light that it blocks.

[042] It has been found that if the peripheral light is amber in color, it can be less objectionable and less fatiguing to a user than is white peripheral light, at least in some environments. Accordingly, a removable beam modification element 300, e.g., removable plug element 300, that has a body 310 of transparent or translucent amber colored material, e.g., plastic, may be provided, either in place of and/or in addition to an opaque plug 300, to modify the color or the intensity or both of the peripheral light, e.g., to be amber in color.

[043] One example embodiment of removable beam modification element 300, e.g., removable plug element 300, preferably comprises an opaque cylindrical body 310 having a diameter that is slightly smaller than the diameter of the cylindrical recess 250 in the forward face of optical element 200 and being of lesser thickness than the depth thereof.

[044] Intuitively, one might expect that placing an opaque beam modification element 300 directly in front of LED light source 176 would substantially diminish the light intensity at the center of the light beam emitted by light 100 and would have little effect upon the intensity of peripheral light, which beam modification element 300 does not appear to be in position to affect. Surprisingly, however, Applicant has found that the light intensity of the light near the center of the emitted light beam is not substantially diminished by beam modification element 300 while the intensity of the peripheral light is substantially diminished or otherwise modified.

[045] Optical element 200 may include on optical body 210 thereof one or more orientation defining features 212, e.g., one or more projections 212, that may engage one or more corresponding orientation features, e.g., one or more recesses, in the housing 120, 122 into which optical element 200 is placed. Where the orientation of optical element 200 in housing 120, 122 is desired to be a particular orientation, then orientation features 212 may be arranged in a non-symmetrical pattern.

[046] Selectable beam modification element 300 is preferably of a size and shape corresponding to that of the recess 250, preferably a cylindrical recess, e.g., recess 250, in the forward face of optical element 200 so that it can easily be placed into that recess and can easily be

removed from that recess, thereby to reconfigure portable light 100 to produce a lesser and a greater level of peripheral light. Typically, and preferably, the base of selectable beam modification element 300 may be a cylindrical disk having a diameter that is slightly less than that of the cylindrical recess of optical element 200, and having a thickness (or length) that may be the same as, less than or greater than the depth of the cylindrical recess.

[047] Preferably, but optionally, removable beam modification element 300 may have a raised gripping member 320, e.g., a raised ridge 320 or a sphere 320 on a short post, so that removable beam modification element 300 may easily be gripped and removed from the cylindrical recess 250 in optical element 200.

[048] Selectable beam modification element 300 may be removably retained in the recess 250 of optical element 200 in any one or more of a variety of different arrangements. For example, selectable beam modification element 300 may be removably retained in the recess of optical element 200 by friction, or may have a resilient periphery that contacts the inner surface of the recess 250 in optical element 200, or may be of a resilient material and of a diameter to contact the inner surface of the recess 250 in optical element 200, or may have an O-ring in a peripheral groove that contacts the inner surface of the recess 250 in beam modification element 300, or may be retained by pressure where the difference between the diameters of selectable beam modification element 300 and the recess 250 are small. In the illustrated embodiment, selectable beam modification element 300 is retained by a cover provided by lens 10 and lens ring 11, however, a cover of a different form, e.g., a press in or snap in cover, may also be employed.

[049] Further, selectable beam modification element 300 may be opaque or may be transparent or translucent and of any desired color, or plural different beam modification elements 300 may be provided with light 100. For example, selectable beam modification element 300 may be of a transparent amber colored material so that the peripheral light is amber in color which is believed to be less fatiguing when reflected by smoke or other particulates in an environment. The intensity of the peripheral light is directly related to the light transmissibility of the material from which selectable beam modification element 300 is made, and so the material employed may be selected to provide a desired level of peripheral light intensity. Further, selectable beam modification element 300 may be of materials of other colors, e.g., red, blue, green, yellow and the

like, as may be desired for coloring the peripheral light for a given environment and/or preference, or for merely distinguishing by its color one light 100 from another light 100.

[050] As a result of selectable beam modification element 300 being removably retained in optical element 200, portable light 100 is easily configurable and reconfigurable by a user to produce a beam of light having a lesser peripheral light intensity or a greater peripheral light intensity, as well as to configurations producing peripheral light of different colors and/or intensities.

[051] In addition, because white light is sometimes not desirable, Applicant also provides laser light source 400 that may be configured to provide a plane of laser light to illuminate objects in a reduced visibility environment, such as a smoke-filled room. FIG. 6A is a side cross-sectional view of the example laser light source 400, and FIGS. 6B and 6C are an end view and a plan view, respectively, of the laser light source 400 showing the light plane 450. Laser light source 400 includes a laser emission element 410, a laser lens assembly 420 and a lens supporting element 430 in which is disposed a cylindrical lens 440.

[052] The laser light source 400 may include a cylindrical lens 440 for receiving light from a laser emission element 402, such as a red laser diode, and for transmitting the received light as the plane of laser light 450. The laser light source 400 may include a registration feature 434 on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens 440. In particular, the registration feature 434 may have an axis oriented perpendicular to the longitudinal axis of the cylindrical lens 440 whereby the plane of laser light 450 is substantially parallel to the flat surface of registration feature 434.

[053] The laser light source 400 may be mounted to the flat forward exit surface 220 interior to the optical element 200, e.g., in a recess 280 therein. One might also expect that placing the laser light source 400 in the path of LED light source 176 would substantially diminish the light intensity of the white light beam emitted by light 100. Surprisingly, however, Applicant has found that the light intensity of the light of the emitted white light beam is not substantially diminished by the presence of laser light source 400 in the recess 280 of TIR optical element 200,

210. Perhaps the light from LED 176 traveling in TIR optical element is reflected at the interface of recess 280 to remain within optical element 280 until it exits at flat front surface 220.

[054] In an example laser light source 400, the laser assembly 410 includes a sleeve or housing 416 that supports a laser emitting element 412 on an electronic circuit board 414 to emit laser light toward laser lens assembly 420. Laser lens assembly 420 includes lenses and baffles, such as first focus lens 422 and second focus lens 424 with a baffle 426 therebetween, so as to form the laser beam from emission element 412 into a tightly focused spot beam. Typically, one or more electrical wires exit at the rear of housing 416 for providing electrical connections for energizing laser emitting element 412.

[055] A cylindrical lens supporting element 430 is disposed at the forward end of laser assembly 410 for supporting a cylindrical lens 430 in a lens seat 432 therein and has an aperture 436 through which the plane 450 of laser light exits laser light source 400. Lens seat 432 seats cylindrical lens 430 in a predetermined orientation relative to the flat registration feature 434 on the exterior surface of lens support 430 and laser light source 400 so that the orientation of the plane 450 of laser light emanating from cylindrical lens 440 and laser light source 400 is in a predetermined orientation relative to registration feature 434. Lens support 430 has a lens cup at the rearward end thereof into which laser lens assembly 420 is disposed, thereby to predetermine the relative positions thereof so that the exit of lenses 420, 422, 424 is closely adjacent to cylindrical lens 440 and to reduce the overall length of laser light source 400.

[056] In the example illustrated, cylindrical lens 440 is seated in lens seat 432 of support 430 so that its longitudinal axis is perpendicular to the registration feature 434 so that the plane 450 of laser light exiting cylindrical lens 440 is substantially parallel to the flat surface of registration feature 434.

[057] Consequently, because the orientation of the plane 450 of laser light emitted from laser light source 400 is in a predetermined orientation relative to registration feature 434 thereof, the mounting of laser light source 400 in light 100 can be in a predetermined orientation relative to light 100. In the example illustrated, with light 100 resting on a horizontal surface on its base 130 so that its longitudinal axis is vertical, the flat registration feature of recess 280 of TIR optical element 200 is substantially horizontal, whereby the flat registration feature 434 of laser light

source 400 is substantially horizontal as is the plane 450 of the laser light emitted therefrom. With the plane 450 of laser light being substantially horizontal, it is likely to illuminate substantially vertical features, e.g., walls, doorways, posts and openings in the floor. A user of light 100 could move light 100, e.g., by rotating its longitudinal axis away from vertical, so as to change the orientation of laser light plane 450 to a different, e.g., non-horizontal, orientation where it may better define physical features, objects and structure in a reduced visibility environment.

[058] While laser light source 400 is illustrated as projecting a plane 450 of laser light outwardly in a direction that is generally transverse to the longitudinal axis of housing 120, laser light source 400 may be angled such that the plane 450 of laser light is substantially parallel to the axis at which light is emitted by illumination light source 140 or may be angled, e.g., downwardly, to diverge from the illumination light. The latter is thought to make it easier for a user to discern objects in certain reduced vision environments, as is the embodiments wherein laser light source 400, and the plane 450 of laser light therefrom, may be rotated by a user.

[059] The plane 450 of laser light may also be referred to as a line of laser light, e.g., because it appears as a line on objects upon which it impinges and/or because the laser module 400 may be described as providing a line of laser light and/or may be employed to provide a line of laser light. The laser light from laser module 400 appears as a line, e.g., as viewed in FIG. 6B, and appears as a triangular plane, e.g., as viewed in FIG. 6C.

[060] FIG. 7A is a front view of the example light 100 illustrating an alternative position for the laser light source 400, FIG. 7B is a front view of the example light 100 with the example optical element 200 removed to render a portion of the interior thereof visible, and FIGS. 7C and 7D illustrate alternative mounting of the example laser light source 400 in the example optical element 200 including for rotatability of the example laser light source 400. Therein, laser light source 400 is supported by optical element 200 in a position that is between recess 250 for beam modification element 300 and actuator 160, e.g., such that the laser light source 400 is above recess 250 for beam modification element 300 when light 100 is resting with its base 130 on a surface, or when it is hanging by hanger or loop 150. Otherwise portable light 100 is substantially as previously described.

[061] With the optical element 200 and laser light source 400 removed as illustrated in FIG. 7B, a portion of the interior of light 100 is visible. LED light source 176 is supported by LED module assembly 170 and above LED 176 is seen an electrical circuit board 460 that is, e.g., also supported by module assembly 170, has connections 464 to the source of electrical power for laser light source 400, and has an arrangement of contacts 462 configured for making contact with electrical contacts 472 at or near the rear of laser light source 400. Laser light source 400 may include a small circuit board 470 to which the electrical wires from laser light source connect and which has one or more, e.g., two, electrical contacts 472 extending rearwardly so as to make physical and electrical contact with contacts 462 of circuit board 460 when optical element 200 with laser light source 400 therein is disposed in the receptacle 122 therefor in light housing 120. Preferably, contacts 472 each comprise an electrically conductive spring 472, e.g., a cylindrical or helical or conical spring 472.

[062] Where laser light source 400 is mounted in a fixed orientation in optical element 200, circuit board 460 is a circuit board 460a which has two side-by-side electrical contacts 462a, e.g., one for making contact with a respective one of side-by-side spring contacts 472, e.g., approximately at "3-o'clock" and "9-o'clock" positions on circuit board 470. To allow for tolerance, contacts 462a may be made, and preferably are made, larger than is needed to receive the ends of contact springs 472. In one example embodiment, electrical contacts 462a are wider than the ends of contact springs 472 and have opposing complementary arcuate shapes so as to accommodate any rotational tolerance in the mounting of laser light source 400 and/or circuit board 470 thereon, as well as any alignment tolerances of spring contacts 472.

[063] Where laser light source 400, or at least the end cap 430 thereof that supports cylindrical lens 440, is rotatable in optical element 200, circuit board 460 is a circuit board 460b which has two electrical contacts 462b. One contact 462b is centrally located on circuit board 460B for making contact with one of spring contacts 472 that is centrally located on circuit board 470 and one contact 462b being a ring-shaped contact 462b surrounding the centrally located contact 462b for making contact with a second one of spring contacts 472 that is spaced apart from the central contact 472 by a distance substantially equal to the radius of the ring contact 462b. To allow for tolerance, contacts 462b may be made, and preferably are made, larger than is needed to

receive the ends of contact springs 472. In one example embodiment, both electrical contacts 462B are wider than are the ends of contact springs 472 so as to accommodate any rotational and/or diametrical tolerance in the mounting of laser light source 400 and/or circuit board 470 thereon, as well as any alignment tolerances of spring contacts 472.

[064] In FIG. 7C laser light source 400 is supported by optical element 200 behind the lens 144, similarly to that previously described. In FIG. 7D laser light source 400 is supported by optical element 200 such that the forward portion 430 of laser light source 400, e.g., the cylindrical lens supporting element 430, extends through an opening in lens 144 so as to be graspable by a user's fingers. In this arrangement, both the exterior cylindrical surface of supporting element 430 and the internal cylindrical wall of recess 280 are not flattened or otherwise keyed to fix their relative orientation, but are cylindrical. A key, stop or detent may, however, be provided for limiting the rotation of laser light source 400 in recess 280, e.g., to less than ±60° or less than ±45° or another desired limit.

[065] The protruding forward end 430 may be for rotating either laser light source 400 or for rotating only the forward portion 430 thereof which supports cylindrical lens 440, whereby a user may conveniently change the orientation of the plane of laser light 450 relative to light housing 120 because the cylindrical lens 440, e.g., the longitudinal axis thereof, rotates with the forward portion 430. As a result the plane of laser light 450 may be rotated relative to housing 120 of portable light 100, and thus when the orientation of light 100 is not changed, the plane of laser light 450 may be rotated relative to a location wherein portable light 100 is utilized, whether portable light 100 is held by the user, attached to the user by a clip 150, or placed, e.g., with its base 130, on a surface.

[066] Preferably, the opening in lens 144 in which laser light source 400 resides is sealed, e.g., by an O-ring, grommet, or other sealing element 145, thereby to resist the entry of moisture, dirt and debris into light 100. In addition, it is preferred that a covering lens be provided over the opening 436 in forward portion 430 of laser light source 400 when it is not covered by lens 144, thereby to resist the entry moisture, dirt and debris towards cylindrical lens 440 therein.

[067] FIGS. 8A and 8B are perspective views of alternative embodiments of the portable light 100 including mounting the example laser light source 400 on the light body 120 thereof at locations that are spaced away from the illumination light source 140. Since illumination light source 140 is proximate the upper end of light housing or body 120, laser light source 400 can be at any location on housing 120 that is under illumination light source 140, i.e. closer to base 130 thereof. In general, in this embodiment, it is preferred that laser light source 400 be located away from illumination light source 140, e.g., to be close to base 130, e.g., as close as practicable.

[068] In the illustrated embodiment of example portable light 100, the flared lower portion of housing 120 and base 130 at the bottom end thereof are configured to interface with, e.g., slide into, a standard charging device, e.g., an existing charging device that is compatible with several previous embodiments of the illustrated light (without the laser light source 400) and with several other lights that have been and/or are available. Accordingly, it is desirable to not interfere with the arrangement of that charger interface and so laser light source is preferably disposed in a receptacle 110, 110' that extends from light body 120 above the flared lower part thereof. Were that not the case, laser light source could be located closer to the bottom of light 100, e.g., at base 130.

[069] Accordingly, laser light source 400 is preferred to be provided in a location slightly above the flared part of housing 120 as illustrated, but could be located at any desired location on light body 120 from which the plane 450 of laser light would be projected in the same general direction as is the light from illumination light source 140.

[070] Tubular receptacle 110 may extend forwardly from the same face of light body 120 as does illumination light source 140 thereby to provide illumination light and a plane 450 of laser light in the same general direction. Laser light source 400 may be in a fixed orientation in receptacle 110 so that the orientation of plane 450 of laser light is fixed in a predetermined direction, e.g., generally parallel to the axis of light from illumination light source 140 or diverging therefrom downward towards base 130. Laser light source 400 may have its forward end extending from tubular receptacle 110 so that it may be grasped and rotated by a user, in similar manner to that described herein, to rotate the plane 450 of laser light relative to light body 120.

[071] Alternatively, tubular receptacle 110' may extend forwardly from a side face of light body 120 thereby to provide illumination light and a plane 450 of laser light in the same general direction. Laser light source 400 may be in a fixed orientation in receptacle 110' so that the orientation of plane 450 of laser light is fixed in a predetermined direction, e.g., generally parallel to the axis of light from illumination light source 140 or diverging therefrom downward towards base 130. Laser light source 400 may have its forward end extending from tubular receptacle 110' so that it may be grasped and rotated by a user, in similar manner to that described herein, to rotate the plane 450 of laser light relative to light body 120.

[072] Because light body 120 contains a source of electrical power, e.g., a battery, tubular receptacle 110 or 110' would project forward from body 120 so as to not interfere with the internal battery. Typically, the battery includes a number, e.g., four, of battery cells, that are preferably in a battery carrier in which the battery cells may be permanently contained or may be replaceable. The battery may be single use or may be rechargeable. Typically, for housing the same laser light source 400, receptacle 110 would project further forward from light body 120 than would tubular receptacle 110' to avoid extending into the space provided for the battery.

[073] Typically, receptacle 110 or 110' would be integrally molded with light body 120, and the electrical wires of laser light source 400 would extend upward within light body 120, e.g., along a wall of the battery compartment therein, to connect to LED module assembly 170.

[074] FIG. 9A is a front view of an alternative embodiment including mounting an example laser light source 400 on a flexible stalk 500 that is mounted to the example portable light 100, and FIGS. 9B and 9C are a perspective view and a cross-sectional view, respectively, of the example laser light source 400 mounted on the flexible stalk 500. Therein, laser light source 400 is mounted in a head housing 520 which is at the distal end of a flexible stalk 510 from the end thereof that is mounted to the housing or body 120 of portable light 100. For example, the flexible stalk 510 may be mounted to housing 120 at either location 502A, e.g., of attachment 512A, or at location 502B, e.g., of attachment 512B as illustrated, or alternatively may be mounted to housing 120 at any convenient location.

[075] Flexible stalk 500 may be permanently mounted to housing 120, e.g., by a fastener or other mechanical retainer, or by adhesive, heat or ultrasonic welding, or may be mounted so as to be removable from housing 120, e.g., as by an electrical connector. The mounting of stalk 510 to housing 120 preferably includes a surrounding member 512A or 512B similar to member 522 at the distal end of stalk 510 where housing 540 of head 520 is attached thereto. Preferably the mounting of stalk 500 includes one or more seals to reduce entry of dirt, debris and/or moisture into housing 120 and head 520.

[076] Flexible stalk 500 comprises a flexible stalk member 510 that at one end is mounted to light housing 120 and that has a head housing 520 at the other end thereof, e.g., the end distal from light housing 120, that supports laser light source 400. Flexible stalk 510 may be, e.g., a flexible tube of a helically wound metal or plastic strip and may have a thin plastic coating or sheath on the outer surface thereof. Stalk 510 has a hollow interior through which one or more electrical wires pass to connect laser light source 400 in light head 500 to the source of electrical power therefor which is disposed in housing 120.

[077] Head housing 520 includes an outer housing 540 that preferably is permanently mounted to flexible stalk 510, e.g., as by being swaged thereto, molded thereon, or otherwise mechanically and/or adhesively attached, and housing 540 preferably has a tapered end portion surrounding the distal end of flexible stalk 510, e.g., to provide strain relief when stalk 510 is flexed, bent or formed in use to direct the light from laser light source 400 in a desired direction.

[078] While illumination light source 140 emits illumination light in a substantially fixed predetermined direction relative to the light body 120, in all of the example embodiments the plane 450 of laser light is emitted in substantially the same predetermined direction relative to the light body 120. This is so even though the direction in which the plane 450 of laser light may be changed by flexing stalk 510. In other words, both the illumination light and the plane of laser light are emitted in the same general direction, and substantially the predetermined direction is intended to encompass such changes in direction of the laser light.

[079] Forward end cap 550 that is of an optically transparent material so that the laser light produced by laser light source 400 passes therethrough, e.g., substantially in the direction of the longitudinal axis of light head 520. According to one embodiment, end cap 550 is affixed to

housing 540 and encloses the end cap 430 of laser light source 400 which supports the cylindrical lens 440. In this embodiment, the direction and orientation of the plane 450 of laser light is changed by moving and rotating light head 520 to the extent permitted by the flexibility of stalk 510.

[080] According to another embodiment, end cap 550 also covers and encloses the forward end of laser light source 400, however, end cap 430 that supports the cylindrical lens 440 is affixed to end cap 550 which is rotatable relative to housing 540 of light head 520. Thus, rotating end cap 550 causes the cylindrical lens 440 supported by end cap 430 to be rotated. In this embodiment, the direction and orientation of the plane 450 of laser light is changed by moving and rotating light head 520 to the extent permitted by the flexibility of stalk 510, and by rotating end cap 550 relative to housing 540, thereby to permit more freedom in the orientation of the plane 450 of laser light. Preferably, a seal 552 is provided between end cap 550 and housing 540 to reduce entry of dirt, debris and/or moisture therein.

[081] Optionally, housing 540 and/or end cap 550 may have one or more raised or recessed features, e.g., circumferential grooves and/or ridges, that may assist gripping light head 520 and/or may be aesthetic.

[082] In one example embodiment, laser light source 400 may include a 650 nanometer (red) 5 milliwatt laser module that is available from Sean & Stephen Corporation located in Taipei, Taiwan, R.O.C. or from Laser Max located in Taipei, Taiwan, R.O.C. The lens support 430 may be about 12 mm in diameter, about 8 mm in length, and registration feature 434 may be a flat surface about 5.25 mm radially removed from the central axis of support 430. Cylindrical lens 440 is a rod of glass or plastic, e.g., an acrylic PMMA or optical polycarbonate plastic, having a length of about 7.2 mm and a diameter of about 3.0 mm which provides a line or plane 450 of laser light typically having an angle A of about 1.5 degrees of out of plane dispersion and an angle B of about 120˚ of beam width. Flexible stalk 510 may be of any desired length, e.g., in one embodiment stalk 510 has a length of about 9 inches (about 23 cm), in another a length of about 3-5 inches (about 7.6-13 cm) and in a preferred embodiment stalk 510 has a length of about 1-3 inches (about 2.5-7.6 cm).

[083] In a typical embodiment, TIR optical element 200 and lens 142 may be of an optically clear material, e.g., a glass, polycarbonate, polystyrene, PMMA (acrylic), acrylic, styrene acryl nitride (SAN), or another suitable clear plastic, glass or other suitable optical material. One example embodiment of optical element 200 is about 1.97 inches (about 50 mm) in diameter at its wide flat end, about 0.68 inch (about 17.3 mm) in diameter at its narrower end, and about 1.0 inch (about 25.4 mm) in depth front to rear. Forward cylindrical recess 250 thereof is about 0.70 inch (about 17.8 mm) in diameter and about 0.24 inch (about 6.1 mm) in depth, and rear recess 260 is about 0.67 inch (about 17 mm) in diameter and about 0.46 inch (about 11.7 mm) in depth. An example selectable beam modification element 300 therefor may be of acrylic, styrene or another suitable plastic, and is slightly less than about 0.67 inch (about 17 mm) in diameter and about 0.11 inch (about 2.8 mm) thick.

[084] Another example embodiment of beam modification element 200 is about 1.97 inches (about 50 mm) in diameter at its wide flat end, about 0.65 inch (about 16.5 mm) in diameter at its narrower end, and about 1.0 inch (about 25.4 mm) in depth front to rear. Forward cylindrical recess 250 thereof is about 0.45 inch (about 11.4 mm) in diameter and about 0.3 inch (about 7.6 mm) in depth, and rear recess 260 is about 0.59 inch (about 15 mm) in diameter and about 0.50 inch (about 12.7 mm) in depth. An example selectable beam modification element 300 therefor may be of acrylic, styrene or another suitable plastic, and is slightly less than about 0.45 inch (about 11.4 mm) in diameter and about 0.11 inch (about 2.8 mm) thick.

[085] In the aforementioned examples of optical element 200, side surface 240 has a shape that is a series of arches and curved bottom 270 has a domed or peaked shape as illustrated, one example being rounded and convex, almost parabolic and not quite spherical, and the other example being a curved sided peaked conical dome with concave side curvature.

[086] One example of an LED module and heat sink of the sort suitable for use in light 100 and similar to that described herein is described in US Patent No. 7,883,243 issued February 8, 2011 and entitled "LED FLASHLIGHT AND HEAT SINK ARRANGEMENT" which is assigned to Streamlight, Inc. of Eagleville, Pennsylvania, which is hereby incorporated herein by reference in its entirety.

[087] A portable light 100 may comprise: a light body 120 for receiving a source of electrical power; a white light source 140 supported by the light body 120 and selectively energizable for producing white light; a laser light source 400 supported by the light body 120 and selectively energizable for producing laser light, wherein the laser light source 400 may include a cylindrical lens 440 configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light 450, whereby the laser light source 400 is configured to emit a plane of laser light 450; and a switch 160 supported by the light body 120 for selectively energizing the white light source 140 from the source of electrical power, and for selectively energizing the laser light source 400 from the source of electrical power. The laser emission element may comprise a laser diode. The laser light source 400 may include a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens 440. The registration feature may have an axis oriented perpendicular to the longitudinal axis of the cylindrical lens 440. The white light source 140 may include a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source 140 through the flat forward surface, and wherein the laser light source 400 is supported by the flat forward surface. The switch 160 may be operable so that only one of the white light source 140 and the laser light source 400 is active at a given time. The white light source 140 and the laser light source 400 may emit light in substantially the same direction. The laser light source 400 may be configured: for rotating the plane of laser light 450 relative to the light body 120; or for repositioning the plane of laser light 450 relative to the light body 120. The laser light source 400 may be supported by a shaped optical element 200 of the white light source 140 or may be supported by a receptacle of the light body 120 or may be supported at a distal end of a flexible stalk 500, 510 supported by the light body 120. The laser light source 400 may be configured: for rotating the plane of laser light 450 relative to the light body 120; or for repositioning the plane of laser light 450 relative to the light body 120.

[088] A portable light 100 may comprise: a light body 120 for receiving a source of electrical power; an illumination light source 140 supported by the light body 120 and selectively energizable for producing illumination light; a laser light source 400 supported by the light body

120 and selectively energizable for producing laser light, wherein the laser light source 400 may include a cylindrical lens 440 configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light 450, whereby the laser light source 400 is configured to emit a plane of laser light 450; and a switch 160 supported by the light body 120 for selectively energizing the illumination light source 140 from the source of electrical power and for selectively energizing the laser light source 400 from the source of electrical power. The laser emission element may comprise a laser diode. The laser light source 400 may include a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens 440. The registration feature may have an axis oriented perpendicular to the longitudinal axis of the cylindrical lens 440. The illumination light source 140 may include a shaped optically clear element 200 having a polished curved external side surface and a generally wider flat forward surface whereat the illumination light exits the illumination light source 140 through the flat forward surface, and wherein the laser light source 400 is supported by the shaped optically clear element 200. The switch 160 may be operable so that only one of the illumination light source 140 and laser light source 400 is energized at a given time. The illumination light source 140 and the laser light source 400 may emit light in substantially the same direction. The laser light source 400 may be configured: for rotating the plane of laser light 450 relative to the light body 120; or for repositioning the plane of laser light 450 relative to the light body 120. The laser light source 400 may be supported by a shaped optical element 200 of the illumination light source 140 or may be supported by a receptacle of the light body 120 or may be supported at a distal end of a flexible stalk 500, 510 supported by the light body 120. The laser light source 400 may be configured: for rotating the plane of laser light 450 relative to the light body 120; or for repositioning the plane of laser light 450 relative to the light body 120. The laser light source 400: may be supported by a reflective element of the illumination light source 140 and may be rotatable relative thereto; or may be supported by a receptacle of the light body 120 and may be rotatable relative thereto; or may be supported on a flexible stalk 500, 510 that is attached to the light body 120. The laser light source 400 may further include a support for the cylindrical lens 440, wherein: the support for the cylindrical lens 440 is rotatable relative to the light body 120, whereby a longitudinal axis of the cylindrical lens 440 is rotatable relative to the light body 120; or the laser

emission element and the support for the cylindrical lens 440 are supported on a flexible stalk 500, 510 that is attached to the light body 120, whereby a longitudinal axis of the cylindrical lens 440 is repositionable relative to the light body 120; or the laser emission element and the support for the cylindrical lens 440 are supported on a flexible stalk 500, 510 that is attached to the light body 120 and the support for the cylindrical lens 440 is rotatable relative to the flexible stalk 500, 510, whereby a longitudinal axis of the cylindrical lens 440 is rotatable and repositionable relative to the light body 120.

[089] A portable light 100 may comprise: a light body 120 for receiving a source of electrical power and having a base end; an illumination light source 140 supported by the light body 120 relatively nearer to an end thereof that is remote to the base end thereof, the illumination light source 140 being configured to emit illumination light in a predetermined direction relative to the light body 120 and being selectively energizable for producing illumination light; a laser light source 400 supported by the light body 120 relatively nearer to the base end thereof than is the illumination light source and being selectively energizable for producing laser light, wherein the laser light source 400 includes a cylindrical lens 440 configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane 450 of laser light in substantially the predetermined direction relative to the light body 120, whereby the laser light source 440 is configured to emit a plane 450 of laser light in the same general direction as the illumination light is emitted; and a switch 160 supported by the light body 120 for selectively energizing the illumination light source 140 from the source of electrical power and for selectively energizing the laser light source 400 from the source of electrical power. The laser light source 400 may be: supported in a fixed location that is relatively nearer to the base end of the light body 120 than is the illumination light source 140; or supported on a flexible stalk 510 that is relatively nearer to the base end 130 of the light body 120 than is the illumination light source 140. The laser light source 400 may further include a support for the cylindrical lens 440, wherein: the support for the cylindrical lens 440 is rotatable relative to the light body 120, whereby a longitudinal axis of the cylindrical lens 440 is rotatable relative to the light body 120; or the laser emission element and the support for the cylindrical lens 440 are supported on a flexible stalk 500, 510 that is attached to the light body 120, whereby a longitudinal axis of the cylindrical lens 440 is repositionable relative

to the light body 120; or the laser emission element and the support for the cylindrical lens 440 are supported on a flexible stalk 500, 510 that is attached to the light body 120 and the support for the cylindrical lens 440 is rotatable relative to the flexible stalk 500, 510, whereby a longitudinal axis of the cylindrical lens 440 is rotatable and repositionable relative to the light body 120. The switch 160 is operable so that only one of the illumination light source 140 and laser light source 400 is energized at a given time.

[090] A portable light 100 may comprise: a light body 120 for receiving a source of electrical power; an illumination light source 140 supported by the light body 120 and selectively energizable for producing illumination light, wherein the illumination light source 140 includes a shaped optically clear element 200 having a polished curved external side surface and a flat forward surface through which the illumination light exits the illumination light source 140 in a predetermined direction relative to the light body 120; a laser light source 400 supported by the shaped optically clear element 200 and selectively energizable for producing laser light, wherein the laser light source 400 includes a cylindrical lens 440 configured for receiving light from a laser emission element and for transmitting the received light as a plane 450 of laser light; and a switch 160 supported by the light body 120 for selectively energizing the illumination light source 140 from the source of electrical power and for selectively energizing the laser light source 400 from the source of electrical power. The plane 450 of laser light may be emitted substantially in the predetermined direction relative to the light body 120, whereby the laser light source 400 is configured to emit a plane 450 of laser light in the same general direction as the illumination light is emitted. The laser light source 400 may further include a support 430 for the cylindrical lens 440 that is rotatable relative to the light body 120, whereby a longitudinal axis of the cylindrical lens 440 and the plane 450 of laser light transmitted thereby are rotatable relative to the light body 120. The switch 160 may be operable so that only one of the illumination light source 140 and the laser light source 400 is energized at a given time.

[091] A portable light 100 may comprise: a light body 120 for receiving a source of electrical power; an illumination, e.g., white, light source 140, 176 supported by the light body 120 and selectively energizable for producing light; a laser light source 400 supported by said light body 120 and selectively energizable for producing laser light, the laser light source configured to

emit a plane of laser light 450; a switch 160, 172 supported by the light body 120 for selectively energizing the white light source 140, 176 from the source of electrical power; a TIR optical element 200 having a rearward end disposed in front of the white light source 140, 176 for receiving the light produced thereby, the TIR optical element 200 employing total internal reflection to form light produced by the white light source 140, 176 into a collimated beam of light, the TIR optical element 200 having a recess 250 in a forward face thereof; a selectable beam modification element 300 having a size and shape corresponding to the recess 250 in the forward face of the TIR optical element 200, wherein the selectable beam modification element 300 is placeable into the recess 250 in the forward face of the TIR optical element 200 and is removable from the recess 250 in the forward face of the TIR optical element 200; and means for removably retaining the selectable beam modification element 300 in the recess 250 in the forward face of the TIR optical element 200. The means for removably retaining may include: friction between the selectable beam modification element 300 and the recess 250, pressure urging the selectable beam modification element 300 into the recess 250, a cover, a lens, a lens and ring, a press in cover, a snap in cover, the selectable beam modification element 300 having a resilient periphery, the selectable beam modification element 300 being of a resilient material, the selectable beam modification element 300 having a diameter to contact the inner surface of the recess 250 in the TIR optical element 200, the selectable beam modification element 300 having an O-ring in a peripheral groove, or a combination thereof. The selectable beam modification element 300 may be opaque, or transparent, or translucent, or a color, or a combination thereof. The TIR optical element 200 may comprise: a shaped optically clear plastic element 210 having a polished curved external side surface 240, a generally wider flat forward surface 220, and a narrower rearward shaped surface 230, 260, 270. The TIR optical element 200 may have: a substantially cylindrical recess 260 at the rearward shaped surface thereof, the substantially cylindrical recess 260 having a curved convex bottom or a peaked conical bottom having concave sides for reflecting light through a side wall of the cylindrical recess 260; or a cylindrical recess 250 in the flat forward face thereof having a textured surface at the bottom thereof; or a substantially cylindrical recess 260 at the rearward shaped surface thereof, the substantially cylindrical recess 260 having a curved convex bottom or a peaked conical bottom having concave sides for reflecting light through a side wall of

the cylindrical recess 260, and a cylindrical recess 250 in the flat forward face thereof having a textured surface at the bottom thereof. The portable light 100 wherein: the curved external side surface of the TIR optical element 200 is substantially parabolic; or the narrower rearward surface of the TIR optical element 200 includes a convex parabolic surface; or the curved external side surface of the TIR optical element 200 is substantially parabolic and the narrower rearward surface of the TIR optical element 200 includes a convex parabolic surface or a peaked conical surface having concave sides. The selectable beam modification element 300 includes a plurality of selectable beam modification elements 300, at least one of the plurality of selectable beam modification elements 300 being opaque and at least one of the plurality of selectable beam modification elements 300 being transparent or translucent and being colored. The selectable beam modification element 300 includes a set of a plurality of selectable beam modification elements 300, each of the selectable beam modification elements 300 having an optical property that is different from an optical property of another of the selectable beam modification elements 300.

[092] A portable light 100 may comprise: a light body 120; a white light source 140, 176 selectively energizable for producing light; a laser light source 400 supported by said light body 120 and selectively energizable for producing laser light, the laser light source configured to emit a plane of laser light 450; a switch 160, 172 for selectively energizing the white light source 140, 176; a TIR optical element 200 disposed in front of the white light source 140, 176 for receiving the light produced thereby, and to form the light produced thereby into a collimated beam of light, the TIR optical element having a recess 250 in a forward face thereof; and a selectable beam modification element 300 placeable into and removable from the recess 250 in the forward face of the TIR optical element. The means for removably retaining may include: friction between the selectable beam modification element 300 and the recess 250, pressure urging the selectable beam modification element 300 into the recess 250, a cover, a lens, a lens and ring, a press in cover, a snap in cover, the selectable beam modification element 300 having a resilient periphery, the selectable beam modification element 300 being of a resilient material, the selectable beam modification element 300 having a diameter to contact the inner surface of the recess 250 in the TIR optical element 200, the selectable beam modification element 300 having an O-ring in a

peripheral groove, or a combination thereof. The selectable beam modification element 300 may be opaque, or transparent, or translucent, or a color, or a combination thereof. The TIR optical element 200 may comprise: a shaped optically clear plastic element 210 having a polished curved external side surface 240, a generally wider flat forward surface 220, and a narrower rearward shaped surface 230, 260, 270. The TIR optical element 200 may have: a substantially cylindrical recess 260 at the rearward shaped surface thereof, the substantially cylindrical recess 260 having a curved convex bottom or a peaked conical bottom having concave sides for reflecting light through a side wall of the cylindrical recess 260; or a cylindrical recess 250 in the flat forward face thereof having a textured surface at the bottom thereof; or a substantially cylindrical recess 260 at the rearward shaped surface thereof, the substantially cylindrical recess 260 having a curved convex bottom or a peaked conical bottom having concave sides for reflecting light through a side wall of the cylindrical recess 260, and a cylindrical recess 250 in the flat forward face thereof having a textured surface at the bottom thereof. The portable light 100 wherein: the curved external side surface of the TIR optical element 200 is substantially parabolic; or the narrower rearward surface of the TIR optical element 200 includes a convex parabolic surface; or the curved external side surface of the TIR optical element 200 is substantially parabolic and the narrower rearward surface of the TIR optical element 200 includes a convex parabolic surface or a peaked conical surface having concave sides. The selectable beam modification element 300 includes a plurality of selectable beam modification elements 300, at least one of the plurality of selectable beam modification elements 300 being opaque and at least one of the plurality of selectable beam modification elements 300 being transparent or translucent and being colored. The selectable beam modification element 300 includes a set of a plurality of selectable beam modification elements 300, each of the selectable beam modification elements 300 having an optical property that is different from an optical property of another of the selectable beam modification elements 300.

[093] As used herein, the term "about" means that dimensions, sizes, formulations, parameters, shapes and other quantities and characteristics are not and need not be exact, but may be approximate and/or larger or smaller, as desired, reflecting tolerances, conversion factors,

rounding off, measurement error and the like, and other factors known to those of skill in the art. In general, a dimension, size, formulation, parameter, shape or other quantity or characteristic is "about" or "approximate"whether or not expressly stated to be such. It is noted that embodiments of very different sizes, shapes and dimensions may employ the described arrangements.

[094] Although terms such as "up," "down," "left," "right," "up," "down," "front," "rear," "side," "end," "top," "bottom," "forward," "backward," "under" and/or "over," "vertical," "horizontal," and the like may be used herein as a convenience in describing one or more embodiments and/or uses of the present arrangement, the articles described may be positioned in any desired orientation and/or may be utilized in any desired position and/or orientation. Such terms of position and/or orientation should be understood as being for convenience only, and not as limiting of the invention as claimed.

[095] As used herein, the term "and/or" encompasses both the conjunctive and the disjunctive cases, so that a phrase in the form "A and/or B" encompasses "A" or "B" or "A and B." In addition, the term "at least one of" one or more elements is intended to include one of any one of the elements, more than one of any of the elements, and two or more of the elements up to and including all of the elements, and so, e.g., the phrase in the form "at least one of A, B and C" includes "A," "B," "C," "A and B," "A and C," "B and C," and "A and B and C."

[096] The term battery is used herein to refer to an electro-chemical device comprising one or more electro-chemical cells and/or fuel cells, and so a battery may include a single cell or plural cells, whether as individual units or as a packaged unit. A battery is one example of a type of an electrical power source suitable for a portable device. Other devices could include fuel cells, super capacitors, solar cells, and the like. Any of the foregoing may be intended for a single use or for being rechargeable or for both

[097] Various embodiments of a battery may have one or more battery cells, e.g., one, two, three, four, or five or more battery cells, as may be deemed suitable for any particular device. A battery may employ various types and kinds of battery chemistry types, e.g., a carbon-zinc, alkaline, lead acid, nickel-cadmium (Ni-Cd), nickel-metal-hydride (NiMH) or lithium-ion (Li-Ion) battery type, of a suitable number of cells and cell capacity for providing a desired operating time and/or lifetime for a particular device, and may be intended for a single use or for being

rechargeable or for both. Examples may include a four cell lead acid battery typically producing about 6 volts, volts, a four cell Ni-Cd battery typically producing about 6 volts, a four cell NiMH battery typically producing about 4.8 volts, a four cell NiMH battery producing about 6 volts, or a Li-Ion battery typically producing about the same voltage, it being noted that the voltages produced thereby will be higher when approaching full charge and will be lower in discharge, particularly when providing higher current and when reaching a low level of charge, e.g., becoming discharged.

[098] The term DC converter is used herein to refer to any electronic circuit that receives at an input electrical power at one voltage and current level and provides at an output DC electrical power at a different voltage and/or current level. Examples may include a DC-DC converter, an AC-DC converter, a boost converter, a buck converter, a buck-boost converter, a single-ended primary-inductor converter (SEPIC), a series regulating element, a current level regulator, and the like. The input and output thereof may be DC coupled and/or AC coupled, e.g., as by a transformer and/or capacitor. A DC converter may or may not include circuitry for regulating a voltage and/or a current level, e.g., at an output thereof, and may have one or more outputs providing electrical power at different voltage and/or current levels and/or in different forms, e.g., AC or DC.

[099] A fastener as used herein may include any fastener or other fastening device that may be suitable for the described use, including threaded fasteners, e.g., bolts, screws and driven fasteners, as well as pins, rivets, nails, spikes, barbed fasteners, clips, clamps, nuts, speed nuts, cap nuts, acorn nuts, and the like. Where it is apparent that a fastener would be removable in the usual use of the example embodiment described herein, then removable fasteners would be preferred in such instances. A fastener may also include, where appropriate, other forms of fastening such as a formed head, e.g., a peened or heat formed head, a weld, e.g., a heat weld or ultrasonic weld, a braze, and adhesive, and the like.

[100] As used herein, the terms "connected" and "coupled" as well as variations thereof are not intended to be exact synonyms, but to encompass some similar things and some different things. The term "connected" may be used generally to refer to elements that have a direct electrical and/or physical contact to each other, whereas the term "coupled" may be used generally to refer to elements that have an indirect electrical and/or physical contact with each other, e.g., via

one or more intermediate elements, so as to cooperate and/or interact with each other, and may include elements in direct contact as well.

[101] While the present invention has been described in terms of the foregoing example embodiments, variations within the scope and spirit of the present invention as defined by the claims following will be apparent to those skilled in the art. For example, the laser light source 400 may be configured so that the plane of laser light 450 is substantially parallel to the central axis of the optical element 200 or may be configured so that the plane of laser light 450 diverges from the central axis of the optical element 200 (and from the beam of illumination light, e.g., white light, provided thereby).

[102] The laser light source 400 and/or the cylindrical lens 440 thereof may be configured to be in a predetermined fixed relationship relative to light 100 and optical element 200 thereof, or may be configured to be rotatable with respect to light 100, whereby the orientation of the plane of laser light 450 rotatable. Rotating the plane of laser light 450 relative to light 100 may be provided by optical element 200 being rotatable in light 100, by laser light source 400 being rotatable in optical element 200, or by the longitudinal axis of cylindrical lens 440 being rotatable relative to light 100, or by a combination thereof. In any of the foregoing arrangements, rotation of the one or more elements my be provided by an actuator accessible from outside light 100, e.g., by a rotatable ring, by a lever, by a slidable actuator and the like.

[103] Further, and alternatively, laser light source 400 may be supported in the central region of optical element 200, e.g., within recess 250 thereof. In such alternative arrangement, beam modification element 300 could have a central hole therein so as to be inserted into recess 250 to surround laser light source 400, or could be a permanently installed part of optical element 200, e.g., as a opaque or translucent annular washer in recess 250 thereof. In this alternative arrangement, when laser light source 400 is configured such that the plane 450 of laser light is rotatable, the opening in lens 144 through which laser light source 400 extends would be centrally located which would ease the mounting and removal of lens ring 142 and lens 144, e.g., when installing or removing beam modification element 300.

[104] While a red emitting laser light source 400 is described in an example embodiment, the light produced by the laser light source 400 may be at another wavelength, e.g., at a wavelength of red, or blue, or green, or amber, light. Further, the color of the laser light may be changeable from one color to another, either by replacing a laser light source 400 with a laser light source of another color light, or by providing one or more laser light sources 400 that can be electronically controlled to produce laser light of different colors, e.g., at different wavelengths.

[105] Actuator 160 may be configured to actuate illumination light source 140 and laser light source 400 together, e.g., toggling between both on and both off, or independently, e.g., in a sequential order such as white light, laser light, and white and laser light together, or by being responsive to how actuator 160 is actuated, e.g., by a single actuation, by plural actuations close in time, by an actuation continuing for an extended time, and the like. Alternatively, actuator 160 may include physically separate actuators, e.g., one for illumination light source 140 and another for laser light source 400.

[106] Alternatively, a separate actuator and switch may be provided for laser light source 400, e.g., proximate to or on receptacle 110, 110' therefor and/or proximate to or on head 520 at the end of flexible stalk 510. Flexible stalk 510 may be made relatively short, e.g., about 1-2 inches (about 2.5 - 5 cm), which is sufficient to provide limited user adjustable directionality to the plane of laser light, or it may be relatively longer, e.g., about 8-10 inches (about 20-25 cm), where greater user adjustability is desired, or any intermediate length.

[107] In optical element 200, side surface 240 may have a parabolic, hyperbolic or spherical shape and curved bottom 270 may have the same or a different parabolic, hyperbolic or spherical shape, or surfaces 240, 270 may have another suitable shape.

[108] Hanger or loop 155 may alternatively be rendered pivotable by the ends thereof being disposed in holes in clip 150 or in housing 120, or by the ends or a portion thereof being directly and pivotably attached to housing 120, e.g., by bracket 152.

[109] While certain features may be described as a raised feature, e.g., a ridge, boss, flange, projection or other raised feature, such feature may be positively formed or may be what remains after a recessed feature, e.g., a groove, slot, hole, indentation, recess or other recessed feature, is made. Similarly, while certain features may be described as a recessed feature, e.g., a

groove, slot, hole, indentation, recess or other recessed feature, such feature may be positively formed or may be what remains after a raised feature, e.g., a ridge, boss, flange, projection or other raised feature, is made.

[110] Each of the U.S. Provisional Applications, U.S. Patent Applications, and/or U.S. Patents, identified herein is hereby incorporated herein by reference in its entirety, for any purpose and for all purposes irrespective of how it may be referred to or described herein.

[111] Finally, numerical values stated are typical or example values, are not limiting values, and do not preclude substantially larger and/or substantially smaller values. Values in any given embodiment may be substantially larger and/or may be substantially smaller than the example or typical values stated.

WHAT IS CLAIMED IS:

1. A portable light comprising:

a light body for receiving a source of electrical power;

a white light source supported by said light body and selectively energizable for producing white light;

a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said white light source from the source of electrical power, and for selectively energizing said laser light source from the source of electrical power.

2. The portable light of claim 1 wherein the laser emission element comprises a laser diode.

3. The portable light of claim 1 wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens.

4. The portable light of claim 3 wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens.

5. The portable light of claim 1 wherein said white light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface.

6. The portable light of claim 1 wherein said switch is operable so that only one of said white light source and said laser light source is active at a given time.

7. The portable light of claim 1 wherein said white light source and said laser light source emit light in substantially the same direction.

8. The portable light of claim 1 wherein said laser light source is configured:
for rotating the plane of laser light relative to said light body; or
for repositioning the plane of laser light relative to said light body.

9. The portable light of claim 1 wherein said laser light source is supported by a shaped optical element of said white light source or is supported by a receptacle of said light body or is supported at a distal end of a flexible stalk supported by said light body.

10. The portable light of claim 9 wherein said laser light source is configured:
for rotating the plane of laser light relative to said light body; or
for repositioning the plane of laser light relative to said light body.

11. A portable light comprising:
a light body for receiving a source of electrical power;
an illumination light source supported by said light body and selectively energizable for producing illumination light;
a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

12. The portable light of claim 11 wherein the laser emission element comprises a laser diode.

13. The portable light of claim 11 wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens.

14. The portable light of claim 13 wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens.

15. The portable light of claim 11 wherein said illumination light source includes a shaped optically clear element having a polished curved external side surface and a generally wider flat forward surface whereat the illumination light exits said illumination light source through the flat forward surface, and wherein said laser light source is supported by said shaped optically clear element.

16. The portable light of claim 11 wherein said switch is operable so that only one of the illumination light source and laser light source is energized at a given time.

17. The portable light of claim 11 wherein said illumination light source and said laser light source emit light in substantially the same direction.

18. The portable light of claim 11 wherein said laser light source is configured:
for rotating the plane of laser light relative to said light body; or
for repositioning the plane of laser light relative to said light body.

19. The portable light of claim 11 wherein said laser light source is supported by a shaped optical element of said illumination light source or is supported by a receptacle of said light body or is supported at a distal end of a flexible stalk supported by said light body.

20. The portable light of claim 19 wherein said laser light source is configured:

for rotating the plane of laser light relative to said light body; or

for repositioning the plane of laser light relative to said light body.

21. The portable light of claim 20 wherein said laser light source:

is supported by a reflective element of said illumination light source and is rotatable relative thereto; or

is supported by a receptacle of said light body and is rotatable relative thereto; or

is supported on a flexible stalk that is attached to said light body.

22. The portable light of claim 11 wherein said laser light source further includes a support for said cylindrical lens, wherein:

the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body.

23. A portable light comprising:

a light body for receiving a source of electrical power and having a base end;

an illumination light source supported by said light body relatively nearer to an end thereof that is remote to the base end thereof, said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light;

a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

24. The portable light of claim 23 wherein said laser light source is:

supported in a fixed location that is relatively nearer to the base end of said light body than is said illumination light source; or

supported on a flexible stalk that is relatively nearer to the base end of said light body than is said illumination light source.

25. The portable light of claim 23 wherein said laser light source further includes a support for said cylindrical lens, wherein:

the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body.

26. The portable light of claim 23 wherein said switch is operable so that only one of the illumination light source and laser light source is energized at a given time.

27. A portable light comprising:

a light body for receiving a source of electrical power;

an illumination light source supported by said light body and selectively energizable for producing illumination light, wherein said illumination light source includes a shaped optically clear element having a polished curved external side surface and a flat forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body;

a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

28. The portable light of claim 27 wherein the plane of laser light is emitted substantially in the predetermined direction relative to said light body, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted.

29. The portable light of claim 27 wherein said laser light source further includes a support for said cylindrical lens that is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens and the plane of laser light transmitted thereby are rotatable relative to said light body.

30. The portable light of claim 27 wherein said switch is operable so that only one of said illumination light source and said laser light source is energized at a given time.

ABSTRACT

A portable light may comprise: a light body having an illumination, e.g., white, light source and a laser light source supported thereby, each source being selectively energizable for producing light; and a switch for selectively energizing the illumination light source and/or laser light source. The laser light source is configured to provide a plane of laser light, so as to create a line of laser light on objects illuminated by the plane of laser light. The laser light source may include a cylindrical lens to create the plane of laser light. The plane of laser light may be rotatable relative to the light body. A TIR optical element may also be disposed in front of the illumination light source for receiving the light produced thereby.

FIG.1A

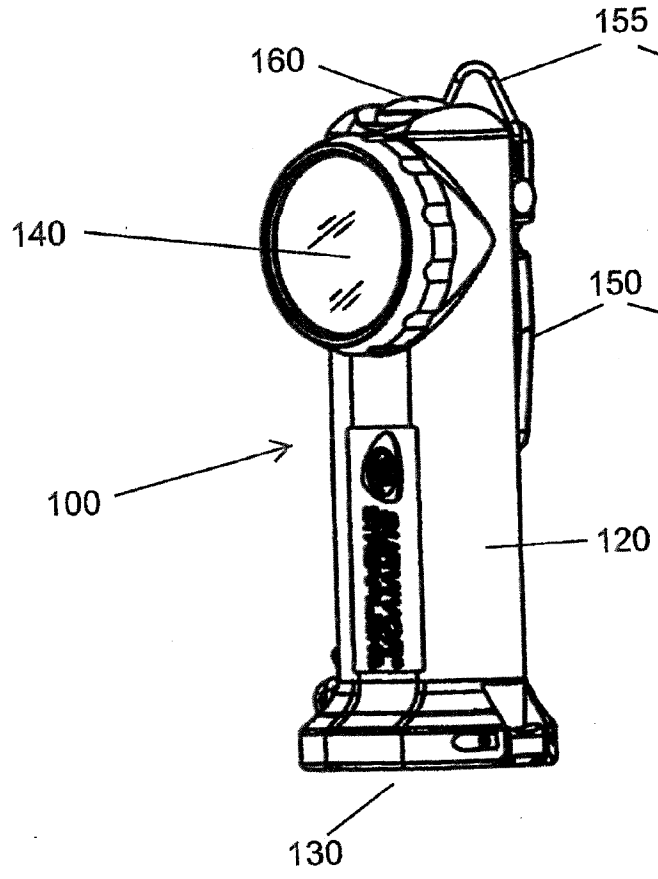
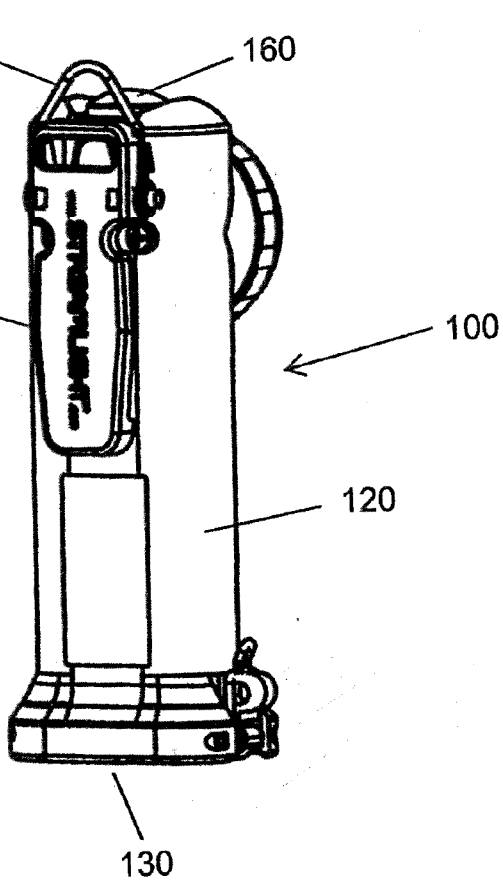


FIG.1B



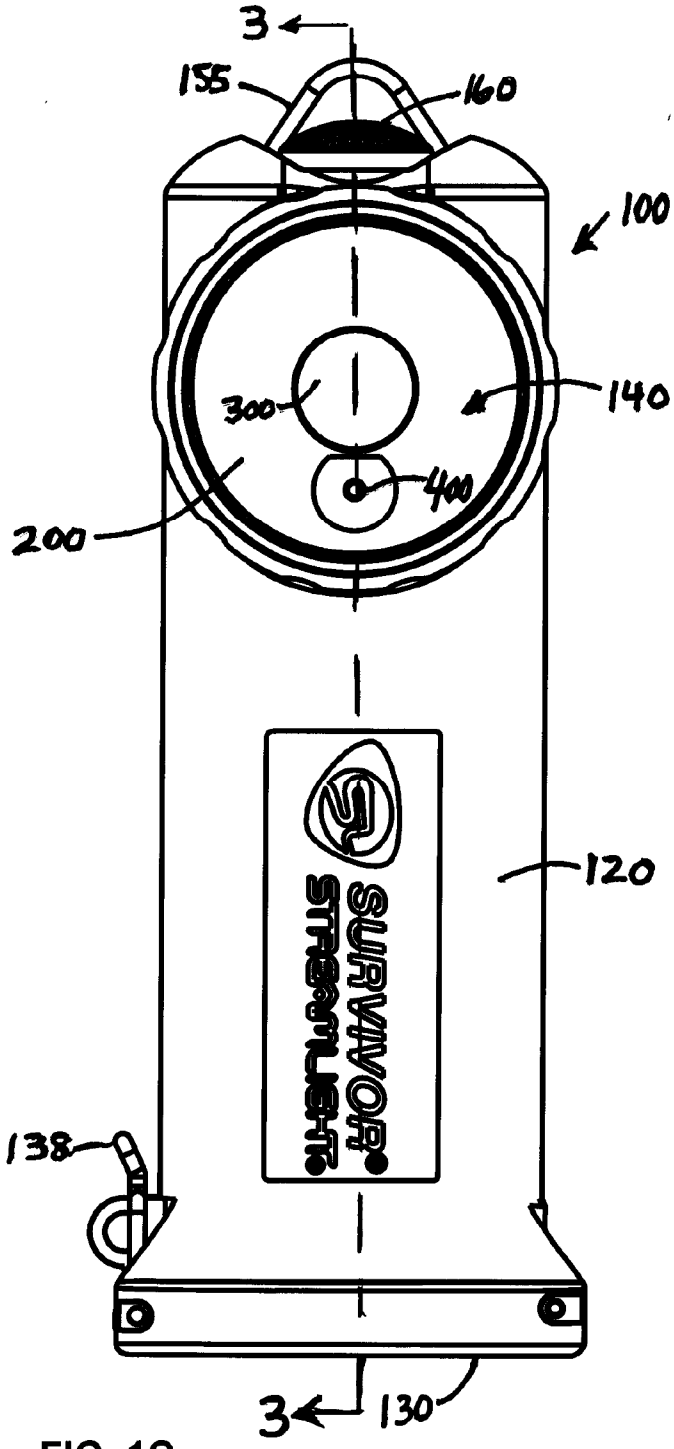

3
155
160
100
300
140
400
200
SURVIVOR
STREAMLIGHT
120
138
3
130

FIG. 1C

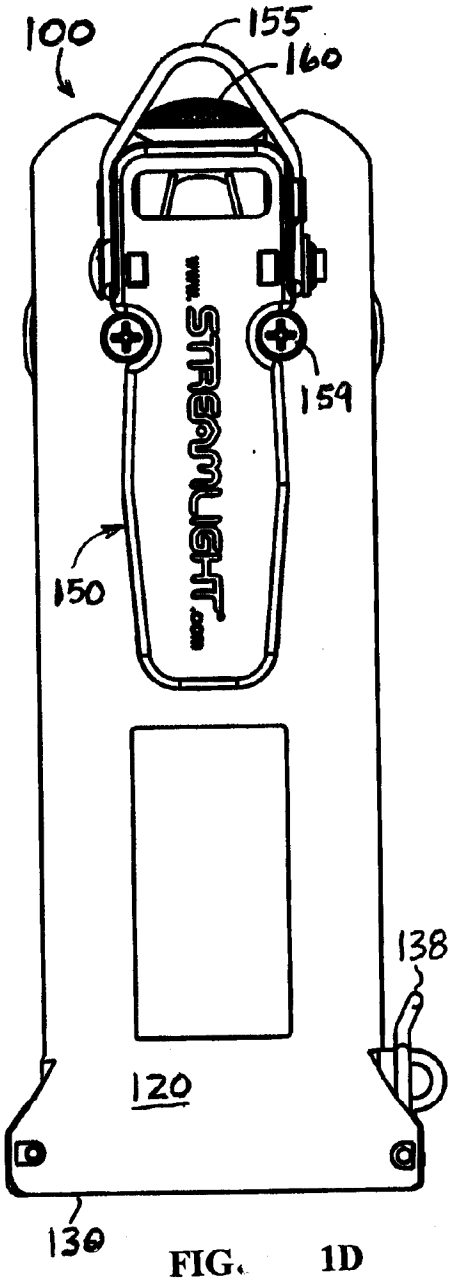


FIG. 1D

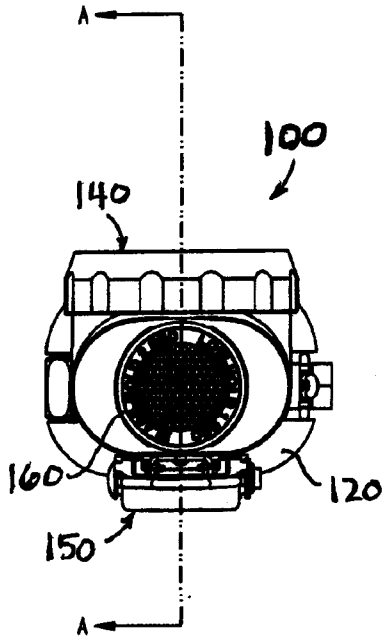


FIG. 1E

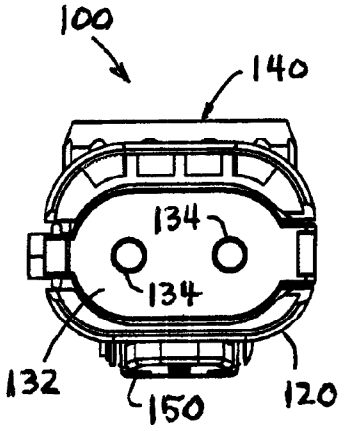
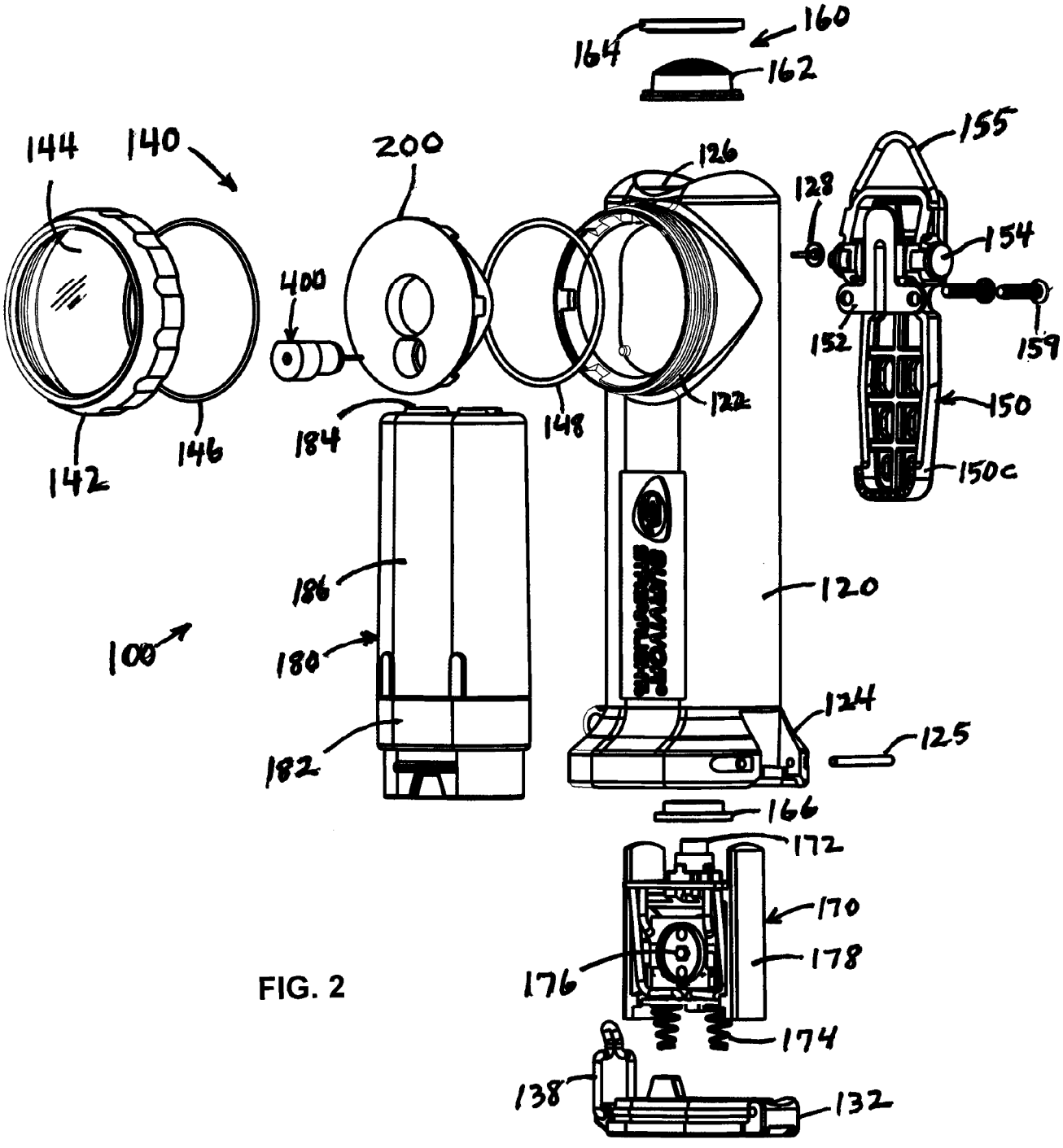


FIG. 1F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126
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148
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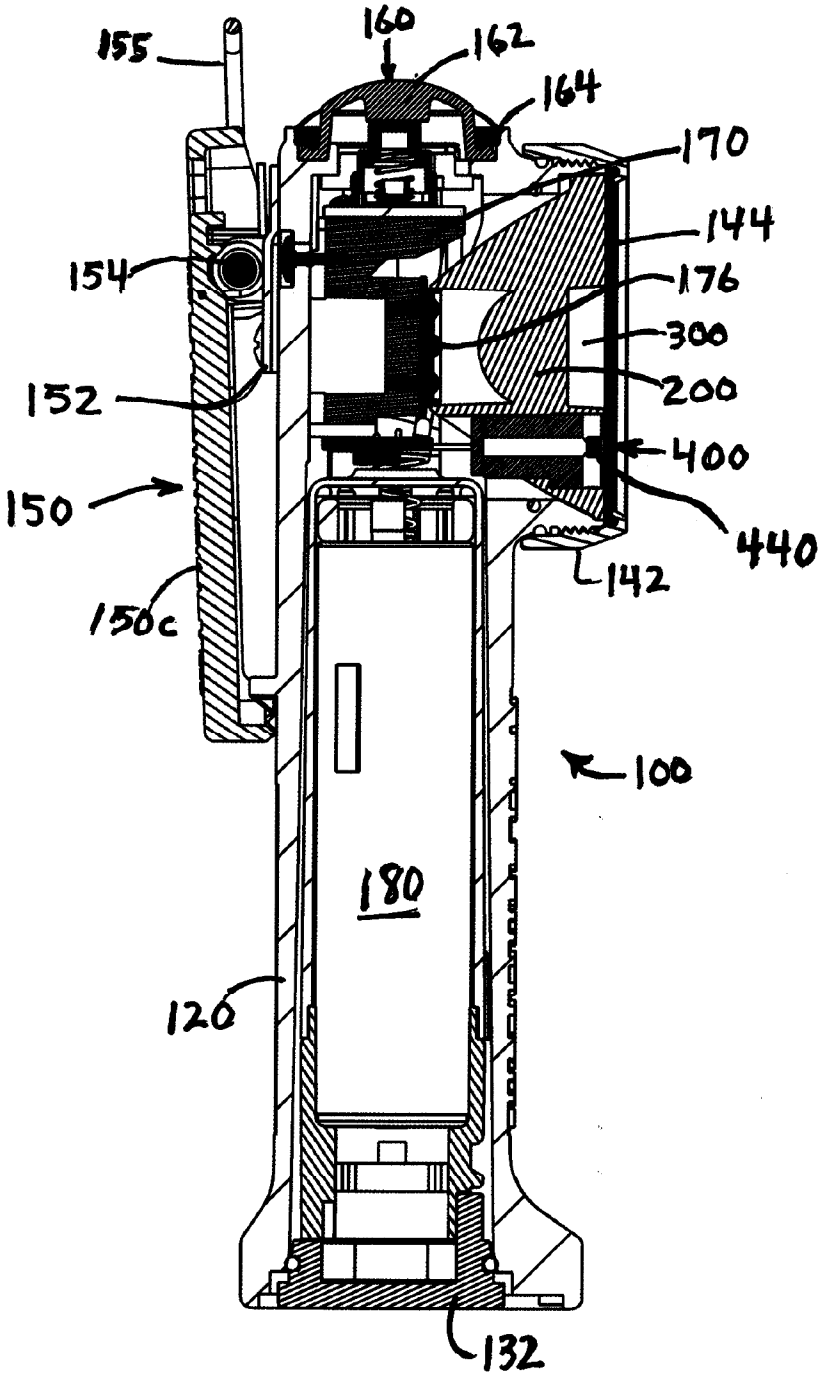
146
150c
186
120
100
180
124
125
182
166
172
170
176
178
174
138
132

FIG. 2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132

FIG. 3

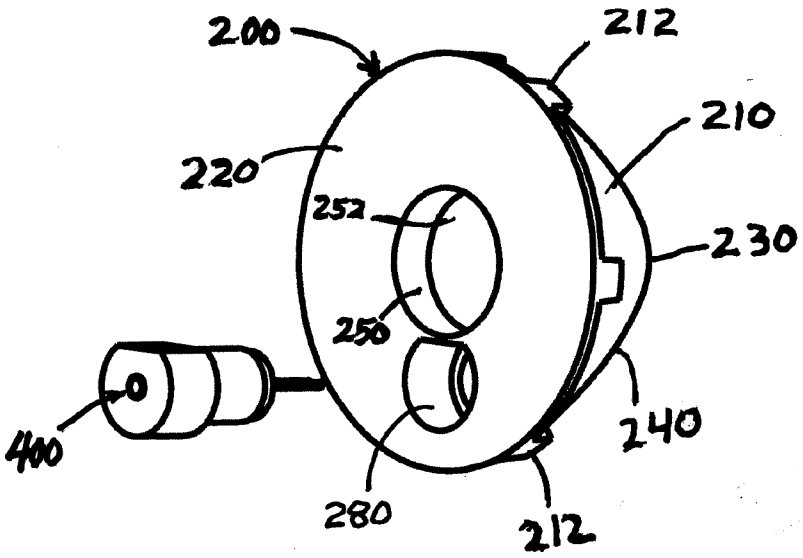
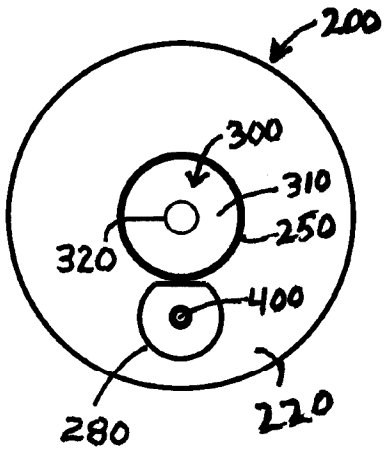
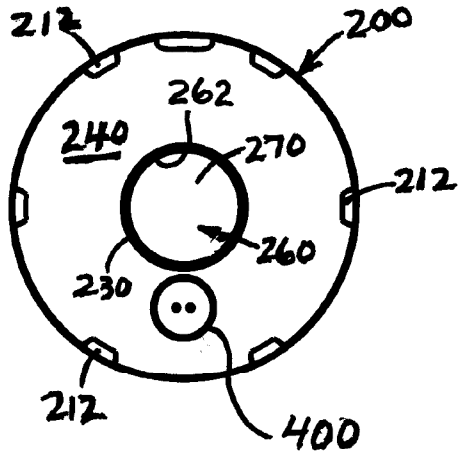


FIG. 4



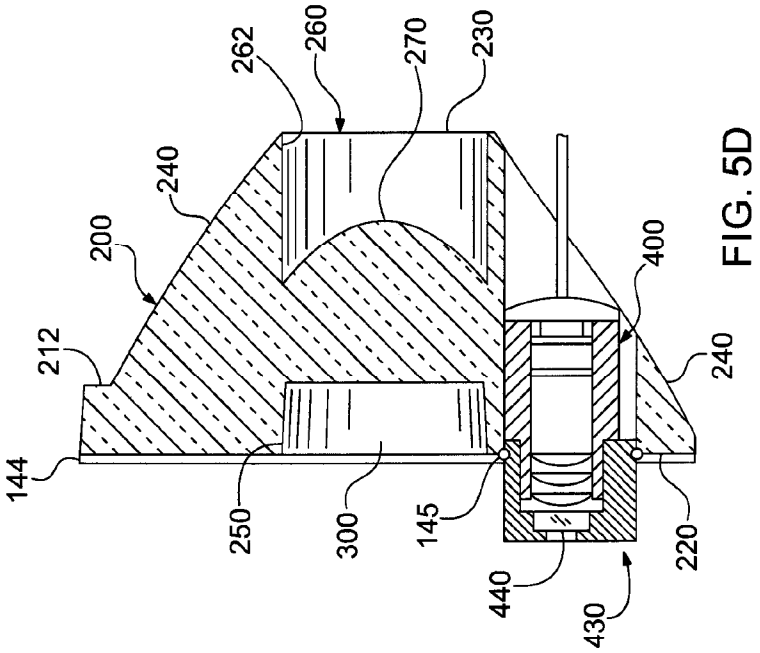
FRONT

FIG. 5A



REAR

FIG. 5B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212
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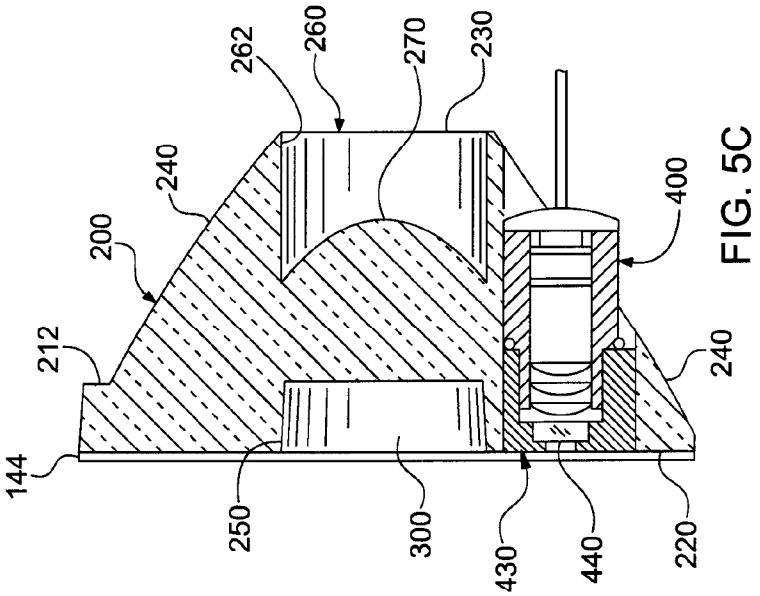
220

FIG. 5D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240
220

FIG. 5C

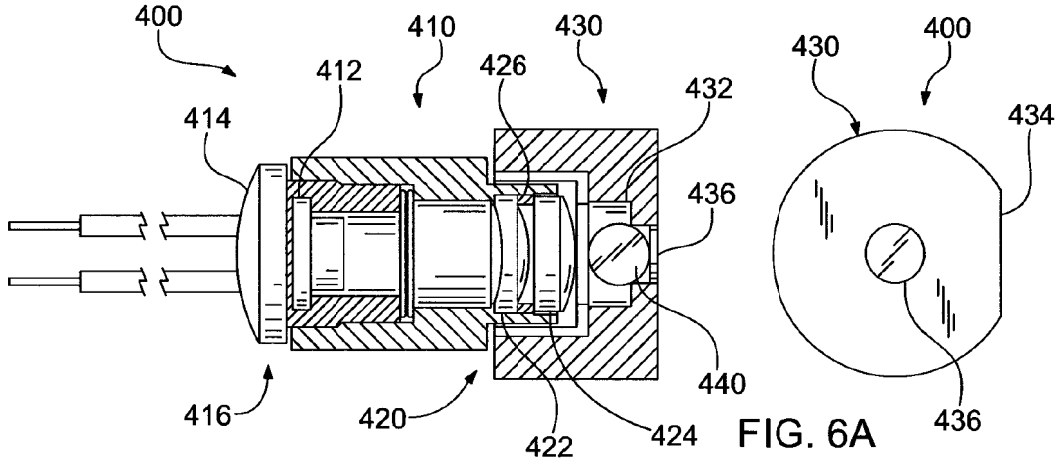

FIG. 6A

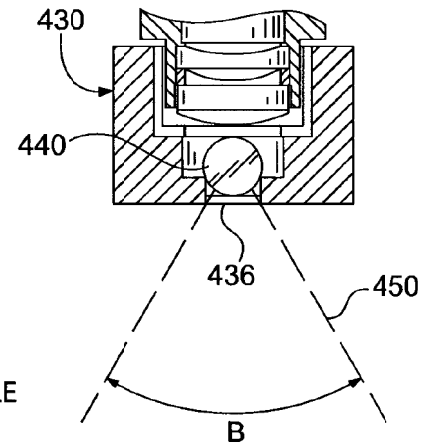

FIG. 6C

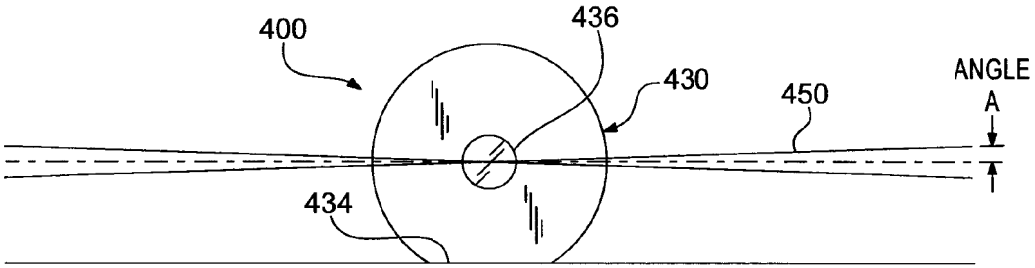

FIG. 6B

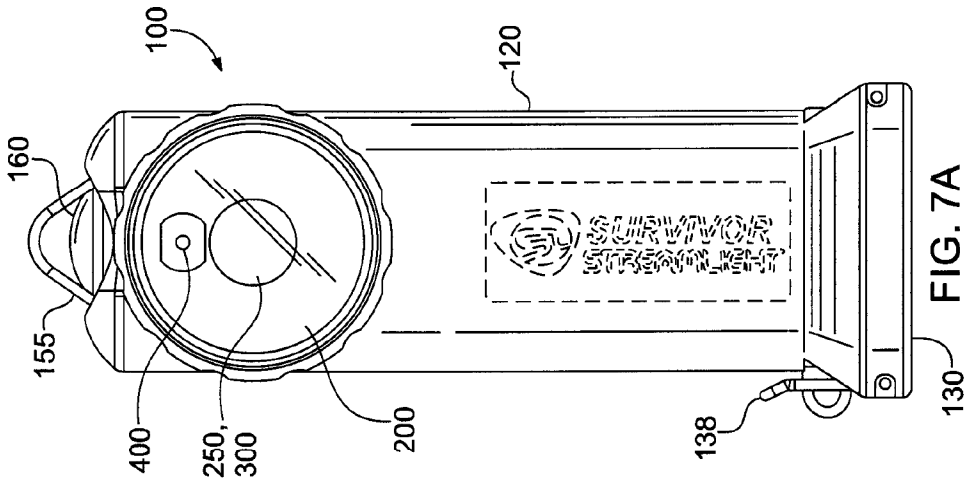
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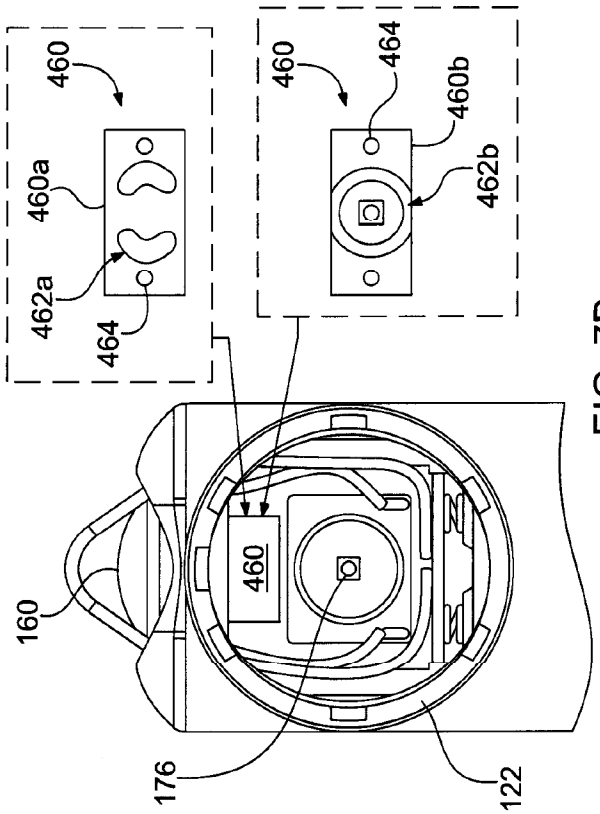
FIG. 7A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462b
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176
122

FIG. 7B

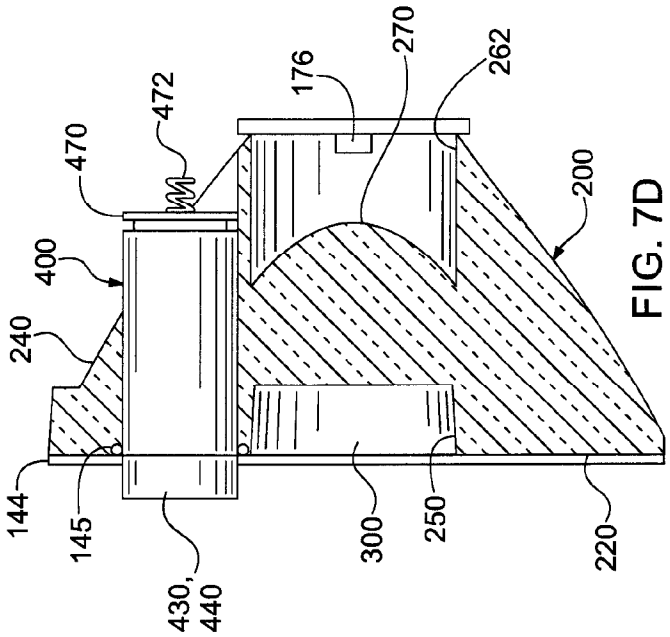
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FIG. 7D

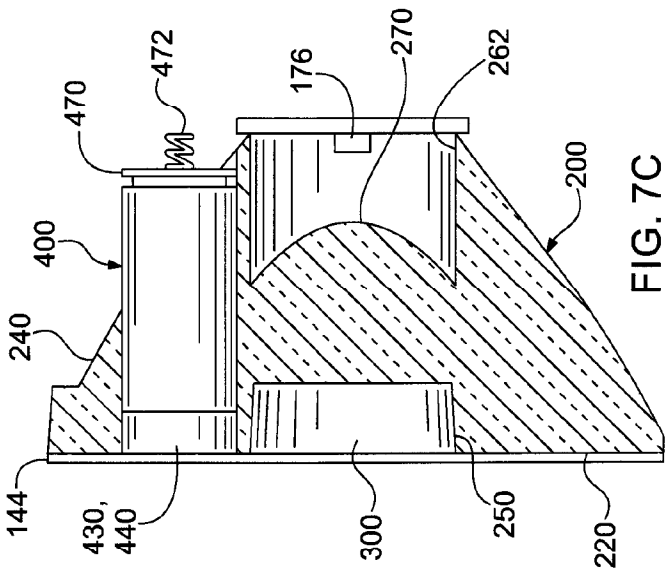
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FIG. 7C

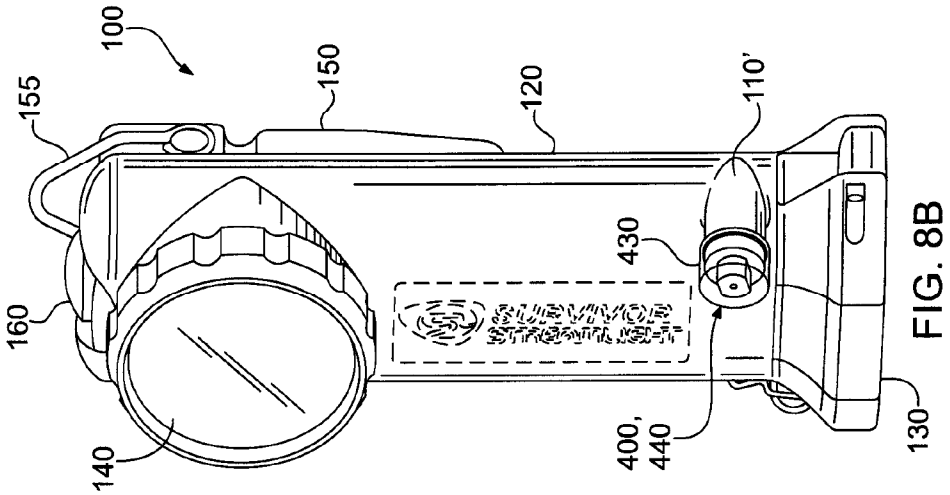
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FIG. 8B

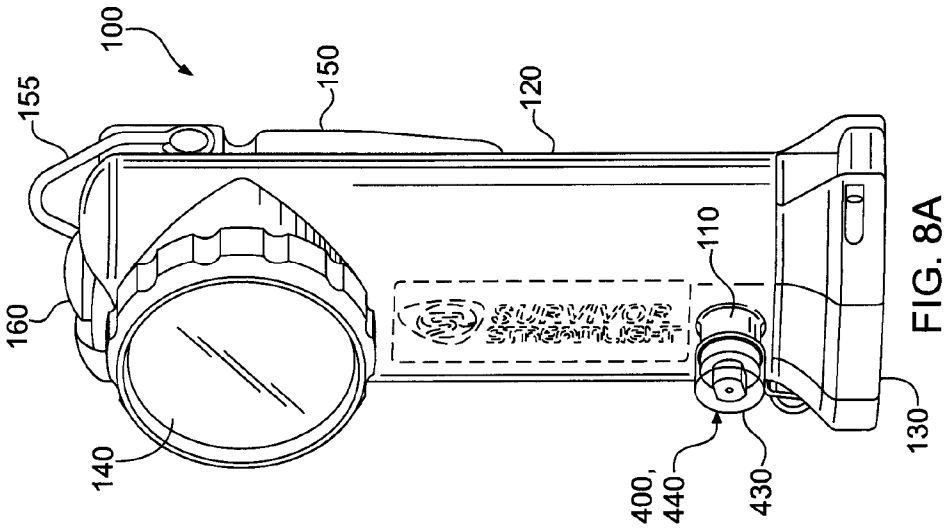
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FIG. 8A

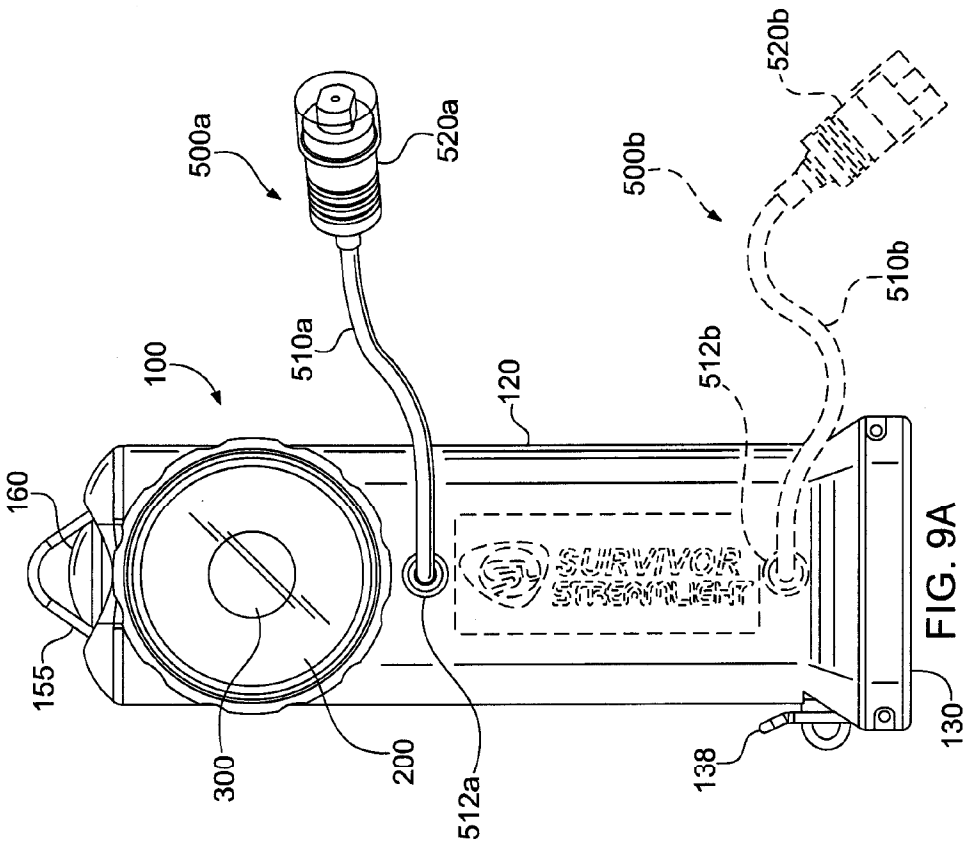
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FIG. 9A

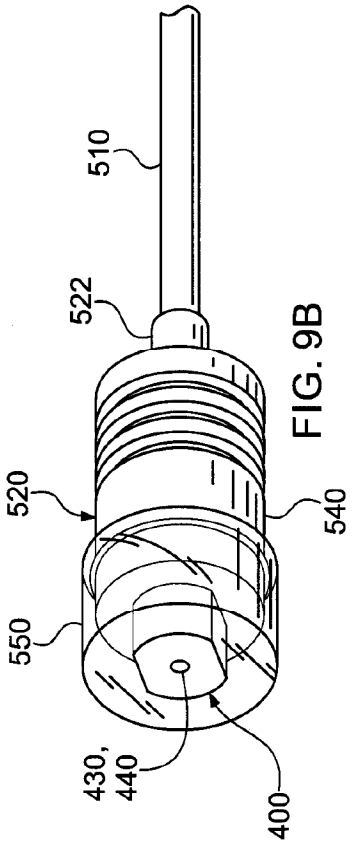
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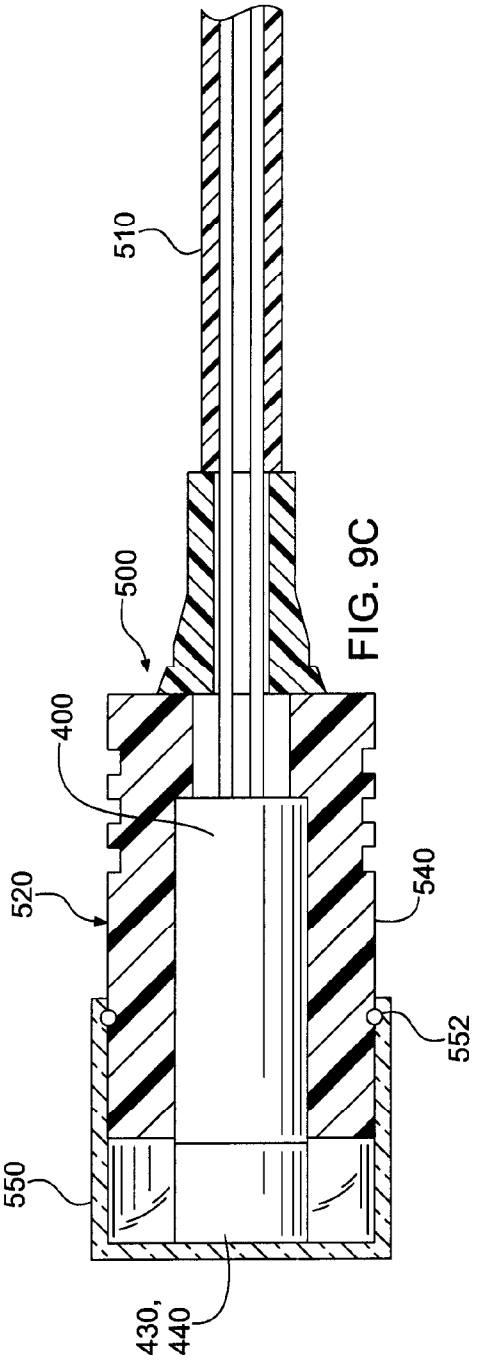
FIG. 9B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552
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440

FIG. 9C

DECLARATION

As a below named inventor, I hereby declare that:

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

I verily believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the invention entitled: **PORTABLE LIGHT WITH PLANE OF LASER LIGHT**, associated with the Docket Number above,

the specification of which [check one(s) applicable]
_X_ is filed concurrently herewith,
_____ was amended by Amendment filed _____, (if applicable); [and/or];
_X_ is attached to this Declaration;

I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment referred to above;

the above-identified application was made or authorized to be made by me; and

I acknowledge my duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

PRIORITY CLAIM: I hereby claim the benefit under 35 USC §119, §120 and/or §365 of the prior patent application(s) listed below which are incorporated herein by reference in their entirety:

Prior Application(s)	Country	Filing Date	Status
62/325,917	US	04/21/2016	Pending

POWER OF ATTORNEY: As inventor, I hereby appoint the practitioners associated with **Customer No. 00110** as my attorneys or agents with full power of substitution to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Roger W. Herrell, Reg. No. 22,964, Clement A. Berard, Reg. No. 29,613, and Stephen H. Eland, Reg. No. 41,010.

POWER TO INSPECT: I hereby give **DANN, DORFMAN, HERRELL AND SKILLMAN, P.C.** of Philadelphia, PA or its duly accredited representatives power to inspect and obtain copies of the papers on file relating to this application or relating to any application to which priority is claimed.

SEND CORRESPONDENCE TO: CUSTOMER NO. 00110

DIRECT INQUIRIES TO: **Clement A. Berard, PTO Regis. 29,613**
Telephone: (215) 563-4100 or Fax: (215) 563-4044
E-Mail: docketclerk@ddhs.com

DECLARATION

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

The undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h).

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

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

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that 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, and that such willful false statement may jeopardize the validity of the application or any patent issued thereon.

SOLE OR FIRST JOINT INVENTOR

Full Name: Raymond L. SHARRAH
First Middle Last

Signature: 

Date: 4-19-17

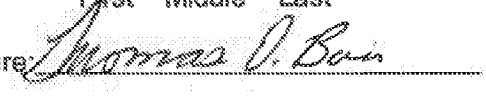
Residence: Collegeville, Pennsylvania
City State or Country

Citizenship: United States of America

Post Office Address:
258 Zvarick Road
Collegeville, Pennsylvania 19426
City State Zip Code

SECOND JOINT INVENTOR

Full Name: Thomas D. BORIS
First Middle Last

Signature: 

Date: 4/19/2017

Residence: Collegeville, Pennsylvania
City State or Country

Citizenship: United States of America

Post Office Address:
30 N. Grange Avenue
Collegeville, Pennsylvania 19426
City State Zip Code

DECLARATION

SOLE OR FIRST JOINT INVENTOR

Full Name: Donald J. KEELEY
First Middle Last

Signature: Donald J Keeley

Date: 4/19/2017

Residence: Emmaus, Pennsylvania
City State or Country

Citizenship: United States of America

Post Office Address:
623 West Berger Street
Emmaus, Pennsylvania 18049
City State Zip Code

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/492,344	04/20/2017	2875	1340	0096-P06343US01 (SL-727)	30	4

CONFIRMATION NO. 3062

FILING RECEIPT

110
DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

Date Mailed: 04/27/2017

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

Inventor(s)

Raymond L. SHARRAH, Collegeville, PA;
Thomas D. BORIS, Collegeville, PA;
Donald J. KEELEY, Emmaus, PA;

Applicant(s)

STREAMLIGHT, INC., Eagleville, PA;

Power of Attorney: The patent practitioners associated with Customer Number 00110

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/325,917 04/21/2016

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: 04/26/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/492,344**

Projected Publication Date: 10/26/2017

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **
Title

PORTABLE LIGHT WITH PLANE OF LASER LIGHT

Preliminary Class

362

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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

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

NOT GRANTED

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

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 15/492,344

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10	x 40 =	400	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x 210 =	210			
APPLICATION SIZE FEE (37 CFR 1.16(c))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1340		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	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))									
	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.

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 1 OF 2	**Attorney Docket Number: 0096-P06343US01 (SL-727)**

June 15, 2017

UNITED STATES PATENT DOCUMENTS				
EXAMINER'S INITIALS	CITE NO.	PATENT NUMBER	ISSUE DATE MM-DD-YYYY	FIRST NAMED INVENTOR
		6031649	02-29-2000	Cotty et al.
		6150943	11-21-2000	Lehman et al.
		6724467	04-20-2004	Billmers et al.
		6864799	03-08-2005	Popps et al.
		7614765	11-10-2009	Reason
		8360612	01-29-2013	Redpath et al.
		8672513	03-18-2014	Redpath et al.

UNITED STATES PUBLISHED PATENT DOCUMENTS				
EXAMINER'S INITIALS	CITE NO.	PUBLICATION NUMBER	PUBLICATION DATE MM-DD-YYYY	FIRST NAMED INVENTOR
		2004/0012962	01-22-2004	Wolf
		2004/0047145	03-11-2004	Koren
		2009/0067459	03-12-2009	Mizuuchi et al.
		2009/0086489	04-02-2009	Scott et al.
		2009/0185377	07-23-2009	Johnson
		2011/0157486	06-30-2011	Murata et al.

FOREIGN PATENT DOCUMENTS					
EXAMINER'S INITIALS	CITE NO.	DOCUMENT NUMBER	COUNTRY OR REGION	DATE OF PUBLICATION MM-DD-YYYY	FIRST NAMED INVENTOR OR APPLICANT

OTHER CITATIONS		
EXAMINER'S 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, page(s), volume-issue number(s), publisher, city and/or country where published
	01	Sean & Stephen Corporation,(untitled), date prior to April 20, 2017, 1 page

EXAMINER'S SIGNATURE		**DATE CONSIDERED**	

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

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 2 OF 2	**Attorney Docket Number: 0096-P06343US01 (SL-727)**

June 15, 2017

	02	Wikipedia, "Diffraction Grating", date last modified 13 February 2016, 9 pages, https://en.wikipedia.org/wiki/diffraction_grating
	03	Wikipedia, "Double-slit experiment", date last modified 6 February 2016, 12 pages, https://en.wikipedia.org/wiki/double-slit_experiment
	04	Physics Classroom, "Young's Experiment", printed 2/16/2016, 4 pages, http://www.physicsclassroom.com/class/light/lesson-3/young-s-experiment
	05	Yahoo.com, "Diffraction Grating Yourng's Experiment - Yahoo Image Search Results", printed 2/16/2016, 5 pages, https://images.search.yahoo.com/yhs/search;ylt=a0levrcuhmnwhvyau1ynni1q;_ylu=x3odmteybxv

EXAMINER'S SIGNATURE		**DATE CONSIDERED**	

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

Electronic Acknowledgement Receipt

EFS ID:	29506406
Application Number:	15492344
International Application Number:	
Confirmation Number:	3062
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Customer Number:	110
Filer:	Clement Alphonse Berard/Dawn Underwood
Filer Authorized By:	Clement Alphonse Berard
Attorney Docket Number:	0096-P06343US01 (SL-727)
Receipt Date:	15-JUN-2017
Filing Date:	20-APR-2017
Time Stamp:	12:23:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS-1449.pdf	46988 cbdc8a193de7f5a8fa12ecbb4a7c28608a6fed5f	yes	3

	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	1	
	Information Disclosure Statement (IDS) Form (SB08)		2	3	
Warnings:					
Information:					
2	Non Patent Literature	1-Sean-Stephen.pdf	38384 3ad370cade5561520ff94ea05cdf9967e1146f79	no	1
Warnings:					
Information:					
3	Non Patent Literature	2-Diffraction_grating.pdf	801600 b757bbc521dc09444bbc0f1fe011f6be85cd1e0f	no	9
Warnings:					
Information:					
4	Non Patent Literature	3-Double-slit.pdf	1535376 83cfc21f5158247b93f926008405fe6d55bca866	no	12
Warnings:					
Information:					
5	Non Patent Literature	4-Young-Experiment.pdf	385093 89c23ec788a59c0881a0ec3e507987d6dd638aa1	no	4
Warnings:					
Information:					
6	Non Patent Literature	5-YahooSearch.pdf	628216 3e99c25f44433b7f9a0c6abfc7f0a72fbf7ce347	no	5
Warnings:					
Information:					
		Total Files Size (in bytes):	3435657		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:
Raymond L. Sharrah et al.

Application No.: 15/492,344

Filed: 04/20/2017

For: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

Confirmation No.: 3062

Examiner:

Group Art Unit:

Atty Docket: 0096-P06343US01 (SL-727)

CERTIFICATE OF TRANSMISSION

I hereby certify that this Correspondence and accompanying papers are being filed electronically with the United States Patent and Trademark Office via EFS.

June 15, 2017
Date of Certificate

/dawn underwood/
Dawn Underwood

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97

In compliance with the duty of disclosure set forth in 37 C.F.R. § 1.56, Applicants are submitting herewith a Form PTO-1449.

This Information Disclosure Statement is being filed within three months of the filing date of the application. Accordingly, no fee is due.

Applicants respectfully request full and proper consideration of the listed information during examination of the application, and that the listed information be printed on any patent that issues therefrom.

Respectfully submitted,

DANN, DORFMAN, HERRELL & SKILLMAN, PC
Attorneys for Applicant(s)

By /clement a berard/
Clement A. Berard
PTO Registration No. 29,613

Telephone: (215) 563-4100
Facsimile: (215) 563-4044

Enclosures - Form PTO-1449
Copies of Non-US Patent/Pub. App. refs listed on PTO -1449

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)

CONFIRMATION NO. 3062

110
DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

PUBLICATION NOTICE

OC000000095035873

Title:PORTABLE LIGHT WITH PLANE OF LASER LIGHT

Publication No.US-2017-0307148-A1
Publication Date:10/26/2017

NOTICE OF PUBLICATION OF APPLICATION

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

The publication may be accessed through the USPTO's 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 Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)	3062

110 7590 10/01/2018

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307
UNITED STATES OF AMERICA

EXAMINER	
LEE, NATHANIEL J.	

ART UNIT	PAPER NUMBER
2875	

MAIL DATE	DELIVERY MODE
10/01/2018	PAPER

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

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

Office Action Summary	Application No. 15/492,344	Applicant(s) SHARRAH ET AL.	
	Examiner NATHANIEL LEE	Art Unit 2875	AIA (First Inventor to File) Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *20 April 2017*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

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

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-30* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☒ Claim(s) *27-30* is/are allowed.

7)☒ Claim(s) *1-4,6-14,17-24 and 26* is/are rejected.

8)☒ Claim(s) *5,15 and 25* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *20 April 2017* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *6/15/2017*.

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

4) ☐ Other: _____.

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

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed June 15, 2017 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Page 1 of the IDS cuts off the end of the list of US published patent documents and the beginning of the list of non-patent documents. Those documents which are legible were considered, but some appear to have been inadvertently left off due to technical issues.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-12, 16-21, 23, 24, 26 are rejected under 35 U.S.C. 103 as being unpatentable over Spartano et al. (US 2011/0163698 A1) in view of Popps et al. (US 6,864,799 B2).

With respect to claim 1: Spartano teaches "a portable light (10) comprising: a light body (12) for receiving a source of electrical power (64); a white light source (22) supported by said light body and selectively energizable for producing white light (paragraph 52); and a switch supported by said light body for selectively energizing said white light source from the source of electrical power (40)".

Spartano does not specifically teach "a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; a switch for selectively energizing said laser light source from the source of electrical power".

However, Popps teaches "a laser light source (any of 36, 38, 40, 42) supported by said light body (12) and selectively energizable for producing laser light (column 3 line 38-column 4 line 13), wherein said laser light source includes a cylindrical lens (46) configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light (column 4 lines 1-6), whereby the laser light source is configured to emit a plane of laser

light (column 4 lines 1-6); a switch for selectively energizing said laser light source from the source of electrical power (24)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify the light of Spartano with the laser and cylindrical lens taught by Popps in order to provide a beacon creating lines of light leading to an exit in an emergency situation (Popps column 1 lines 66-column 2 line 3).

With respect to claim 2: Popps teaches "wherein the laser emission element comprises a laser diode (column 3 lines 55-59)".

The motivation to combine is the same as in claim 1.

With respect to claim 6: Spartano suggests "wherein said switch is operable so that only one of said white light source and said laser light source is active at a given time (paragraphs 55, 57, 58)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to allow the switch of Spartano to separately operate the laser light source in the combination as a separate mode, similar to how it is already used to separately operate LEDs 24, 26, 28 from white light source 22 so the user can choose one operating mode without activating the other operating modes of the portable light (Spartano paragraph 92).

With respect to claim 7: Spartano suggests "wherein said white light source (22) and said laser light source (analogous to 24, 26, 28, 30) emit light in substantially the same direction (see Fig. 1)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to locate Popps' laser light source at the positions and orientations Spartano's LEDs are because those positions are where the circuitry 200 that would be used to power the laser are

disposed (paragraph 82), making the combination much simpler than if the laser were placed in some other location where the supporting circuitry would then have to be rebuilt from scratch.

With respect to claim 8: Spartano suggests "wherein said laser light source is configured: for rotating the plane of laser light relative to said light body (see Figs. 11a-11b); or for repositioning the plane of laser light relative to said light body".

The motivation for adding the laser is the same as in claim 1 above. The combination with Spartano would necessarily be configured to rotate the plane of laser light relative to said body since Spartano has that capability to start with. Also note that, since this is a *portable* light, the person using with would be able to rotate the plane of laser light by simply twisting their wrist.

With respect to claim 9: Spartano suggests "wherein said laser light source (analogous to 24, 26, 28, 30) is supported by a shaped optical element of said white light source or is supported by a receptacle of said light body (20) or is supported at a distal end of a flexible stalk supported by said light body".

It would have been obvious at the time of the invention for one of ordinary skill in the art to locate Popps' laser light source at the positions and orientations Spartano's LEDs are because those positions are where the circuitry 200 that would be used to power the laser are disposed (paragraph 82), making the combination much simpler than if the laser were placed in some other location where the supporting circuitry would then have to be rebuilt from scratch.

With respect to claim 10: Spartano suggests "wherein said laser light source is configured: for rotating the plane of laser light relative to said light body (see Figs. 11a-11b); or for repositioning the plane of laser light relative to said light body".

The motivation for adding the laser is the same as in claim 1 above. The combination with Spartano would necessarily be configured to rotate the plane of laser light relative to said

body since Spartano has that capability to start with. Also note that, since this is a *portable* light, the person using with would be able to rotate the plane of laser light by simply twisting their wrist.

With respect to claim 11: Spartano teaches "a portable light (10) comprising: a light body (12) for receiving a source of electrical power (64); an illumination light source supported by said light body and selectively energizable for producing illumination light (20); and a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power (40)".

Spartano does not specifically teach "a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; a switch for selectively energizing said laser light source from the source of electrical power".

However, Popps teaches "a laser light source (any of 36, 38, 40, 42) supported by said light body (12) and selectively energizable for producing laser light (column 3 line 38-column 4 line 13), wherein said laser light source includes a cylindrical lens (46) configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light (column 4 lines 1-6), whereby the laser light source is configured to emit a plane of laser light (column 4 lines 1-6); a switch for selectively energizing said laser light source from the source of electrical power (24)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify the light of Spartano with the laser and cylindrical lens taught by Popps in order to

provide a beacon creating lines of light leading to an exit in an emergency situation (Popps column 1 lines 66-column 2 line 3).

With respect to claim 12: Popps teaches "wherein the laser emission element comprises a laser diode (column 3 lines 55-59)".

The motivation to combine is the same as in claim 11.

With respect to claim 16: Spartano suggests "wherein said switch is operable so that only one of said white light source and said laser light source is active at a given time (paragraphs 55, 57, 58)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to allow the switch of Spartano to separately operate the laser light source in the combination as a separate mode, similar to how it is already used to separately operate LEDs 24, 26, 28 from white light source 22 so the user can choose one operating mode without activating the other operating modes of the portable light (Spartano paragraph 92).

With respect to claim 17: Spartano suggests "wherein said white light source (22) and said laser light source (analogous to 24, 26, 28, 30) emit light in substantially the same direction (see Fig. 1)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to locate Popps' laser light source at the positions and orientations Spartano's LEDs are because those positions are where the circuitry 200 that would be used to power the laser are disposed (paragraph 82), making the combination much simpler than if the laser were placed in some other location where the supporting circuitry would then have to be rebuilt from scratch.

With respect to claim 18: Spartano suggests "wherein said laser light source is configured: for rotating the plane of laser light relative to said light body (see Figs. 11a-11b); or for repositioning the plane of laser light relative to said light body".

The motivation for adding the laser is the same as in claim 11 above. The combination with Spartano would necessarily be configured to rotate the plane of laser light relative to said body since Spartano has that capability to start with. Also note that, since this is a *portable* light, the person using with would be able to rotate the plane of laser light by simply twisting their wrist.

With respect to claim 19: Spartano suggests "wherein said laser light source (analogous to 24, 26, 28, 30) is supported by a shaped optical element of said white light source or is supported by a receptacle of said light body (20) or is supported at a distal end of a flexible stalk supported by said light body".

It would have been obvious at the time of the invention for one of ordinary skill in the art to locate Popps' laser light source at the positions and orientations Spartano's LEDs are because those positions are where the circuitry 200 that would be used to power the laser are disposed (paragraph 82), making the combination much simpler than if the laser were placed in some other location where the supporting circuitry would then have to be rebuilt from scratch.

With respect to claim 20: Spartano suggests "wherein said laser light source is configured: for rotating the plane of laser light relative to said light body (see Figs. 11a-11b); or for repositioning the plane of laser light relative to said light body".

The motivation for adding the laser is the same as in claim 1 above. The combination with Spartano would necessarily be configured to rotate the plane of laser light relative to said body since Spartano has that capability to start with. Also note that, since this is a *portable* light, the person using with would be able to rotate the plane of laser light by simply twisting their wrist.

With respect to claim 21: Spartano suggests "wherein said laser light source: is supported by a reflective element of said illumination light source and is rotatable relative

thereto; or is supported by a receptacle (20) of said light body and is rotatable relative thereto (Figs. 11a-11c); or is supported on a flexible stalk that is attached to said light body".

The motivation for adding the laser is the same as in claim 1 above. The combination with Spartano would necessarily be configured to rotate the plane of laser light relative to said body since Spartano has that capability to start with.

With respect to claim 23: Spartano teaches "a portable light (10) comprising: a light body (12) for receiving a source of electrical power (64) and having a base end (16); an illumination light source (22) supported by said light body relatively nearer to an end thereof that is remote to the base end thereof (see Fig. 7), said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light (see Fig. 7); and a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power (40)".

Spartano does not specifically teach "a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted; and a switch for selectively energizing said laser light source from the source of electrical power".

However, Popps teaches "a laser light source (any of 36, 38, 40, 42) supported by said light body (20) relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light (42 is in the base 22, and thus necessarily

the nearest to the base as is possible), wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body (46), whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted (forward, generally); and a switch for selectively energizing said laser light source from the source of electrical power (24)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify the light of Spartano with the laser and cylindrical lens taught by Popps in order to provide a beacon creating lines of light leading to an exit in an emergency situation (Popps column 1 lines 66-column 2 line 3).

With respect to claim 24: Popps teaches "wherein said laser light source is: supported in a fixed location that is relatively nearer to the base end of said light body than is said illumination light source (see Fig. 1); or supported on a flexible stalk that is relatively nearer to the base end of said light body than is said illumination light source".

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify the light of Spartano with the laser and cylindrical lens that is in the base of Popps in order to provide the line of laser light on the floor serving the purpose of in order to provide a beacon creating lines of light leading to an exit in an emergency situation (Popps column 1 lines 66-column 2 line 3).

With respect to claim 26: Spartano suggests "wherein said switch is operable so that only one of said white light source and said laser light source is active at a given time (paragraphs 55, 57, 58)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to allow the switch of Spartano to separately operate the laser light source in the combination as

a separate mode, similar to how it is already used to separately operate LEDs 24, 26, 28 from white light source 22 so the user can choose one operating mode without activating the other operating modes of the portable light (Spartano paragraph 92).

Claims 3, 4, 13, 14 are rejected under 35 U.S.C. 103 as being unpatentable over Spartano and Popps as applied to claims 1 and 11 above, and further in view of Tung (US 7,114,861 B1).

With respect to claim 3: Spartano in view of Popps does not specifically teach "wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens".

However, Tung teaches "wherein said laser light source (20) includes a registration feature on an external surface (212) thereof disposed in registration with a longitudinal axis of the cylindrical lens (27)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to use Tung's registration feature in order to fine tune a precise laser alignment (Tung column 1 lines 43-51).

With respect to claim 4: Tung teaches "wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens (Figs. 1, 2)".

The motivation to combine is the same as in claim 3.

With respect to claim 13: Spartano in view of Popps does not specifically teach "wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens".

However, Tung teaches "wherein said laser light source (20) includes a registration feature on an external surface (212) thereof disposed in registration with a longitudinal axis of the cylindrical lens (27)".

It would have been obvious at the time of the invention for one of ordinary skill in the art to use Tung's registration feature in order to fine tune a precise laser alignment (Tung column 1 lines 43-51).

With respect to claim 14: Tung teaches "wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens (Figs. 1, 2)".

The motivation to combine is the same as in claim 13.

Allowable Subject Matter

Claims 5, 15, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 27-30 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 5: The prior art of record does not teach or reasonably suggest "a portable light comprising … a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light … wherein said white light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward

surface, and wherein the laser light source is supported by the flat forward surface" along with the other limitations of the claim.

With respect to claim 15: The prior art of record does not teach or reasonably suggest "a portable light comprising … a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light … wherein said illumination light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface" along with the other limitations of the claim.

With respect to claim 25: The prior art of record does not teach or reasonably suggest "a portable light comprising … a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body … wherein said laser light source further includes a support for said cylindrical lens, wherein: the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or the laser emission element and the support

for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body" along with the other limitations of the claim.

With respect to claim 27-30: The prior art of record does not teach or reasonably suggest "a portable light comprising: ... a shaped optically clear element having a polished curved external side surface and a flat forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body; a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light" along with the other limitations of the claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL LEE whose telephone number is (571)270-5721. The examiner can normally be reached on Monday-Thursday, 8:00 a.m.-5:00 p.m., EST.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anh Mai can be reached on (571)272-1995. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHANIEL LEE/
Examiner, Art Unit 2875

Notice of References Cited	Application/Control No. 15/492,344	Applicant(s)/Patent Under Reexamination SHARRAH ET AL.	
	Examiner NATHANIEL LEE	Art Unit 2875	Page 1 of 1

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*	B	US-6,864,799 B2	03-2005	Popps; Gregory S.	G08B7/062	340/321
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	E	US-				
	F	US-				
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	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

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

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

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 1 OF 2	Attorney Docket Number: 0096-P06343US01 (SL-727)

June 15, 2017

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/N.J.L/		6150943	11-21-2000	Lehman et al.
/N.J.L/		6724467	04-20-2004	Billmers et al.
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/N.J.L/		2004/0047145	03-11-2004	Koren
		2009/0067459	03-12-2009	Mizuuchi et al.
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EXAMINER'S INITIALS	CITE NO.	DOCUMENT NUMBER	COUNTRY OR REGION	DATE OF PUBLICATION MM-DD-YYYY	FIRST NAMED INVENTOR OR APPLICANT

OTHER CITATIONS

EXAMINER'S 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, page(s), volume-issue number(s), publisher, city and/or country where published
	01	Sean & Stephen Corporation,(untitled), date prior to April 20, 2017, 1 page

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	Group Art Unit:
	Examiner Name:
SHEET 2 OF 2	**Attorney Docket Number: 0096-P06343US01 (SL-727)**

June 15, 2017

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	3	"20110163698"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/25 11:44
L11	268	F21L4/025.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/25 14:11
S1	520	F21L4/045.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/24 15:39
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S3	51	("1613203" | "20040223342" | "20050157492" | "20060028812" | "20070153512" | "20080074869" | "3204807" | "3527914" | "4102471" | "4363944" | "4506120" | "6019482" | "6609812" | "6627816" | "6641279" | "6930262" | "7220016" | "7518133" | "7692136" | "D260232" | "D301336" | "D351376" | "D408018").PN. OR ("8376574").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 15:47
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EAST Search History (Interference)

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15492344	SHARRAH ET AL.
	Examiner	Art Unit
	NATHANIEL LEE	2875

CPC- SEARCHED		
Symbol	Date	Examiner
F21L4/025, 045	9/25/2018	NJL

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

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SEARCH NOTES		
Search Notes	Date	Examiner
CLass searched in EAST. Text searched in EAST. Considered IDS.	9/25/2018	NJL

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)	3062

110 7590 10/09/2018

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LEE, NATHANIEL J.	

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Commissioner for Patents

The IDS filed June 15, 2017 was objected to due to in the office action of October 1, 2018 due to a glitch making several references illegible to the examiner. The glitch has been resolved and the IDS has been considered.

/NATHANIEL J LEE/ Examiner, Art Unit 2875	/ANH T MAI/ Supervisory Patent Examiner, Art Unit 2875

PTO-90C (Rev.04-03)

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 1 OF 2	Attorney Docket Number: 0096-P06343US01 (SL-727)

June 15, 2017

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/N.J.L/		2004/0047145	03-11-2004	Koren
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OTHER CITATIONS

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/N.J.L/	01	Sean & Stephen Corporation,(untitled), date prior to April 20, 2017, 1 page

EXAMINER'S SIGNATURE	/NATHANIEL J LEE/	DATE CONSIDERED	10/09/2018

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/N.J.L/	02	Wikipedia, "Diffraction Grating", date last modified 13 February 2016, 9 pages, https://en.wikipedia.org/wiki/diffraction_grating
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Raymond L. SHARRAH	:	**Art Unit: 2875**
	:	
Appl. Serial No. 15/492,344	:	**Examiner: Nathaniel J. Lee**
	:	
Filed: April 20, 2017	:	**Confirmation No. 3062**
	:	
For: PORTABLE LIGHT WITH PLANE OF LASER LIGHT:		
	:	
Attorney Docket: 0096-P06343US01 (SL-727)	:	

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/dawn underwood/ — By: Dawn Underwood

RESPONSE UNDER 37 C.F.R. §1.111

This Response Under 37 C.F.R. §1.111 is submitted in response to the Office Letter mailed October 1, 2018, in the above-captioned Application for which the three-month shortened statutory period for response will expire January 2, 2019 (January 1 being a Federal holiday).

Applicant requests a telephone interview with the Examiner (and a supervisor with authority to reach agreement if Examiner lacks such authority) if any issues remain unresolved after entry of this Response.

Amendments:

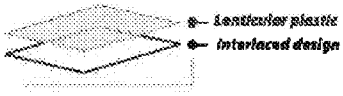
Please amend the captioned Application as follows:

HOW IT WORKS

LENTICULAR LENSES

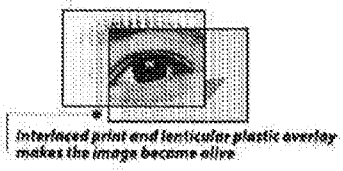
MANUFACTURING EXTRUDED LENTICULAR LENS

One side of an extruded plastic sheet is embossed with columns of tiny corrugations called lenticules, hence the name "lenticular" in lenticular extruded lens. The lenticules are all the same size and are spaced equally across the sheet. The other side of the sheet remains smooth in order to be printed upon.



AND-DONTS-
LENTICULAR-DESIGN/)

GLOSSARY OF TERMS
(/GLOSSARY-OF-TERMS/)



The frequency of lenticules is called lines-per-inch or LPI, and can vary from 10 to 200. Just as no one eyeglass prescription works for everyone, no single LPI works best for all project effects.

The curvature or angle of the lenticule is important to keep in mind when selecting the proper lens. For an optimal 3D effect, a narrow-angle lenticular lens with a viewing angle between 15 to 44 degrees works best. When working to achieve a good animation effect, a wide-angle lenticular lens with a viewing angle between 44 to 65 degrees works best. These variances will help to determine which lens works best for your project.

For more information regarding lenticular plastic, visit Pacur - www.pacur.com (http://www.pacur.com/)

LENTICULAR LENS DIMENSIONS

Lenticular sheets range in thickness from 0.008 to 0.385 of an inch. What you choose is determined by the desired effect your looking to accomplish and how your project will ultimately be used. Sheets come in a number of sizes, with 20"x 28" and 28"x 40" being two of the most commonly used in offset printing. Roll lenticular is also available for the flexo and web printing markets. Ultimately, whatever dimensions being used, it's the clarity of the lenticular sheet that plays a huge role in the quality of the product.

LENTICULAR LENS OPTIONS

There are so many variables involved in putting together a

great lenticular piece. Selecting the correct lens is ultimately one of the most important decisions to make.

GLOSSARY OF TERMS (/GLOSSARY-OF-TERMS)

LENSTAR® PLUS INFORMATIONAL PACKET (/S/PACUR-LENSTAR-PACKET.PDF)

LINKS

Home (/home)
What is it? (/what-is-lenticular)
How it works (/the-basics-of-lenticular)
Store (/store)
Contact Us (/contact)

CONTACT US

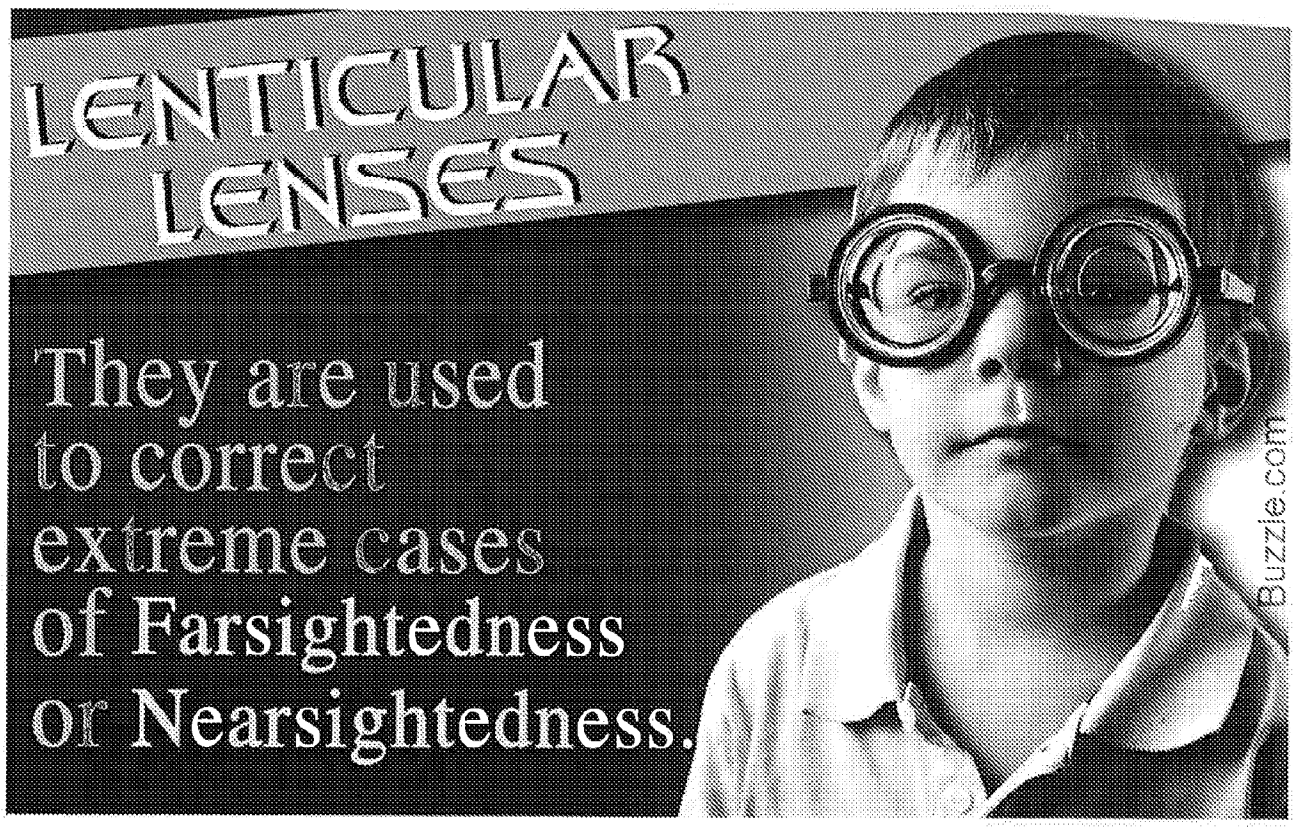
3555 Moser St
Oshkosh, WI 54901
United States
920-236-2888

View All Locations (/contact)

RESOURCES

Glossary of Terms (/glossary-of-terms)
Lenstar Plus Information Packet (/s/pacur-lenstar-packet.pdf)

Lenticular Lenses: Working Principle and Its Advantages and Disadvantages



The lenticular lenses have been in use for a century now. Technology could help millions who need corrective lenses. The lenses are simple in principle, but used in complex applications.

ScienceStruck Staff Last Updated: Feb 28, 2018

- A French painter, Gois-Clair used a technique similar to lenticular lenses to create a multidimensional effect.
- The first lenticular lenses were produced in 1930 by Victor Anderson, mainly for advertisements and promotions.

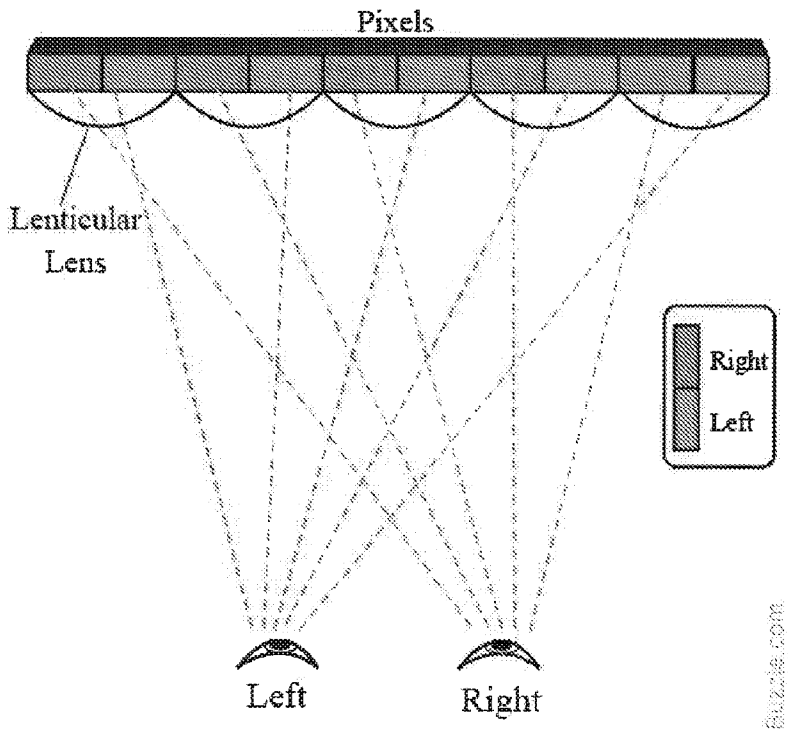
Lenticular lenses is an age-old technique that has evolved immensely over the years, and is being used even today. It is basically an assortment of magnifying lenses arranged in such a way that you can see different images magnified when viewed from different angles. You may remember some pictures or posters that gave out a 3D effect when you moved around or changed the viewing angle, e.g. a hologram. The technology used was lenticular printing, in which lenticular lenses produce printed images with an illusion or multiple images. These days, this technology is being used in 3D televisions, gaming systems, and even in eyeglasses to curb extreme vision problems.

Let's have a look at lenticular lenses in detail.

Lenticular lens is completely different from holograms. Holograms have to be viewed in proper lighting and angles; whereas, lenticular technology uses a full spectrum of colors that is visible in all conditions, and is more detailed and visible. Lenticular technology involves exhibiting numerous sets of images, which change when being viewed from different angles. Illusion of depth or motion is the result of this technique. It is one of the techniques in which 3D images or videos are created. It can be best described as transformation of steady print into a dynamic and interactive print.

Let us see how lenticular lenses work.

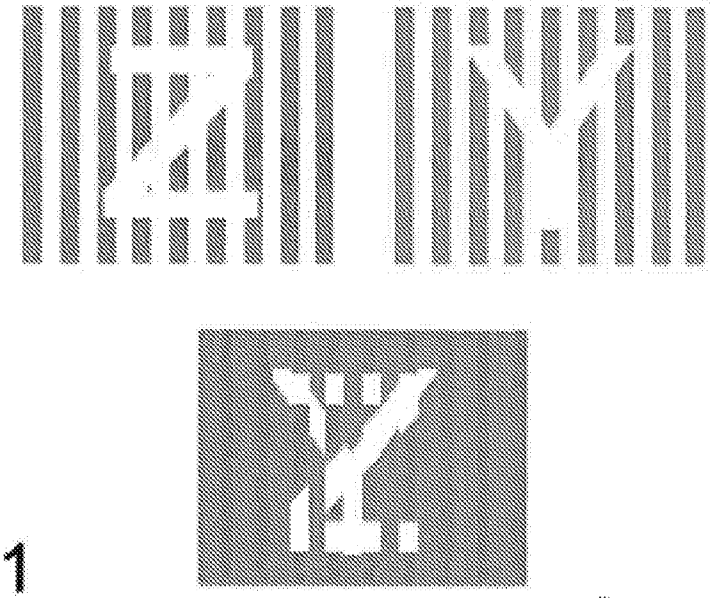
Principle of Lenticular Lenses



Working of Lenticular Lenses

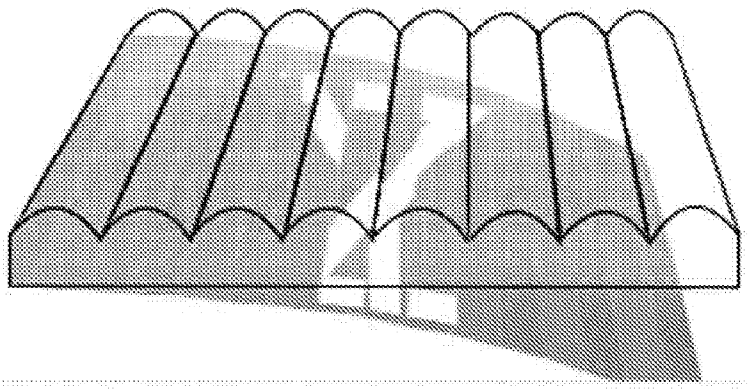
- It is done by interlacing graphics with a lenticular lens, which in turn, gives different images to the viewer depending upon the viewing angle. Interlacing means that the images are divided into strips, and then, combined into one graphic.
- To create a lenticular image, at least, two images are needed.
- The lenticular plastic sheet has one smooth side, where the graphic is printed directly, and the other side is made of lenticules.
- Each lenticule will act as a magnifying glass, which when viewed from a different angle, magnifies and displays the part of the interlaced image below.
- If the lenticules are oriented vertically, then, a different image with two frames can be seen at the same time. Each eye sees a different frame, which gives out a 3D effect.
- If the lenticules are oriented horizontally, it results in a better and cleaner animated effect.

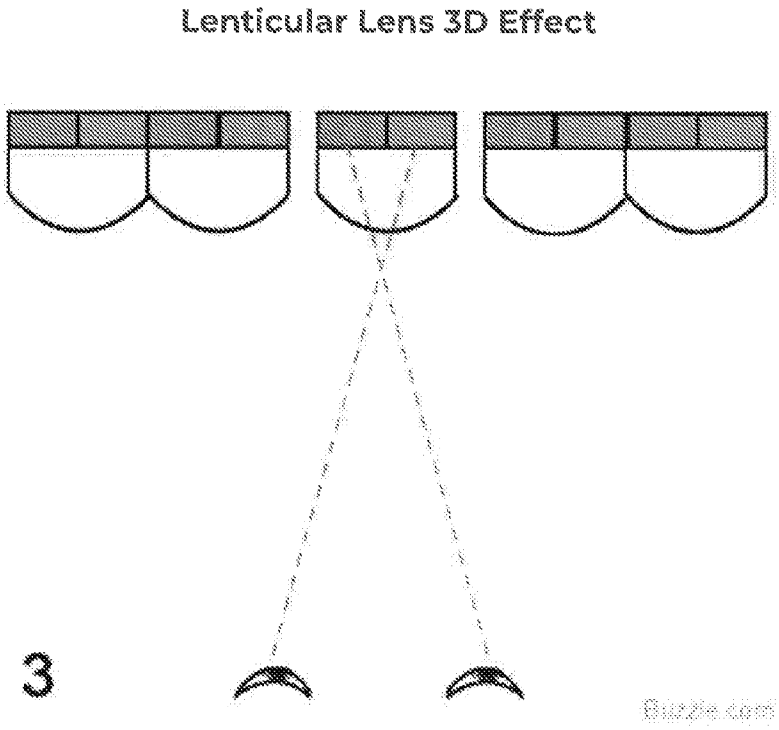
Lenticular Sheet



1

Interlacing of Sheets





Applications

The most common applications of lenticular lenses are:

- 3D displays
- Signage
- Product packaging
- Magazine inserts
- Corrective lenses in eyeglasses (Bifocals)

Lenticular lenses are mostly used in eyeglasses to rectify extreme farsightedness when implants are not feasible. This type of farsightedness may be a result of cataract surgery. The 'minus lenticular' lens, which is similar to the former, is used to rectify extreme nearsightedness. The power of the lens is concentrated into a small area in the lens's center. If the power is distributed throughout the lens, then, it would result in greater weight and thickness of the lens. The rest of the lens has little or no power, and is present just to support the lenticular portion. Lenticular lenses, typically, include only two different magnifications. One area of the lens has one refractive corrective power, whereas, the other area has different power. In case of farsightedness, the person's pupils appear larger than normal due to the design of the glasses, and smaller than normal in case of nearsightedness.

Bifocals are another type of lenticular lenses that were invented in the late 1700s. They are not for people with extreme cases of poor eyesight, but for people with a bit of both farsightedness and nearsightedness. In a typical bifocal lens, the upper part of the lens aids far-sighted vision, while the lower portion aids near-sighted vision.

Lenticular Lenses Vs. Progressive Lenses

Although it serves the same purpose, lenticular and progressive lenses work differently. Bifocal lenses have two areas of vision correction. Progressive lenses correct vision for both farsightedness and nearsightedness without any 'visible' lines of bifocal or trifocals lenses. They are an alternative to bifocals. It provides more natural vision correction. The focus can easily be changed from near to far and vice versa.

The disadvantages of progressive lenses are that they take a little longer to adapt to progressiveness; it may take a few hours to few weeks. For those who can't adjust to progressive lenses, lined bifocals are the best option.

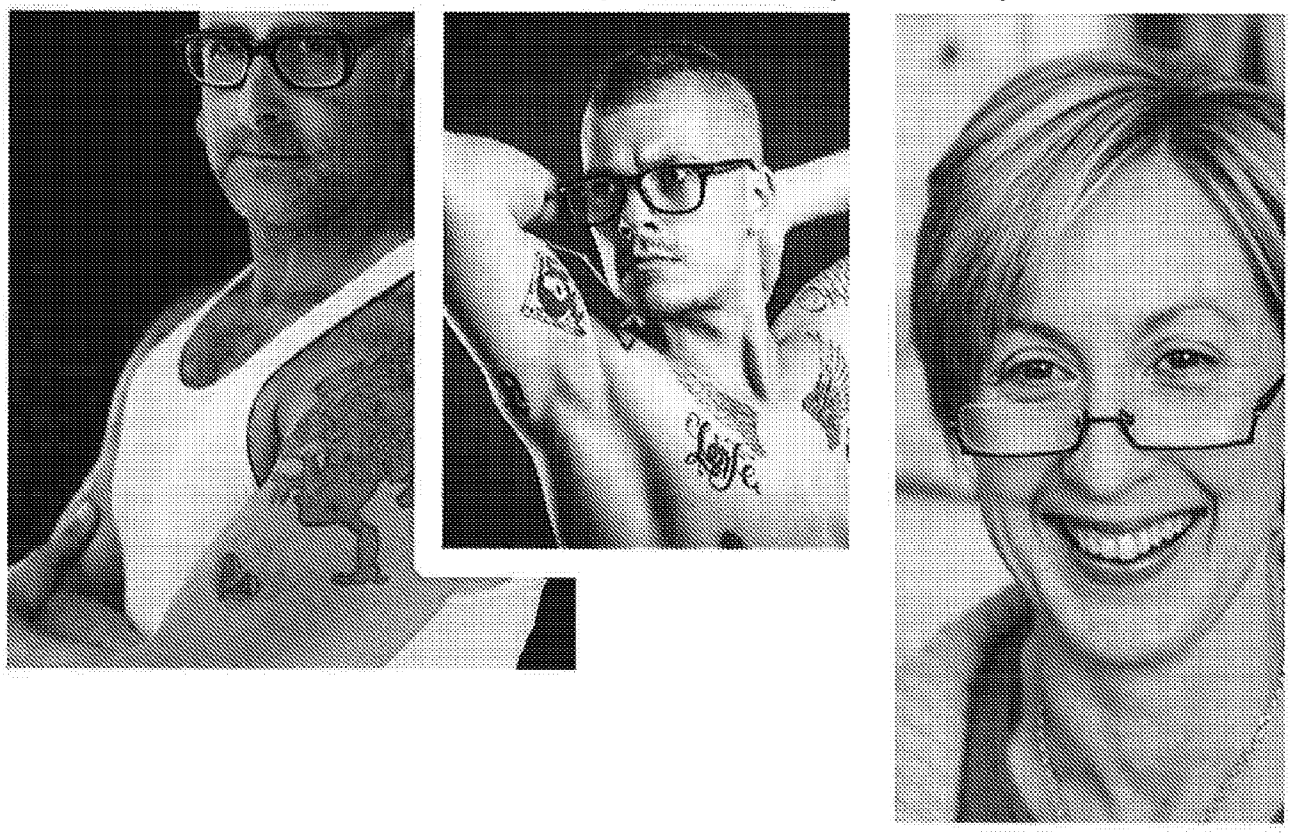
The advantages are:

- Lenticular lenses are helpful to the people suffering from extreme vision problems.
- They are what make the 3D images happen because of which there won't be any need for glasses to get the 3D effect.
- Lenticular technology is now being utilized in lenticular printing, which is specially prepared graphics designed to work with a lenticular lens. It has found its way into almost everything you can imagine, from the smallest cards to the largest posters.

The disadvantages are:

- There are only a few spots where images are perfectly clear and consistent. Changing your viewing angle slightly might distort the image or video.
- Lenticular eyeglasses may not always be flattering to the person wearing it.

Lenticular lens is also called "fried egg" because of its resemblance to one i.e. a hemisphere on top of a flat surface. The hemisphere is the lens and the 'flat surface' is the carrier lens that has little or no power at all, and is present to support the rest of the glass frame. So, that was a brief overview about lenticular lenses that you should know about.



Types of Diodes

List of Famous Physicists

Deepest Part of the Ocean

Interesting Facts About Hurricanes

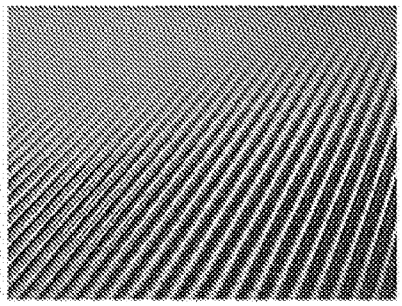
Facts about Oxygen

What Causes Lightning

WIKIPEDIA

Lenticular lens

A **lenticular lens** is an array of magnifying lenses, designed so that when viewed from slightly different angles, different images are magnified.[1] The most common example is the lenses used in lenticular printing, where the technology is used to give an illusion of depth, or to make images that appear to change or move as the image is viewed from different angles.



A series of cylindrical lenses molded in a plastic substrate.

Contents

Applications

Lenticular printing

Lenticular printing is a multi-step process consisting of creating a lenticular image from at least two existing images, and combining it with a lenticular lens. This process can be used to create various frames of animation (for a motion effect), offsetting the various layers at different increments (for a 3D effect), or simply to show a set of alternate images which may appear to transform into each other.

Israeli artist, Yaacov Agam uses lenticular printing as a key element in the construction of his kinetic art creations.

Corrective lenses

Lenticular lenses are sometimes used as corrective lenses for improving vision. A bifocal lens could be considered a simple example.

Lenticular eyeglass lenses have been employed to correct extreme hyperopia (farsightedness), a condition often created by cataract surgery when lens implants are not possible. To limit the great thickness and weight that such high-power lenses would otherwise require, all the power of the lens is concentrated in a small area in the center. In appearance, such a lens is often described as resembling a fried egg: a hemisphere atop a flat surface. The flat surface or "carrier lens" has little or no power and is there merely to fill up the rest of the eyeglass frame and to hold or "carry" the lenticular portion of the lens. This portion is typically 40 mm in diameter but may be smaller, as little as 20 mm, in sufficiently high powers. These lenses are generally used for plus (hyperopic) corrections at about 12 diopters or higher. A similar sort of eyeglass lens is the myodisc, sometimes termed a minus lenticular lens, used for very high negative (myopic) corrections. More aesthetic aspheric lens designs are sometimes fitted.[2] A film made of cylindrical lenses molded in a plastic substrate as shown in above picture, can be applied to the inside of standard glasses to correct for diplopia. The film is typically applied to the eye with the good muscle control of direction. Diplopia (also known as double vision) is typically caused by a sixth cranial nerve palsy that prevents full control of the muscles that control the direction the eye is pointed in. These films are defined in the number of degrees of correction that is needed where the higher the degree, the higher the directive correction that is needed.

Lenticular screens

Screens with a molded lenticular surface are frequently used with projection television systems. In this case, the purpose of the lenses is to focus more of the light into a horizontal beam and allow less of the light to escape above and below the plane of the viewer. In this way, the apparent brightness of the image is increased.

Ordinary front-projection screens can also be described as lenticular. In this case, rather than transparent lenses, the shapes formed are tiny curved reflectors.

3D television

As of 2010, a number of manufacturers were developing auto-stereoscopic high definition 3D televisions, using lenticular lens systems to avoid the need for special spectacles. One of these, Chinese manufacturer TCL, was selling a 42" LCD model —the TD-42F—in China for around US$20,000.[3]

Lenticular color motion picture processes

Lenticular lenses were used in early color motion picture processes of the 1920s such as the Keller-Dorian system and Kodacolor. This enabled color pictures with the use of merely monochrome film stock.[4]

Angle of view of a lenticular print

The angle of view of a lenticular print is the range of angles within which the observer can see the entire image. This is determined by the maximum angle at which a ray can leave the image through the correct lenticule.

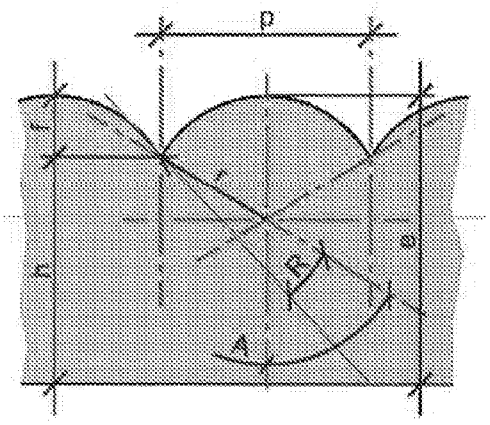
Angle within the lens

The diagram at right shows in green the most extreme ray within the lenticular lens that will be refracted correctly by the lens. This ray leaves one edge of an image strip (at the lower right) and exits through the opposite edge of the corresponding lenticule.

Definitions

- R is the angle between the extreme ray and the normal at the point where it exits the lens,

- p is the pitch, or width of each lenticular cell,
- r is the radius of curvature of the lenticule,
- e is the thickness of the lenticular lens
- h is the thickness of the substrate below the curved surface of the lens, and
- n is the lens's index of refraction.



Calculation

$$R = A - \arctan\left(\frac{p}{h}\right),$$

where

$$A = \arcsin\left(\frac{p}{2r}\right),$$

$h = e - f$ is the distance from the back of the grating to the edge of the lenticule, and

$$f = r - \sqrt{r^2 - \left(\frac{p}{2}\right)^2}.$$

Angle outside the lens

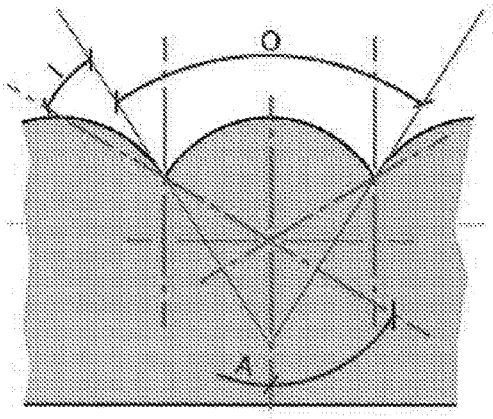
The angle outside the lens is given by refraction of the ray determined above. The full angle of observation O is given by

$$O = 2(A - I),$$

where I is the angle between the extreme ray and the normal *outside* the lens. From Snell's Law,

$$I = \arcsin\left(\frac{n\sin(R)}{n_a}\right),$$

where $n_a \approx 1.003$ is the index of refraction of air.



Example

Consider a lenticular print that has lenses with 336.65 μm pitch, 190.5 μm radius of curvature, 457 μm thickness, and an index of refraction of 1.557. The full angle of observation O would be 64.6°.

Rear focal plane of a lenticular network

The focal length of the lens is calculated from the lensmaker's equation, which in this case simplifies to:

$$F = \frac{r}{n-1},$$

where F is the focal length of the lens.

The back focal plane is located at a distance BFD from the back of the lens:

$$BFD = F - \frac{e}{n}.$$

A negative BFD indicates that the focal plane lies *inside* the lens.

In most cases, lenticular lenses are designed to have the rear focal plane coincide with the back plane of the lens. The condition for this coincidence is $BFD = 0$, or

$$e = \frac{nr}{n-1}.$$

This equation imposes a relation between the lens thickness e and its radius of curvature r.

Example

The lenticular lens in the example above has focal length 342 µm and back focal distance 48 µm, indicating that the focal plane of the lens falls 48 micrometers *behind* the image printed on the back of the lens.

See also

- Fresnel lens, a different 'flat' lens technology
- Integral imaging
- Microlens

References

1. "Lenticular, how it works" (https://web.archive.org/web/20160503192511/http://www.lenstarlenticular.com/Lenstar/lenticular.htm). Lenstar.org. Archived from the original (http://www.lenstarlenticular.com/Lenstar/lenticular.htm) on 2016-05-03. Retrieved 2017-05-25.
2. Jalie, Mo (2003). *Ophthalmic Lenses and Dispensing* (https://books.google.com/books?id=ZI45vQkISCwC&pg=PA173&dq=dispensing+for+aphakia#PPA178,M1). Elsevier Health Sciences. p. 178. ISBN 0-7506-5526-7.
3. "Give Me 3D TV, Without The Glasses" (http://www.tomsguide.com/us/3DTV-autostereoscopic-CES,review-1490.html). Archived (https://web.archive.org/web/20100213134834/http://www.tomsguide.com/us/3DTV-autostereoscopic-CES%2Creview-1490.html) from the original on 13 February 2010. Retrieved 6 May 2010.
4. "Lenticular films on Timeline of Historical Film Colors" (http://zauberklang.ch/filmcolors/cat/lenticular-screen/). Archived (https://web.archive.org/web/20140709072750/http://zauberklang.ch/filmcolors/cat/lenticular-screen/) from the original on 9 July 2014. Retrieved 29 June 2014.

- Bartholdi, Paul (1997). "Quelques notions d'optique" (http://obswww.unige.ch/~bartho/Optic/Optic/node1.html) (in French). Observatoire de Genève. Retrieved 2007-12-19.
- Soulier, Bernard (2002). "Principe de fonctionnement de l'optique lenticulaire" (http://www.sequence3d.com/fr_pages/optique.html) (in French). Séquence 3d. Retrieved 2007-12-22.
- Okoshi, Takanori *Three-Dimensional Imaging Techniques* Atara Press (2011), ISBN 978-0-9822251-4-1.

External links

- Lecture slides covering lenticular lenses (http://www.cs.berkeley.edu/~jfc/DR/F03/lectures/lec27/lec27.ppt) (PowerPoint) by John Canny
- Choosing the right lenticular sheet for inkjet printer (http://www.vicgi.com/DIY-lenticular-print.html)

- http://www.microlens.com/pdfs/history_of_lenticular.pdf

Electronic Patent Application Fee Transmittal

Application Number:	15492344
Filing Date:	20-Apr-2017
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Filer:	Clement Alphonse Berard/Dawn Underwood
Attorney Docket Number:	0096-P06343US01 (SL-727)

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	1	50	50
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	4	230	920
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**970**

Electronic Acknowledgement Receipt

EFS ID:	34668402
Application Number:	15492344
International Application Number:	
Confirmation Number:	3062
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Customer Number:	110
Filer:	Clement Alphonse Berard/Dawn Underwood
Filer Authorized By:	Clement Alphonse Berard
Attorney Docket Number:	0096-P06343US01 (SL-727)
Receipt Date:	21-DEC-2018
Filing Date:	20-APR-2017
Time Stamp:	11:23:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$970
RAM confirmation Number	122118INTEFSW00011943041406
Deposit Account	041406
Authorized User	Dawn Underwood

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

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		STREAMLIGHT-727-AM1.pdf	161506 660265e5402c7ad80e8dd1e3d040aa643b0b0aa4	yes	22

Multipart Description/PDF files in .zip description

Document Description	Start	End
Fee Worksheet (SB06)	22	22
Applicant Arguments/Remarks Made in an Amendment	11	21
Claims	2	10
Amendment/Req. Reconsideration-After Non-Final Reject	1	1

Warnings:

Information:

2	Applicant Arguments/Remarks Made in an Amendment	SL-727-AM1-Exhibit.pdf	963572 0b4dd90cdf5bd6da3ad7876e7cc6c7cd1b87c0db	no	19

Warnings:

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	32075 c7b4ac0cbf99cf325a8c4c42837e32425efb3f66	no	2

Warnings:

Information:

Total Files Size (in bytes):	1157153

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.

FEE TRANSMITTAL	*Complete if known*
	Application Number: 15/492344
	Filing Date: April 20, 2017
	First Named Inventor: Raymond L. Sharrah
	Group Art Unit: 2875
	Examiner Name: Nathaniel Lee
Small Entity Status [X]	Attorney Docket No. 0096-P06343US01 (SL-727)
Total Amt. of Payment: (1) + (2) + (3) =	**$970**

METHOD OF PAYMENT (check one)

1. The Commissioner is hereby authorized to:
   - **[X] Charge indicated fees**
   - **[X] Charge additional fees**
   - **[X] Credit overpayments**

   to the account of DANN, DORFMAN, HERRELL & SKILLMAN
   Deposit Account Number 04-1406

2. **Payment enclosed:**
   In the amount of $970

FEE CALCULATION

1. **FILING FEE**

Fee Description	Fee
Utility filing fee	
Design filing fee	
Plant filing fee	
Reissue filing fee	
SUBTOTAL (1)	0

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Fee Description	Fee
Surcharge - late filing fee or oath	
Surcharge - late provisional filing fee or cover	
Extension for response within ____ month	
Notice of Appeal	
Filing a brief in support of an appeal	
Request for oral hearing	
Petition to revive unavoidably abandoned appl.	
Petition to revive unintentionally abandoned	
Issue Fee	
Publication Fee	
Petitions to the Commissioner	
Request for Continued Examination (RCE)	
Submission of Information Disclosure Stmt.	
Submission of Terminal Disclaimer	
Recording each patent assignment per property	
Other fee (specify)_____	
SUBTOTAL (3)	$0

2. **Claims**

	Total	Paid		Extra			=	Fee
Total Claims	31	- 30	=	1	x	50	=	50
Independent Claims	8	- 4	=	4	x	230	=	920
Multiple Dependent (First Presented)								

SUBTOTAL (2) $970

Submitted By: Clement A. Berard **Reg. Number** 29,613

Signature /Clement.A.Berard/ **Date** December 21, 2018 **Deposit Account ID** 04-1406

REMARKS

Claims 1-30 are pending in the captioned Application in which claims 1-4, 6-14, 16-24 and 26 are rejected, claims 27-30 are allowed, claims 5, 15 and 25 are objected-to as depending from a rejected base claim and would be allowable if rewritten in independent form.

Claims 1, 11 and 23 are clarified regarding the cylindrical lens receiving light from the laser element on a first part of its cylindrical surface and emitting the plane of laser light from a second part of its cylindrical surface. Support therefor may be found at least in, e.g., Figs. 6A-6C and paragraphs [051] - [052], [055] -[057], [065], [080] and [082] of the description.

This amendment does not narrow the scope of any claim element or limitation and so is not limiting of any claim element or limitation, and Applicant reserves the right to the benefit of the doctrine of equivalents with respect thereto.

This Response is made in the interest of expediting prosecution and should not be construed as an admission or as an acquiescence in the validity or correctness of any rejection that may have been made or of any reason or reasons therefor.

Information Disclosure Statement:

Examiner states on page 2 of the Office Action that the Information Disclosure Statement submitted on June 15, 2017 does not comply with 37 CFR §1.98(a)(1).

Applicant respectfully disagrees.

The Information Disclosure Statement filed by Applicant does indeed comply with each of the requirements enumerated in 37 CFR §1.98(a)(1) and which are stated in the Office Action. All citations should have been considered and made of record.

On October 9, 2018 Examiner Lee indicated by telephone that the U.S.P.T.O. computer issue that had obscured part of Applicant's Information Disclosure Statement had been resolved

and that he now sees and will consider all of the citations.

Applicant thanks Examiner Lee for following up, and requests confirmation in the next communication that all of the citations made in the Information Disclosure Statement of June 15, 2017 have in fact been considered and made of record.

Objections:

Claims 5, 15 and 25 are objected to because they depend from a rejected base claim.

The objection is moot because Claims 5, 15 and 25 are amended to include the limitations of claims 1, 11 and 23 from which they respectively depend.

Accordingly, the objection should be withdrawn and claims 5, 15 and 25 allowed.

Rejections Under 35 U.S.C. §103:

Claims 1-2, 6-12, 16-21, 23-24 and 26 are rejected under 35 U.S.C. §103 as being unpatentable over US 2011/0163698 to Spartano in view of US 6,864,799 to Popps.

The rejection is respectfully traversed.

Spartano relates to a lighting device 10 having switched modes wherein three-position toggle switch 40 enables a white LED 22 or four colored LEDS 24 (blue), 26 (red), 28 (green) & 30 (IR) or disables all of the LEDs. All of the LEDs of Spartano produce an illumination beam of white or colored light; none are a laser. (Figs. 1, 3, 7A & ; Paras. [0052], [0055]).

Spartano expressly describes the lighting device 10 is for providing multiple lighting options and having a control switch for controlling the operating modes of those multiple light sources (Paras. [0002], [0006]-[0008]), as contrasted with conventional incandescent and light emitting diode lights where a separate switch provides on/off control of each single light source (Para. [0003]). Spartano's light is expressly to provide "light illumination" (Para. [0047]).

Nothing in Spartano describes or suggests that any configuration of LEDs or light sources other than visible light sources for visible illumination and an IR light source for IR illumination

be employed. Nothing in Spartano provides any motivation for replacing any of the illumination LEDS with anything other than another illumination light source producing a conventional illumination light source beam.

Popps relates to an emergency lighting device 10 for firefighters that is to be mounted near to a viable exit so that the exit may be located. The device 10 has laser diodes 36, 38, 40, 42 that each has a lens 46 that diffracts the laser beam to fan out to produce a flat pane or sheet of laser light to provide lines on the floor and walls that lead back to, i.e. converge at, the device. The laser diodes are arranged at different angles so as to provide different vertical panes or sheets of laser light that each provides a line leading back to the emergency device 10 which is to be mounted near an exit. (Abstract; Figs. 1 & 3; Col. 3, line 39, to col. 4, line 14).

That functionality would be completely absent if a firefighter were to carry the Popps device and the plural panes of laser light would cast lines on walls and/or floors that merely converge at the firefighter, and would provide no indication of where an exit might be.

That is why the Popps' device is to be set up and attached at a fixed location, i.e. at a viable door or window exit, and not to be carried. Firefighters therefore will look towards the Popps device at which the lines of laser light converge. In this intended use there is no need for any illumination light beam and none is described or suggested by Popps.

It is submitted that if Popps were to include an illumination light beam, that light beam would be directed towards the firefighters seeking to locate an exit and would reduce their ability to see ahead, and to locate the exit, especially in a smokey environment, thereby increasing the risk that the firefighters would not locate a safe exit. Thus, Popps' device is seen to teach away from including an illumination light source, and therefore from it being combined with Spartano.

Moreover, lenses 46 are lenticular devices described as diffracting laser light from laser diodes 36, 38, 40 & 42, (Col. 3, lines 1-14), and this is not seen as a suggestion by Popps of a cylindrical lens as Applicant describes and claims. Diffraction gratings (lenses) are different physically and optically from the cylindrical lens described and claimed by Applicant.

Applicant points to the definitions and discussions of the well known lenticular lens, e.g.,

as discussed in: the Lens Star web page at *www.lenstarlenticular.com/lenticular-lenses/,* the Science Struck web page at *sciencestruck.com/lenticular-lenses-working-principle-its-advantages-disadvantages*, and the Wikipedia article at *en.wikipedia.org/wiki/Lenticular_lens*,
all of which show that a lenticular lens has one ribbed or corrugated surface that defines plural magnifying elements and one flat (smooth) surface. These diverse sources confirm that such lenticular lens as Popps describes is not a cylindrical lens as Applicant describes and claims. A copy of each web page is included as an Exhibit hereto for the Examiner's convenience.

Even if the corrugations of Popps' lenticular lens were to be arcs (i.e. less than half) of a cylinder, e.g., as may be in Fig. 8, there is no lens in the form of a cylinder that both receives a laser beam that passes through the cylindrical lens and emits the same laser beam as a plane of laser light as claimed; neither is there seen any suggestion thereof.

Neither does Spartano describe or suggest a cylindrical lens as described and claimed by Applicant, or that a portable light include an illumination light source and a laser light source that emits a plane of laser light.

In addition, looking at Fig. 1 of Popps, diffraction lenses 46 for all of the laser diodes 36, 38, 40, 42 are in the same orientation, e.g., whereby each produces a vertical plane of laser light when the Popps device 10 is mounted in the manner described and illustrated, as would be necessary to create lines, e.g., on walls and floors, leading back to the Popps device for marking an exit, which is the express object that Popps sets forth repeatedly, e.g., in the Abstract, and at column 1, line 63, through column 2, line 49.

It is further noted that the Popp device is <u>not</u> a portable light as claimed because (1) it does not have an illumination source and (2) is not intended to be carried by a user, but to be mounted in a fixed location near an exit. Moreover, Popps argues against providing an illumination source at column 1, lines 21-25, because a conventional flashlight beam does not penetrate very far through smoke, and tends to produce glare that reduces visibility.

Thus Popps has no relevance to a portable light which operates for a different function, in a different way, to produce a different result. Popps lacks the function, way and result of

Applicant's device and so is not properly combinable for alleging obviousness.

Accordingly, both Spartano and Popps lack any suggestion or motivation for their being combined, and so such purported combination is legally improper. It is submitted that only Applicant teaches a portable light using a cylindrical lens to provide a plane of laser light in addition to a light source producing an illumination beam. This asserted combination of Spartano and Popps is not supported by the references, but is based upon impermissible hindsight based upon the teaching of Applicant's invention.

> "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments relying on *ex post* reasoning. See *Graham* [v. John Deere, 383 U.S. 1, (1966)] at 36,... (warning against a 'temptation to read into the prior art the teachings of the invention in issue' and instructing courts to 'guard against slipping into the use of hindsight'...)."

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 421, 82 USPQ2d 1385, 1397 (2007).

> "When prior art references require selective combination...to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself..."

Uniroyal Inc. vs. Rudkin-Wiley Corp., 5 U.S.P.Q.2d 1434, 1438 (Fed. Cir. 1988). It is impermissible to use the claims as a frame and the prior art references as a mosaic to piece together a facsimile of the claimed invention, and the Examiner must avoid the "insidious effect of a hindsight syndrome wherein only that which the inventor taught is used against the teacher". *W. L. Gore & Assoc. v. Garlock*, 721 Fed.2d 1540, 1552, 1553, 220 U.S.P.Q. 303, 312, 313 (Fed. Cir. 1988).

The purported combination is also improper under the law because the record lacks a proper suggestion or motivation for the combination of Spartano with Popps; the Examiner's *post hoc* conclusory statement is not legally sufficient to support the purported combination. "It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR Int'l*

Co. v. Teleflex Inc., 550 U.S. 398, 418; 82 USPQ2d 1385, 1396 (2007).

Absent some statement or suggestion that the references should be combined, there is no nexus which could substantiate the suggested combination.

> "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so."

ACS Hospital Systems, Inc. vs. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984).

The burden is on the Examiner to particularly identify the suggestion, teaching, or motivation for combining the references, and not just naming similarities between the reference(s) and the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 Fed.3d 654 (Fed. Cir. 2000), 57 U.S.P.Q.2d 1161, 1166; *In re Dembiczak*, 175 Fed.3d 994 (Fed. Cir. 1999), 50 U.S.P.Q.2d 1614, 1618.

> "[A] rejection cannot be predicated on the mere identification ... of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed."

Ecolochem Inc. v. Southern California Edison, 56 U.S.P.Q.2d 1065, 1076 (Fed. Cir. 2000) quoting *In re Rouffet*, 149 Fed.3d 1350, 1357 (Fed. Cir. 1998), 47 U.S.P.Q.2d 1453, 1456.

Accordingly, the purported combination of Spartano and Popps is legally improper and the rejections based upon such combination should be withdrawn.

The Examiner's alleged reason for the combination is circular and conclusory, and assumes Popps' objective of "providing a beacon creating lines of light leading to an exit in an emergency situation." While that appears to be Popps objective, Popps accomplishes that objective without any of the features of Spartano. Moreover, that is not seen as Applicant's objective, and the Examiner has not pointed to any basis for the assertion.

Thus, the portable light of Applicant's claim 1 is patentable at least because it recites:

> "a light body for receiving a source of electrical power;
> "a white light source supported by said light body and selectively energizable for producing white light;
> "a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light; and
> "a switch supported by said light body for selectively energizing said white light source from the source of electrical power, and for selectively energizing said laser light source from the source of electrical power,"

which is not described or suggested by Spartano and/or Popps, whether taken individually or properly combined.

The portable light of Applicant's claim 11 is patentable at least because it recites:

> "a light body for receiving a source of electrical power;
> "an illumination light source supported by said light body and selectively energizable for producing illumination light;
> "a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light; and
> "a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power,"

which is not described or suggested by Spartano and/or Popps, whether taken individually or properly combined.

The portable light of Applicant's claim 23 also is patentable at least because it recites:

> "a light body for receiving a source of electrical power and having a base end;

> "an illumination light source supported by said light body relatively nearer to an end thereof that is remote to the base end thereof, said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light;
>
> "a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted; and
>
> "a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power,"

which is not described or suggested by Spartano and/or Popps, whether taken individually or properly combined.

Applicant's claims 2, 6-10, 12, 16-21, 24 and 26 are patentable at least because they depend from one of patentable claims 1, 11 and 23. In addition, claims 8, 10, 18 and 20 recite that the laser light source is rotatable or repositionable, and claim 9 recites that the laser light source is supported by a clear optical element of the white light source, none of which is described or suggested by Spartano and/or Popps, whether taken individually or in proper combination.

Claims 3-4 and 13-14 are rejected under 35 U.S.C. §103 as being unpatentable over Spartano and Popps, and further in view of US 7,114,861 to Tung.

The rejection is respectfully traversed.

Spartano and Popps are discussed above. Tung relates to a laser module with trimming capacity in which the laser module 20 has an indented portion 212 on an external surface thereof which is "for implementing insertions and rotations." The indented portion 212 is for receiving

implements, e.g., tools, for rotating the laser module 20 for alignment thereof. (Column 3, lines 2-5, 39-63). Nothing in Tung is seen to describe or suggest that a registration feature be provided.

The combination of Spartano, Popps and Tung is improper because the combination of Spartano and Popps is improper for the reasons above; and so the rejection should be withdrawn.

Applicant's claims 3-4 and 13-14 are patentable at least because they depend from one of patentable claims 1 and 11. In addition, claims 3-4 and 13-14 recite a registration feature in registration with the cylindrical lens, which is not described or suggested by Spartano and/or Popps and/or Tung, whether taken individually or in proper combination.

Accordingly, the rejections under 35 U.S.C. §103 are overcome and should be withdrawn.

Allowable Subject Matter:

The objection to claims 5, 15 and 25 is moot because claims 1, 11 and 23 from which Claims 5, 15 and 25 depend are patentable at least for the reasons set forth herein.

Claims 27-30 have been allowed.

Applicant submits that each of the claims, including the allowed claims and the objected to claims, is allowable in its own right because of the particular combination of elements that each recites.

Withdrawal of the objection is in order and such action is solicited.

Additional Claim:

Claim 31 is newly added and finds support at least in original claims 1, 5, 13, 15, 23, 25 and 27, and is allowable at least for substantially the reasons stated regarding claims 15 and 27. Support for claim 31 is also found at least in, e.g., Figures 1C, 2, 3, 4, 5A-5D, 6A-6C, 7A, 7C-

7D, and the respective descriptions thereof.

No new matter is added.

Claim 31 is therefore patentable and its allowance is respectfully solicited.

Conclusion:

Applicant respectfully requests that the objections and rejections be withdrawn, and that the Application including claims 1-31 be allowed and passed to issuance.

Please charge $970 in payment of the fee for increasing the number of independent claims by four and the total number of claims by one in this timely-filled response, to Deposit Account 04-1406 of Dann, Dorfman, Herrell & Skillman. A Fee Transmittal is submitted herewith.

Should the fee calculation or the fee enclosed be incorrect or missing, or should any fee, other fee or additional fee be due in consequence of this paper, please charge such fee and deposit any refund to Deposit Account 04-1406 of Dann, Dorfman, Herrell & Skillman.

Applicant requests a telephone interview with the Examiner (and a supervisor with authority to reach agreement if Examiner lacks such authority) if any issues remain unresolved after entry of this Response.

Respectfully submitted,
DANN, DORFMAN, HERRELL & SKILLMAN, P.C.
Attorneys for Applicant

By: */Clement.A.Berard/*
Clement A. Berard
U.S.P.T.O. Registration No. 29,613

December 21, 2018

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Telephone: 215-563-4100
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Enc: Fee Transmittal
Exhibit – Web pages (19 sheets)

AMENDMENT TO THE CLAIMS:

1. (Currently Amended) A portable light comprising:

a light body for receiving a source of electrical power;

a white light source supported by said light body and selectively energizable for producing white light;

a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said white light source from the source of electrical power, and for selectively energizing said laser light source from the source of electrical power.

2. (Original) The portable light of claim 1 wherein the laser emission element comprises a laser diode.

3. (Original) The portable light of claim 1 wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens.

4. (Original) The portable light of claim 3 wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens.

5. (Currently Amended) ~~The portable light of claim 1~~ A portable light comprising:

a light body for receiving a source of electrical power;

a white light source supported by said light body and selectively energizable for producing white light;

a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said white light source from the source of electrical power, and for selectively energizing said laser light source from the source of electrical power; and

wherein said white light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface.

6. (Original) The portable light of claim 1 wherein said switch is operable so that only one of said white light source and said laser light source is active at a given time.

7. (Original) The portable light of claim 1 wherein said white light source and said laser light source emit light in substantially the same direction.

8. (Original) The portable light of claim 1 wherein said laser light source is configured:
for rotating the plane of laser light relative to said light body; or
for repositioning the plane of laser light relative to said light body.

9. (Original) The portable light of claim 1 wherein said laser light source is supported by a shaped optical element of said white light source or is supported by a receptacle of said

light body or is supported at a distal end of a flexible stalk supported by said light body.

10. (Original) The portable light of claim 9 wherein said laser light source is configured:

for rotating the plane of laser light relative to said light body; or

for repositioning the plane of laser light relative to said light body.

11. (Currently Amended) A portable light comprising:

a light body for receiving a source of electrical power;

an illumination light source supported by said light body and selectively energizable for producing illumination light;

a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

12. (Original) The portable light of claim 11 wherein the laser emission element comprises a laser diode.

13. (Original) The portable light of claim 11 wherein said laser light source includes a registration feature on an external surface thereof disposed in registration with a longitudinal axis of the cylindrical lens.

14. (Original) The portable light of claim 13 wherein the registration feature has an axis oriented perpendicular to the longitudinal axis of the cylindrical lens.

15. (Currently Amended) ~~The portable light of claim 11~~ A portable light comprising:

a light body for receiving a source of electrical power;

an illumination light source supported by said light body and selectively energizable for producing illumination light;

a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power; and

wherein said illumination light source includes a shaped optically clear element having a polished curved external side surface and a generally wider flat forward surface whereat the illumination light exits said illumination light source through the flat forward surface, and wherein said laser light source is supported by said shaped optically clear element.

16. (Original) The portable light of claim 11 wherein said switch is operable so that only one of the illumination light source and laser light source is energized at a given time.

17. (Original) The portable light of claim 11 wherein said illumination light source and said laser light source emit light in substantially the same direction.

18. (Original) The portable light of claim 11 wherein said laser light source is configured:

for rotating the plane of laser light relative to said light body; or

for repositioning the plane of laser light relative to said light body.

19. (Original) The portable light of claim 11 wherein said laser light source is supported by a shaped optical element of said illumination light source or is supported by a receptacle of said light body or is supported at a distal end of a flexible stalk supported by said light body.

20. (Original) The portable light of claim 19 wherein said laser light source is configured:

for rotating the plane of laser light relative to said light body; or

for repositioning the plane of laser light relative to said light body.

21. (Original) The portable light of claim 20 wherein said laser light source:

is supported by a reflective element of said illumination light source and is rotatable relative thereto; or

is supported by a receptacle of said light body and is rotatable relative thereto; or

is supported on a flexible stalk that is attached to said light body.

22. (Original) The portable light of claim 11 wherein said laser light source further includes a support for said cylindrical lens, wherein:

the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical

lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body.

23. (Currently Amended) A portable light comprising:

a light body for receiving a source of electrical power and having a base end;

an illumination light source supported by said light body relatively nearer to an end thereof that is remote to the base end thereof, said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light;

a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

24. (Original) The portable light of claim 23 wherein said laser light source is:

supported in a fixed location that is relatively nearer to the base end of said light body than is said illumination light source; or

supported on a flexible stalk that is relatively nearer to the base end of said light body than is said illumination light source.

25. (Currently Amended) ~~The portable light of claim 23~~ A portable light comprising:

a light body for receiving a source of electrical power and having a base end;

an illumination light source supported by said light body relatively nearer to an end thereof that is remote to the base end thereof, said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light;

a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power; and

wherein said laser light source further includes a support for said cylindrical lens, wherein:

the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or

the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body.

26. (Original) The portable light of claim 23 wherein said switch is operable so that only one of the illumination light source and laser light source is energized at a given time.

27. (Original) A portable light comprising:

a light body for receiving a source of electrical power;

an illumination light source supported by said light body and selectively energizable for producing illumination light, wherein said illumination light source includes a shaped optically clear element having a polished curved external side surface and a flat forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body;

a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

28. (Original) The portable light of claim 27 wherein the plane of laser light is emitted substantially in the predetermined direction relative to said light body, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted.

29. (Original) The portable light of claim 27 wherein said laser light source further includes a support for said cylindrical lens that is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens and the plane of laser light transmitted thereby are rotatable relative to said light body.

30. (Original) The portable light of claim 27 wherein said switch is operable so that only one of said illumination light source and said laser light source is energized at a given time.

31. (New) A portable light comprising:

a light body for receiving a source of electrical power;

an illumination light source supported by said light body and selectively energizable for producing illumination light, wherein said illumination light source includes a shaped optically clear element having a curved external side surface and a forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body;

a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light; and

a switch supported by said light body for selectively energizing said illumination light source from the source of electrical power and for selectively energizing said laser light source from the source of electrical power.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/492,344	Filing Date 04/20/2017	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/21/2018	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 30	= 1		x $50 =	50
	Independent (37 CFR 1.16(h))	* 8	Minus	*** 4	= 4		x $230 =	920
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	970

		(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".	/ANNETTE V SMITH/
*** 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.

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 1 OF 1	**Attorney Docket Number: 0096-P06343US01 (SL-727)**

April 10, 2019

UNITED STATES PATENT DOCUMENTS				
EXAMINER'S INITIALS	CITE NO.	PATENT NUMBER	ISSUE DATE MM-DD-YYYY	FIRST NAMED INVENTOR
		7188978	03-13-2007	Sharrah et al.
		D548385	08-07-2007	Sharrah et al.
		D611629	03-09-2010	Sharrah et al.
		8287157	10-16-2012	Sharrah et al.
		9772163	09-26-2017	Sharrah et al.

UNITED STATES PUBLISHED PATENT DOCUMENTS				
EXAMINER'S INITIALS	CITE NO.	PUBLICATION NUMBER	PUBLICATION DATE MM-DD-YYYY	FIRST NAMED INVENTOR
		2005/0122710	06-09-2005	Kim
		2005/0185403	08-25-2005	Diehl
		2006/0233215	10-19-2006	Casazza
		2012/0326635	12-27-2012	Redpath et al.
		2014/0268703	09-18-2014	Ehlert et al.
		2015/0276347	10-01-2015	Sharrah et al.
		2016/0018071	01-21-2016	Sharrah et al.

OTHER CITATIONS		
EXAMINER'S 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, page(s), volume-issue number(s), publisher, city and/or country where published
	06	RP Photonics Encyclopedia of Laser Physics and Technology, "Beam Splitters", printed 6/15/2017, 2 pages, https://www.rp-photonics.com/beam_splitters.html
	07	Edmund Optics, "What are Beamsplitters?", printed 6/15/2017, 5 pages, https://www.edmundoptics.com/resources/application-notes/optics/what-are-beamsplitters/
	08	Wikipedia, "Beam Splitter", last edited 21 March 2017, printed 6/15/2017, 6 pages, https://en.wikipedia.org/wiki/beam_splitter
	09	PCT International Searching Authority, "Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, or the Declaration", in International Application No. PCT/US2018/040249, mailed 9/21/2018, 10 pages

EXAMINER'S SIGNATURE		**DATE CONSIDERED**	

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

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: CLEMENT A. BERARD, ESQ.
DANN, DORFMAN, HARRELL & SKILLMAN, PC
1601 MARKET STREET, SUITE 2400
PHILADELPHIA, PA 19103

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 0096P06476WO	Date of mailing *(day/month/year)* 21 SEP 2018 FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US 18/40249	International filing date *(day/month/year)* 29 June 2018 (29.06.2018)
Applicant STREAMLIGHT, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

   For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **22 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Lee W. Young PCT Helpdesk: 571-272-4300 Telephone No. PCT OSP: 571-270-7774

Form PCT/ISA/220 (July 2014)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 0998P06476WO	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 18/40249	International filing date *(day/month/year)* 29 June 2018 (29.06.2018)	(Earliest) Priority Date *(day/month/year)* 30 June 2017 (30.06.2017)
Applicant STREAMLIGHT, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the drawings to be published with the abstract is Figure No. 1C

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 16/40249

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - F21L 4/02; F21W 111/00; F21Y 113/20 (2018.01)
CPC - F21L 4/02, F21L 4/025; F21W 2111/10; F21Y 2113/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See Search History Document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History Document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History Document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0165403 A1 (DIEHL) 25 August 2005 (25.08.2005), para [0032], [0060]-[0061]; Fig 1-2, 13	1-3, 6-10, 12, 14, 15, 17, 19, 20
Y		4, 5, 11, 16, 18
A		13
Y	US 2006/0233215 A1 (CASAZZA) 19 October 2006 (19.10.2006), abstract; para [0035]	4, 11
Y	US 2014/0268703 A1 (EHLERT et al.) 18 September 2014 (18.09.2014), para [0038], [0042], [0043], [0046]; Fig 1A, 2, 3B	5, 18
Y	US 2016/0018071 A1 (STREAMLIGHT, INC.) 21 January 2016 (21.01.2016), para [0005], [0059]; Fig 10	16
A	US 2012/0326635 A1 (REDPATH et al.) 27 December 2012 (27.12.2012), entire document	1-20
A	US 2015/0276347 A1 (STREAMLIGHT, INC.) 01 October 2015 (01.10.2015), entire document	1-20
A	US 2005/0122710 A1 (KIM) 09 June 2005 (09.06.2005), see entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 August 2018	21 SEP 2018
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (January 2015)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: CLEMENT A. BERARD, ESQ.
DANN, DORFMAN, HARRELL & SKILLMAN, PC
1601 MARKET STREET, SUITE 2400
PHILADELPHIA, PA 19103

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	21 SEP 2018
Applicant's or agent's file reference 0096P06476WO	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 18/40249	29 June 2018 (29.06.2018)	30 June 2017 (30.06.2017)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - F21L 4/02; F21W 111/00; F21Y 113/20 (2018.01)
CPC - F21L 4/02, F21L 4/025; F21W 2111/10; F21Y 2113/20

Applicant STREAMLIGHT, INC.

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [X] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	30 August 2018	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	4, 5, 11, 13, 15, 16, 18	YES
	Claims	1-3, 6-10, 12, 14, 17, 19, 20	NO
Inventive step (IS)	Claims	13	YES
	Claims	1-12, 14-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-3, 6-10, 12, 14, 17, 19 and 20 lack novelty under PCT Article 33(2) as being anticipated by US 2006/0185400 A1 (Diehl).

Regarding claim 1, Diehl discloses a portable light (see, generally, device 1300 in Fig 13) comprising:
a light body (Fig 13: 1310; para [0061]: cylindrical body 1310) for receiving a source of electrical power (Fig 13: 1312; para [0061]: body 1310 that houses one or more batteries 1312);
an illumination light source (Fig 13: 1304; para [0060]: incandescent flashlight 1304) supported by said light body (Fig 13 shows the flashlight 1304 disposed in one end of cylindrical body 1310) and selectively energizable (para [0061]: batteries 1312 are selectively connected to the ... flashlight 1304) for producing illumination light that emanates away from said light body in a predetermined direction (para [0060]: incandescent flashlight 1304 preferably can be operated separately from the lasers 1302, 1306 to provide the operator with a conventional flashlight illuminator);
one or more laser light sources supported by said light body (Fig 13: 1302, 1306; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing), along with ... a relatively low-intensity targeting laser 1306) and selectively energizable for producing laser light (para [0061]: batteries 1312 are selectively connected to the primary lasers 1302 ... and targeting laser 1306),
wherein said one or more laser light sources produce plural beams of laser light (para [0060]: In this embodiment, the two primary lasers 1302 operate as described with reference to FIGS. 1 and 2; Fig 1: 104, 106, 108, 110; para [0032]: first and second lasers 104, 106 are oriented to project a first laser beam 108 and a second laser beam 110, respectively) that emanate away from said light body substantially in the predetermined direction (Fig 1: 108, 110, A; para [0032]: oriented to project a first laser beam 108 and a second laser beam 110, respectively, generally along a first direction, as shown by reference arrow A) and that diverge from each other at a predetermined angle (para [0032]: the first and second laser beams 108, 110 may ... converge or diverge somewhat while still being oriented generally in the first direction. Such variations ... may be built into the device in order to obtain desirable beam overlapping characteristics, with divergence generally delaying beam overlap), wherein the plural beams of laser light are produced without a diffraction grating (no mention is made in Diehl of laser beam formation or beam shaping using a diffraction grating or other diffraction elements); and
a switch (Fig 13: 1308; para [0061]: a switch system comprising, in this case, three separate simple two-position switches 1308) supported by said light body (Fig 13 shows switches 1308 disposed on the body 1310; para [0062]) for selectively energizing said illumination light source from the source of electrical power and for selectively energizing at least one of said laser light sources from the source of electrical power (para [0061]-[0062]: a single multi-position switch having an off position, a flashlight position, a target laser position, and a momentary primary laser position may be used to control all three devices. The switches may be toggle switches, pushbutton switches, rotary switches, or any other type of switch).

Regarding claim 2, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said one or more laser light sources includes:
one laser light source including a laser emission element that produces a beam of laser light and an optical element that receives the beam of laser light and emits plural beams of laser light that diverge from each other at the predetermined angle; or
plural laser light sources (Fig 13: 1302; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing)) that each include a laser emission element that produces a beam of laser light (para [0060]: In this embodiment, the two primary lasers 1302 operate as described with reference to FIGS. 1 and 2; Fig 1: 104, 106, 108, 110; para [0032]: first and second lasers 104, 106 are oriented to project a first laser beam 108 and a second laser beam 110, respectively) and an optical element that emits the beam of laser light (para [0068]: beam expanders, anamorphic prism pairs, fiber optics, cylindrical lenses, collimating lenses, power-changing positive and negative lenses, adjustable auxiliary lenses and the like-the present invention does not preclude the use of such devices, and these or other devices may be used to modify the lasers' properties in any embodiment of the invention), said plural laser light sources being mounted to produce beams of laser light that diverge from each other at the predetermined angle (Fig. 1 and para [0032]: the first and second laser beams 108, 110 may ... converge or diverge somewhat while still being oriented generally in the first direction. Such variations ... may be built into the device in order to obtain desirable beam overlapping characteristics, with divergence generally delaying beam overlap); whereby plural diverging beams of laser light are emitted thereby without a diffraction grating (no mention is made in Diehl of laser beam formation or beam shaping requiring a diffraction grating or other diffraction elements).

Regarding claim 3, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said one or more laser light sources include a registration feature on an external surface thereof (Fig 1: 102, 103, 104; para [0032]: base 102 to which a first laser 104 and a second laser 106 are attached; para [0060] optical sight 1214) disposed in predetermined registration with a plane defined by the plural beams of laser light emitted therefrom (Fig. 1, by fixing the positions of lasers 104, 106 with respect to one another, the base 102 thereby functions to establish the plane defined by the plural beams of laser light para [0032], [0060]).

-- see next page

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 1 lacks clarity because the recitation of "said laser light source" (i.e., in the singular) is ambiguous as to whether this is a reference to all or only a subset of the previously recited plural laser light sources. For purposes of this written opinion "said laser light source" is taken to read "at least one of said laser light sources."

Claims 5 and 18 lack clarity because the modifying words "generally wider" in the limitation "generally wider flat forward surface" make ambiguous the relationship of the flat forward surface relative to other claim elements because neither the claim nor the specification contains guidance for how to evaluate the terms of degree "generally" and "wider," particularly when they have been compounded together. For purposes of this written opinion "generally wider flat forward surface" is taken to read "wide flat forward surface."

Claim 7 lacks clarity due to the ambiguity of reciting that "plural diverging beams of laser light that emanate away from said light body substantially in the predetermined direction" while also reciting that those same beams "define a plane that is diverging from the predetermined direction," without providing guidance for how reconcile being simultaneously both substantially parallel to and diverging from the predetermined direction. For purposes of this written opinion "define a plane that is substantially parallel to the predetermined direction or define a plane that is diverging from the predetermined direction" is taken to read "define a plane that is substantially parallel to the predetermined direction."

Claim 8 lacks clarity due to the ambiguity of reciting movability of the laser light sources with respect to the light body as "rotating the plane defined by the diverging beams of laser light" and in the alternative "repositioning the plane defined by the diverging beams of laser light." Reciting the laser light sources movability limitation with multiple alternative scopes leaves ambiguous the scope of protection for movability of the laser light sources, for this claim. For purposes of this written opinion "for rotating the plane defined by the diverging beams of laser light relative to said light body; or for repositioning the plane defined by the diverging beams of laser light relative to said light body" is taken to read "for repositioning the plane defined by the diverging beams of laser light relative to said light body by rotating the plane."

Claim 10 lacks clarity due to the ambiguity of reciting movability of the laser light sources with respect to the light body as "rotating a plane defined by the diverging beams of laser light" and in the alternative "repositioning the plane of laser light." Reciting the laser light sources movability limitation with multiple alternative scopes leaves ambiguous the scope of protection for movability of the laser light sources, for this claim . For purposes of this written opinion "for rotating a plane defined by the diverging beams of laser light relative to said light body or for repositioning the plane of laser light relative to said light body" is taken to read "for repositioning a plane defined by the diverging beams of laser light relative to said light body by rotating the plane."

Claim 11 lacks clarity due to the ambiguity of "supported by a reflective element of said illumination light source and is rotatable relative thereto," which does not make clear whether the laser light source claim element is rotatable relative to the "reflective element," or the "illumination light source," or both. For purposes of this written opinion "supported by a reflective element of said illumination light source and is rotatable relative thereto" is taken to read "supported by a reflective element of said illumination light source and is rotatable relative to said illumination light source."

Claim 11 lacks clarity due to the ambiguity of "supported by a receptacle of said light body and is rotatable relative thereto," which does not make clear whether the laser light source claim element is rotatable relative to the "receptacle," or the "light body," or both. For purposes of this written opinion "supported by a receptacle of said light body and is rotatable relative thereto" is taken to read "supported by a receptacle of said light body and is rotatable relative to said light body."

Claim 12 lacks clarity due to the ambiguity of "supported by a reflective element of said illumination light source and are rotatable relative thereto," which does not make clear whether the plural laser light sources claim elements are rotatable relative to the "reflective element," or the "illumination light source," or both, or various combinations. For purposes of this written opinion "supported by a reflective element of said illumination light source and are rotatable relative thereto" is taken to read "supported by a reflective element of said illumination light source and are rotatable relative to said illumination light source."

Claim 12 lacks clarity due to the ambiguity of "supported by a receptacle of said light body and are rotatable relative thereto," which does not make clear whether the plural laser light sources claim elements are rotatable relative to the "receptacle," or the "light body," or both, or various combinations. For purposes of this written opinion "supported by a receptacle of said light body and are rotatable relative thereto" is taken to read "supported by a receptacle of said light body and are rotatable relative to said light body."

Claim 17 lacks clarity because the recitation of "said laser light source" (i.e., in the singular) is ambiguous as to whether this is a reference to all or only a subset of the previously recited plural laser light sources. For purposes of this written opinion "said laser light source" is taken to read "at least one of said laser light sources."

Claim 19 lacks clarity due to the ambiguity of reciting that "plural diverging beams of laser light that emanate away from said light body substantially in the predetermined direction" while also reciting that those same beams "define a plane that is diverging from the predetermined direction," without providing guidance for how to reconcile being simultaneously both substantially parallel to and diverging from the predetermined direction. For purposes of this written opinion "define a plane that is substantially parallel to the predetermined direction or define a plane that is diverging from the predetermined direction" is taken to read "define a plane that is substantially parallel to the predetermined direction."

Claim 20 lacks clarity due to the ambiguity of reciting movability of the laser light sources with respect to the light body as "rotating the plane defined by the diverging beams of laser light" and in the alternative "repositioning the plane defined by the diverging beams of laser light." Reciting the laser light sources movability limitation with multiple alternative scopes blurs the scope of protection for movability of the laser light sources, for this claim. For purposes of this written opinion "for rotating the plane defined by the diverging beams of laser light relative to said light body; or for repositioning the plane defined by the diverging beams of laser light relative to said light body" is taken to read "for repositioning the plane defined by the diverging beams of laser light relative to said light body by rotating the plane."

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

Supplemental Box

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Continuation of:
Box No. V(2) -- citations and explanations

Regarding claim 6, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said switch is operable so that only one of the illumination light source and the one or more laser light sources is energized at a given time (para [0061]: For example, a single multi-position switch having an off position, a flashlight position, a target laser position, and a momentary primary laser position may be used to control all three devices).

Regarding claim 7, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein the plural diverging beams of laser light that emanate away from said light body substantially in the predetermined direction (para [0032]: diverge somewhat while still being oriented generally in the first direction)
define a plane that is substantially parallel to the predetermined direction (Diehl illustrates the plane defined by the beams of laser light in Fig 1, where the plane defined by the beams 108, 110 lies in the plane of the page, and the predetermined direction is indicated with arrow 'A' which also lies in the plane of the page).

Regarding claim 8, Diehl discloses the portable light of claim 7, and Diehl further discloses wherein said one or more laser light sources are moveable (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect). The claim language "for repositioning the plane defined by the diverging beams of laser light relative to said light body by rotating the plane" is taken to be a statement of intended use; the portable light of Diehl is capable of being used to reposition the plane defined by the diverging beams relative to the light body.

Regarding claim 9, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said one or more laser light sources are supported by a shaped optical element of said illumination light source or
are supported by a receptacle of said light body (para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing); Fig 13 shows the primary lasers 1302 as being disposed in the front face of the device 1300 [the recited "receptacle" is taken to read on the unlabeled portion of the housing in which the primary lasers 1302 are shown as being disposed in Fig 13]).

Regarding claim 10, Diehl discloses the portable light of claim 9, and Diehl further discloses wherein said one or more laser light sources are moveable (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect). The claim language "for repositioning the plane defined by the diverging beams of laser light relative to said light body by rotating the plane" is taken to be a statement of intended use; the portable light of Diehl is capable of being used to reposition the plane defined by the diverging beams relative to the light body.

Regarding claim 12, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said one or more laser light sources comprise plural laser light sources (Fig 13: 1302; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing)) that: are supported by a reflective element of said illumination light source; or are supported by a reflective element of said illumination light source and are rotatable relative to said illumination light source; or are supported by one or more receptacles of said light body; or are supported by one or more receptacles of said light body (para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing); Fig 13 shows the primary lasers 1302 as being disposed in the front face of the device 1300 [the recited "receptacle" is taken to read on the unlabeled portion of the housing in which the primary lasers 1302 are shown as being disposed in Fig 13]) and are rotatable relative to said light body (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect).

Regarding claim 14, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said illumination light source includes: an optical element for forming light produced by said illumination light source into a predetermined beam configuration (para [0068]: optical systems that rearrange the laser's divergence pattern into a circular shape or a collimated shape-beam expanders, anamorphic prism pairs, fiber optics, cylindrical lenses, collimating lenses, power-changing positive and negative lenses, adjustable auxiliary lenses and the like-the present invention does not preclude the use of such devices, and these or other devices may be used to modify the lasers' properties in any embodiment of the invention); or an optical element for forming light produced by said illumination light source into a predetermined beam configuration, said optical element having a recess therein for receiving a beam modification element therein.

Regarding claim 17, Diehl discloses a portable light (see, generally, device 1300 in Fig 13) comprising:
a light body (Fig 13: 1310; para [0061]: cylindrical body 1310) for receiving a source of electrical power (Fig 13: 1312; para [0061]: body 1310 that houses one or more batteries 1312);
an illumination light source (Fig 13: 1304; para [0060]: incandescent flashlight 1304) supported by said light body (Fig 13 shows the flashlight 1304 disposed in one end of cylindrical body 1310) and selectively energizable (para [0061]: batteries 1312 are selectively connected to the ... flashlight 1304) for producing illumination light that emanates away from said light body in a predetermined direction (para [0060]: incandescent flashlight 1304 preferably can be operated separately from the lasers 1302, 1306 to provide the operator with a conventional flashlight illuminator);
plural laser light sources supported by said light body (Fig 13: 1302, 1306; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing), along with ... a relatively low-intensity targeting laser 1306) and selectively energizable for producing laser light (para [0061]: batteries 1312 are selectively connected to the primary lasers 1302 ... and targeting laser 1306),
wherein said plural laser light sources are mounted for producing plural beams of laser light (para [0060]: in this embodiment, the two primary lasers 1302 operate as described with reference to FIGS. 1 and 2; Fig 1: 104, 106, 108, 110; para [0032]: first and second lasers 104, 106 are oriented to project a first laser beam 108 and a second laser beam 110, respectively) that emanate away from said light body substantially in the predetermined direction (Fig 1: 108, 110, A; para [0032]: oriented to project a first laser beam 108 and a second laser beam 110, respectively, generally along a first direction, as shown by reference arrow A) and that diverge from each other at a predetermined angle (para [0032]: the first and second laser beams 108, 110 may ... converge or diverge somewhat while still being oriented generally in the first direction. Such variations ... may be built into the device in order to obtain desirable beam overlapping characteristics, with divergence generally delaying beam overlap), whereby the plural beams of laser light are produced without a diffraction grating (no mention is made in Diehl of laser beam formation or beam shaping requiring a diffraction grating or other diffraction elements); and (claim 17 continued) -- see next page

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

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Continuation of
Box No. V(2) -- citations and explanations

(claim 17 continued) a switch (Fig 13: 1308; para [0061]: a switch system comprising. In this case, three separate simple two-position switches 1308) supported by said light body (Fig 13 shows switches 1308 disposed on the body 1310) for selectively energizing said illumination light source from the source of electrical power and for selectively energizing at least one of said laser light sources from the source of electrical power (para [0061]: a single multi-position switch having an off position, a flashlight position, a target laser position, and a momentary primary laser position may be used to control all three devices. The switches may be toggle switches, pushbutton switches, rotary switches, or any other type of switch).

Regarding claim 19, Diehl discloses the portable light of claim 17, and Diehl further discloses wherein the plural diverging beams of laser light that emanate away from said light body substantially in the predetermined direction (para [0032]: diverge somewhat while still being oriented generally in the first direction) define a plane that is substantially parallel to the predetermined direction (Diehl illustrates the plane defined by the beams of laser light in Fig 1, where the plane defined by the beams 106, 110 lies in the plane of the page, and the predetermined direction is indicated with arrow 'A' which also lies in the plane of the page).

Regarding claim 20, Diehl discloses the portable light of claim 19, and Diehl further discloses wherein said plural laser light sources are moveable (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect). The claim language "for repositioning the plane defined by the diverging beams of laser light relative to said light body by rotating the plane" is taken to be a statement of intended use; the portable light of Diehl is capable of being used to reposition the plane defined by the diverging beams relative to the light body.

Claim 15 lacks an inventive step under PCT Article 33(3) as being obvious over Diehl.

Regarding claim 15, Diehl discloses the portable light of claim 1, and Diehl discloses wherein said one or more laser light sources are supported by said light body (Fig 13: 1302, 1306, para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing), along with ... a relatively low-intensity targeting laser 1306). Diehl does not disclose specifically that the one or more laser light sources are relatively nearer to a base end of the light body than is said illumination light source. It would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl so that the one or more laser light sources are relatively nearer to a base end of the light body than is said illumination light source, as being a mere rearrangement of parts in the same device, used for the same purpose, to obtain a predictable result.

Claims 4 and 11 lack an inventive step under PCT Article 33(3) as being obvious over Diehl in view of US 2006/0233215 A1 (Casazza).

Regarding claim 4, Diehl discloses the portable light of claim 3, however Diehl does not disclose specifically an optical beam splitter and wherein the registration feature has an axis oriented substantially parallel to an axis of the optical beam splitter. Casazza discloses a portable light (abstract: laser dazzling device) with a beam splitter (para [0035]: semi-transparent mirror ... polarizing beam splitter). It would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl to include a beam splitter, as taught by Casazza, and for the registration feature of Diehl to have an axis oriented substantially parallel to an axis of the optical beam splitter taught by Casazza "for optically conditioning the individual beams prior to exiting the laser dazzling device" (see Casazza at para [0035]) to provide a cost effective security device with scalable output power while maintaining portability features and effectiveness as disclosed by Casazza (see Casazza para [0007]).

Regarding claim 11, Diehl discloses the portable light of claim 1, and Diehl further discloses wherein said one or more laser light sources comprise a laser light source (Fig 13: 1302; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing)) that produces one of the plural diverging beams of laser light (para [0060]. In this embodiment, the two primary lasers 1302 operate as described with reference to FIGS. 1 and 2; Fig 1: 104, 108; para [0032]: first and second lasers 104, 106 are oriented to project a first laser beam 108 and a second laser beam 110, respectively) and that: is supported by a reflective element of said illumination light source; or is supported by a reflective element of said illumination light source and is rotatable relative to said illumination light source; or is supported by a receptacle of said light body; or is supported by a receptacle of said light body (para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing); Fig 13 shows the primary lasers 1302 as being disposed in the front face of the device 1300 [the recited "receptacle" is taken to read on the unlabeled portion of the housing in which the primary lasers 1302 are shown as being disposed in Fig 13]) and are rotatable relative to said light body (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect). Diehl does not disclose specifically that the laser light source produces two of the plural diverging beams of laser light. Casazza discloses a portable light (abstract: laser dazzling device) with a beam splitter (para [0035]: semi-transparent mirror ... polarizing beam splitter). It would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl to include a beam splitter, as taught by Casazza, and for the laser light source 104 of Diehl to produce two of the plural diverging beams of laser light by splitting a single beam "for optically conditioning the individual beams prior to exiting the laser dazzling device" (see Casazza at para [0035]) to provide a cost effective security device with scalable output power while maintaining portability features and effectiveness as disclosed by Casazza (see Casazza para [0007]).

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 18/40249

Supplemental Box

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Box No. V(2) -- citations and explanations

Claims 5 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Diehl in view of US 2014/0268703 A1 to Ehlert et al. (hereinafter, 'Ehlert').

Regarding claims 5 and 18, Diehl discloses the portable light of claims 1 and 17, however Diehl does not disclose wherein said illumination light source includes a shaped optically clear element having a polished curved external side surface and a wide flat forward surface whereat the illumination light exits said illumination light source through the flat forward surface, and wherein said one or more laser light sources are supported by said shaped optically clear element. Ehlert discloses a portable light (see, generally, 10 in Fig 1A, 2) wherein the illumination light source includes a shaped optically clear element (Fig 1A, 2, 3B: 30; para [0038]: lens 30) having a curved external side surface (para [0038]: the circular sides; the detail view of Fig 3B shows the lens 30 side on) and a wide flat forward surface (para [0038]: the front of the lens 30; the perspective view of Fig 1A shows the flat forward surface of the lens 30 at the extreme right end of the portable light, the flat forward surface facing toward the right side of the view; Fig. 3B and para [0045] showing 30 in front of 60 and wider than 60) whereat the illumination light exits said illumination light source through the flat forward surface (para [0038]: light would flow through the front of the lens 30), and wherein the laser light source (Fig 1A, 2, 3B: 28; para [0043]: laser 28) is supported by said shaped optically clear element (Fig 3B: 30, 62, 60(1)-60(4); para [0048]: lens 30 may be placed directly above the collimators, such as the collimator 60(1). [The detail view of Fig 3B shows the lens 30 supporting laser 28 indirectly because laser 28 is part of the lighting device 62 assembly, and because the lens 30 is in contact with the collimators 60(1)-60(4).]; Fig 2: 30, 52, 56, 62; para [0042]: lens cap 56 may be configured to retain the lens 30 ... when the lens cap 56 is attached to the second bell housing 52; [The lens 30 provides a normal force to the lighting device 62 assembly as a result of attachment of lens cap 56 with the second bell housing 52.]). It would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl so that said illumination light source includes a shaped optically clear element having a curved external side surface and a wide flat forward surface whereat the illumination light exits said illumination light source through the flat forward surface, and wherein said one or more laser light sources are supported by said shaped optically clear element, as taught by Ehlert, to provide an optional torch functionality (see Ehlert at para [0048]: the lens 30 may operate like unto a torch by projecting light at least 180 degrees horizontally and 360 degrees around). It also would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl in view of Ehlert so that an external side surface of the shaped optically clear element is polished, as being obvious since polishing is well known for lenses to enable them to function properly (see Ehlert para [0038] disclosing the lens 30).

Claim 16 lacks an inventive step under PCT Article 33(3) as being obvious over Diehl in view of US 2016/0018071 A1 to Streamlight, Inc. (hereinafter, 'Streamlight').

Regarding claim 16, Diehl discloses the portable light of claim 1 wherein said one or more laser light sources include plural laser light sources (Fig 13: 1302; para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing)) each emitting a beam of laser light along an axis thereof (para [0060]: In this embodiment, the two primary lasers 1302 operate as described with reference to FIGS. 1 and 2; Fig 1: 104, 106, 108, 110; para [0032]: first and second lasers 104, 106 are oriented to project a first laser beam 108 and a second laser beam 110, respectively; Fig 1: 108, 110, A; para [0032]: oriented to project a first laser beam 108 and a second laser beam 110, respectively, generally along a first direction, as shown by reference arrow A) and each supported interior to said light body (para [0060]: two primary lasers 1302 are mounted to the base (the flashlight housing)); Fig 13 shows the primary lasers 1302 as being disposed in the front face of the device 1300). Diehl does not disclose specifically the one or more laser light sources being located behind an optical element of said illumination light source, said optical element having plural bores therethrough that are aligned with the respective axes of said plural laser light sources for passing the respective beams of laser light produced thereby. Streamlight discloses, in a portable light, a laser light source (Fig 10: 180; para [0059]: Laser light source 180) being located behind an optical element of said illumination light source (Fig 10: 180, 56'; para [0059]: Laser light source 180 ... is disposed in a space behind reflector 56'), said optical element having a bore therethrough (Fig 10: 560, 56'; para [0059]: opening 560 in reflector 56') that is aligned with the axis of the laser light source for passing the beam of laser light produced thereby (Fig 10: 180, 560, 56'; para [0059]: Laser light source 180 ... aligned to project a laser beam through opening 560 in reflector 56'). It would have been obvious to a person having ordinary skill in the art to modify the portable light of Diehl so that the one or more laser light sources are located behind an optical element of said illumination light source, said optical element having plural bores therethrough that are aligned with the respective axes of said plural laser light sources for passing the respective beams of laser light produced thereby, as taught by Streamlight, so "that a portable light provide more than one light output, e.g., provide light from more than one light source" (see Streamlight at para [0005]).

Claim 13 meets the criteria under PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the subject matter claimed.

The prior art for claim 13 is exemplified by Diehl.

Regarding claim 13, Diehl teaches the portable light of claim 1, and further discloses said one or more laser light sources further include a laser emission element (Fig 13: 1302; para [0060]: two primary lasers 1302), the laser emission element being rotatable relative to said light body (para [0065]: the pairs [of lasers] may be rotated relative to one another, and one or both of the lasers that make up each pair may also be rotated at any angle to change the overall field of effect). Diehl does not teach a support for a beam splitting element wherein the support for the beam splitting element is rotatable relative to said light body.

Therefore the prior art of record does not teach or fairly suggest the subject matter claimed. Specifically, none of the prior art, alone or in combination, discloses or fairly suggests a support for a beam splitting element wherein the support for the beam splitting element is rotatable relative to said light body.

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

Electronic Patent Application Fee Transmittal

Application Number:	15492344
Filing Date:	20-Apr-2017
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Filer:	Clement Alphonse Berard/Dawn Underwood
Attorney Docket Number:	0096-P06343US01 (SL-727)

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

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

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Application Number:	15492344
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Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Customer Number:	110
Filer:	Clement Alphonse Berard/Dawn Underwood
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:
Raymond L. Sharrah et al.

Application No.: 15/492,344

Filed: 04/20/2017

For: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

Confirmation No.: 3062

Examiner:

Group Art Unit:

Atty Docket: 0096-P06343US01 (SL-727)

CERTIFICATE OF TRANSMISSION

I hereby certify that this Correspondence and accompanying papers are being filed electronically with the United States Patent and Trademark Office via EFS.

April 10, 2019
Date of Certificate

/dawn underwood/
Dawn Underwood

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97

In compliance with the duty of disclosure set forth in 37 C.F.R. § 1.56, Applicants are submitting herewith a Form PTO-1449.

This Information Disclosure Statement is being filed more than three months from the filing date of the application. Applicant has received an action on the merits of the application. Accordingly, the required fee is submitted herewith.

Applicants respectfully request full and proper consideration of the listed information during examination of the application, and that the listed information be printed on any patent that issues therefrom.

Respectfully submitted,

DANN, DORFMAN, HERRELL & SKILLMAN, PC
Attorneys for Applicant(s)

By /clement a berard/
Clement A. Berard
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Enclosures - Form PTO-1449
Copies of Non-US Patent/Pub. App. refs listed on PTO -1449

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TITLE OF INVENTION: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	07/17/2019

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

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

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

110 7590 04/17/2019
DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

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

Certificate of Mailing or Transmission

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

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)	3062

TITLE OF INVENTION: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	07/17/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, NATHANIEL J.	2875	362-205000

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

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

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

1 _____
2 _____
3 _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

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

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL 727)	3062

110 7590 04/17/2019

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER	
LEE, NATHANIEL J.	
ART UNIT	**PAPER NUMBER**
2875	

DATE MAILED: 04/17/2019

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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

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

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

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 15/492,344	Applicant(s) SHARRAH et al.	
	Examiner NATHANIEL J LEE	Art Unit 2875	AIA (FITF) Status Yes

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

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

1. ☑ This communication is responsive to communications filed 21 December 2018.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 1-31 . 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 areply 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 _____.

/NATHANIEL J LEE/ Examiner, Art Unit 2875	/ANH T MAI/ Supervisory Patent Examiner, Art Unit 2875

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Response to Amendment

The amendment filed on 21 December 2018 has been entered.

Allowable Subject Matter

Claims 1-31 are allowed.

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

With respect to claims 1-4, 6-10: The prior art of record does not teach or reasonably suggest "A portable light comprising: … a white *light source supported by said light body and selectively energizable for producing white light; a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light*" along with the other limitations of the claims.

With respect to claim 5: The prior art of record does not teach or reasonably suggest "a portable light comprising … a *laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a*

cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light … wherein said white light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface" along with the other limitations of the claim.

With respect to claims 11-14, 16-22: The prior art of record does not teach or reasonably suggest "a portable light comprising: … *a white light source supported by said light body and selectively energizable for producing white light; a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light; … and wherein said white light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface*" along with the other limitations of the claims.

With respect to claim 15: The prior art of record does not teach or reasonably suggest "a portable light comprising … *a laser light source supported by said light body and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for*

transmitting the received light as a plane of laser light, whereby the laser light source is configured to emit a plane of laser light … wherein said illumination light source includes a shaped optically clear plastic element having a polished curved external side surface and a generally wider flat forward surface oriented such that the white light exits the white light source through the flat forward surface, and wherein the laser light source is supported by the flat forward surface" along with the other limitations of the claim.

With respect to claims 23, 24, 26: The prior art of record does not teach or reasonably suggest "a portable light comprising: … *an illumination light source supported by said light body relatively nearer to an end thereof that is remote to the base end thereof, said illumination light source being configured to emit illumination light in a predetermined direction relative to said light body and being selectively energizable for producing illumination light; a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body, the cylindrical lens receiving laser light at a first part of a cylindrical surface thereof and emitting the plane of laser light from a second part of that cylindrical surface, whereby the laser light source is configured to emit a plane of laser light in the same general direction as the illumination light is emitted*" along with the other limitations of the claims

With respect to claim 25: The prior art of record does not teach or reasonably suggest "a portable light comprising … *a laser light source supported by said light body relatively nearer to the base end thereof than is said illumination light source and being*

selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving laser light from a laser emission element and for transmitting the received laser light as a plane of laser light in substantially the predetermined direction relative to said light body … wherein said laser light source further includes a support for said cylindrical lens, wherein: the support for said cylindrical lens is rotatable relative to said light body, whereby a longitudinal axis of said cylindrical lens is rotatable relative to said light body; or the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body, whereby a longitudinal axis of said cylindrical lens is repositionable relative to said light body; or the laser emission element and the support for said cylindrical lens are supported on a flexible stalk that is attached to said light body and said support for said cylindrical lens is rotatable relative to said flexible stalk, whereby a longitudinal axis of said cylindrical lens is rotatable and repositionable relative to said light body" along with the other limitations of the claim.

With respect to claim 27-30: The *prior art of record does not teach or reasonably suggest "a portable light comprising: … a shaped optically clear element having a polished curved external side surface and a flat forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body; a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light*" along with the other limitations of the claims.

With respect to claim 31: The prior art of record does not teach or reasonably suggest "a portable light comprising: … *a shaped optically clear element having a curved*

external side surface and a forward surface through which the illumination light exits said illumination light source in a predetermined direction relative to said light body; a laser light source supported by said shaped optically clear element and selectively energizable for producing laser light, wherein said laser light source includes a cylindrical lens configured for receiving light from a laser emission element and for transmitting the received light as a plane of laser light" along with the other limitations of the claims.

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."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL J. LEE whose telephone number is (571)270-5721. The examiner can normally be reached on 9-5 EST M-F.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anh Mai can be reached on 5712721995. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information

for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHANIEL J LEE/
Examiner, Art Unit 2875

/ANH T MAI/
Supervisory Patent Examiner, Art Unit 2875

Notice of References Cited	Application/Control No. 15/492,344	Applicant(s)/Patent Under Reexamination SHARRAH et al.	
	Examiner NATHANIEL J LEE	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-20110163698-A1	07-2011	Spartano; David A.	F21L4/027	315/362
*	B	US-6864799-B2	03-2005	Popps; Gregory S.	G08B7/062	340/321
*	C	US-7114861-B1	10-2006	Tung; Hsin-Chih	G02B7/026	385/92
	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					

NON-PATENT DOCUMENTS

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

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

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/492,344	SHARRAH et al.
	Examiner	**Art Unit**
	NATHANIEL J LEE	2875

CPC						
Symbol					**Type**	**Version**
F21L	/	4	/	025	F	2013-01-01
F21V	/	23	/	0414	I	2013-01-01
F21V	/	14	/	025	I	2013-01-01
F21V	/	5	/	043	I	2013-01-01
F21L	/	4	/	045	I	2013-01-01
F21Y	/	2115	/	30	A	2016-08-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/NATHANIEL J LEE/ Examiner, Art Unit 2875	05 April 2019	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANH T MAI/ SPE, Art Unit 2875	08 April 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20190405

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/492,344	SHARRAH et al.
	Examiner	**Art Unit**
	NATHANIEL J LEE	2875

INTERNATIONAL CLASSIFICATION				
CLAIMED				
F21L4/02	/	4	/	02

NON-CLAIMED				
F21V5/04	/	5	/	04

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

/NATHANIEL J LEE/ Examiner, Art Unit 2875	05 April 2019	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANH T MAI/ SPE, Art Unit 2875	08 April 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20190405

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/492,344	SHARRAH et al.
	Examiner	**Art Unit**
	NATHANIEL J LEE	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	1	9	10	18	19	28	28								
2	2	11	11	19	20	29	29								
3	3	12	12	20	21	30	30								
4	4	13	13	21	22	31	31								
10	5	14	14	23	23										
5	6	22	15	24	24										
6	7	15	16	26	25										
7	8	16	17	25	26										
8	9	17	18	27	27										

/NATHANIEL J LEE/ Examiner, Art Unit 2875	05 April 2019	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANH T MAI/ SPE, Art Unit 2875	08 April 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office Part of Paper No.: 20190405

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/492,344	SHARRAH et al.
	Examiner	Art Unit
	NATHANIEL J LEE	2875

CPC - Searched*		
Symbol	Date	Examiner
F21L4/025, 045	9/25/2018	NJL
F21L4/025, 045, F21V5/043, F21V14/025, F21V23/0414	04/05/2019	NJL

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
CLass searched in EAST. Text searched in EAST. Considered IDS.	9/25/2018	NJL
Class searched in EAST. Interference search.	04/05/2019	NJL

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
F21L	4/025, 4/045	04/05/2019	NJL
V21V	5/043, 14/025, 23/0414	04/05/2019	NJL
	Claim text search, inventor name search.	04/05/2019	NJL

	/NATHANIEL LEE/ Examiner.Art Unit 2875

Bibliographic Data

Application No: 15/492,344

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /NATHANIEL J LEE/ (Examiner's Signature) | (Initials)

Title: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/20/2017	362	2875	0096-P06343US01 (SL-727)
RULE			

APPLICANTS

STREAMLIGHT, INC., Eagleville, PA,

INVENTORS

Raymond L. SHARRAH Collegeville, PA, UNITED STATES

Thomas D. BORIS Collegeville, PA, UNITED STATES

Donald J. KEELEY Emmaus, PA, UNITED STATES

CONTINUING DATA

This application has PRO of 62325917 04/21/2016

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

04/26/2017

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307
UNITED STATES

FILING FEE RECEIVED

$1,340

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	520	F21L4/045.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/24 15:39
S2	14	("2008/0055888").URPN.	USPAT	ADJ	ON	2018/09/24 15:43
S3	51	("1613203" | "20040223342" | "20050157492" | "20060028812" | "20070153512" | "20080074869" | "3204807" | "3527914" | "4102471" | "4363944" | "4506120" | "6019482" | "6609812" | "6627816" | "6641279" | "6930262" | "7220016" | "7518133" | "7692136" | "D260232" | "D301336" | "D351376" | "D408018").PN. OR ("8376574").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 15:47
S4	9	("2008/0074869").URPN.	USPAT	ADJ	ON	2018/09/24 15:48
S5	39	("2004/0223342").URPN.	USPAT	ADJ	ON	2018/09/24 15:52
S6	49	("2427051" | "2427890" | "2796516" | "3030497" | "4414612" | "4467403" | "4495550" | "5278739" | "5541822" | "5558430" | "5605394" | "5859582" | "D180751" | "D249535" | "D308257" | "D349776" | "D363564" | "D370989" | "D371855" | "D373211" | "D373646" | "D380061").PN. OR ("5971562").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 15:57
S7	34	("2329556" | "2581129" | "3030497" | "3248723" | "4716402" | "4835665" | "5077644" | "5217297" | "5558430").PN. OR ("5859582").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 15:58
S8	20	S1 and laser	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/24 16:04
S9	7	("6031649" | "6150943" | "6724467" | "6864799" | "7614765" | "8360612" | "8672513").PN.	US-PGPUB; USPAT	ADJ	ON	2018/09/24 16:06
S10	75	("3603662" | "3969720" | "4084339" | "4801928" | "4904988" | "5140301" | "5177461" | "5572183" | "5920268").PN. OR ("6150943").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 16:09

S11	22	("20040012962" | "4107766" | "4419658" | "4649376" | "5103383" | "5109322" | "5177461" | "5216418" | "5572183" | "5898363" | "6000811" | "6007219" | "6222455" | "6317047" | "6724467").PN. OR ("6864799").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 16:21
S12	12	("2004/0012962").URPN.	USPAT	ADJ	ON	2018/09/24 16:22
S13	105	("20030051355" | "20030101605" | "20030101606" | "20040012962" | "20050091859" | "20050155239" | "3588249" | "3729266" | "3771876" | "3820903" | "3822943" | "3854820" | "3856409" | "3897637" | "3936197" | "3964824" | "3982839" | "4031629" | "4062634" | "4111564" | "4183667" | "4221483" | "4333242" | "4448528" | "4468119" | "4471530" | "4566202" | "4679937" | "4767208" | "4781457" | "4830489" | "4836669" | "4852265" | "4854703" | "4912851" | "4973158" | "4993161" | "5012585" | "5144486" | "5144487" | "5184406" | "5218355" | "5243398" | "5257279" | "5307368" | "5335244" | "5430549" | "5459932" | "5500524" | "5539990" | "5552886" | "5583685" | "5599050" | "5619802" | "5629921" | "5689330" | "5754287" | "5782003" | "5864956" | "5898809" | "5907907" | "5933393" | "5992029" | "6035540" | "6065217" | "6087645" | "6104479" | "6177978" | "6292303" | "6470578" | "6539638" | "6563646" | "6568094" | "6618950" | "6625895" | "6710929" | "6751879" | "6763595" | "6763596" | "6782034" | "6892463" | "6922901" | "6938350" | "7121010" | "7134211" | "7178250" | "7204027" | "D537373" | "D538688" | "D538691").PN. OR ("7497018").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 16:23
S14	6	("2005/0091859").URPN.	USPAT	ADJ	ON	2018/09/24 16:24
S15	51	("20040012962" | "3771876" | "3822943" | "3964824" | "4031629" | "4111564" | "4468119" | "4471530" | "4566202" | "4830489" | "4836669" | "4854703" | "4973158" | "4993161" | "5012585" | "5144486" | "5144487" | "5184406" | "5218355" | "5243398" | "5307368" | "5430549" | "5539990" | "5552886" | "5583685" | "5689330" | "5754287" | "5898809" | "5907907" | "6065217" | "6087645" | "6104479" | "6177987" | "6292303" | "6314650" | "6539638" | "6563646" | "6568094" | "6763596").PN. OR ("6938350").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2018/09/24 16:33
S16	3	"20110163698"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	ADJ	ON	2018/09/25 11:44

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S17	268	F21L4/025.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/09/25 14:11
S18	20	"20090067459" or "20090086489" or "20090185377" or "20110157486"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2018/10/09 09:27

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	108	F21L4/025.cpc.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:18
L2	233	F21L4/045.cpc.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:22
L3	161	F21V5/043.cpc.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:31
L4	26	("4253735" | "4575194" | "4722581" | "4805997" | "4915484" | "5095386" | "5161064").PN. OR ("5499262").URPN.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:36
L5	225	F21V14/025.cpc.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:37
L6	2012	F21V23/0414.cpc.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:40
L7	216	(Sharrah, Raymond).in. or (Boris, Thomas).in. or (Keeley, Donald).in.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:50
L8	1	(portable light and laser and cylindrical lens).clm.	US-PGPUB; USPAT	ADJ	ON	2019/04/05 15:55

4/5/2019 4:21:03 PM
C:\Users\nlee1\Documents\EAST\Workspaces\15492344 Portable Laser.wsp

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)	3062

110 7590 05/01/2019

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER	
LEE, NATHANIEL J.	

ART UNIT	PAPER NUMBER
2875	

MAIL DATE	DELIVERY MODE
05/01/2019	PAPER

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

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

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
15/492,344	04/20/2017	SHARRAH et al.	0096-P06343US01 (

		EXAMINER	
DANN, DORFMAN, HERRELL & SKILLMAN 1601 MARKET STREET SUITE 2400 PHILADELPHIA, PA 19103-2307		NATHANIEL J LEE	
		ART UNIT	PAPER
		2875	20190426

DATE MAILED: _____

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

Commissioner for Patents

The information disclosure statement filed on April 10, 2019, has been considered.

/NATHANIEL J LEE/ Examiner, Art Unit 2875	/ANH T MAI/ Supervisory Patent Examiner, Art Unit 2875

PTO-90C (Rev.04-03)

INFORMATION DISCLOSURE STATEMENT	*Complete if known*
	Application Number: 15/492,344
	Filing Date: 04/20/2017
	First Named Inventor: Raymond L. Sharrah et al.
	Group Art Unit:
	Examiner Name:
SHEET 1 OF 1	**Attorney Docket Number: 0096-P06343US01 (SL-727)**

April 10, 2019

UNITED STATES PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	PATENT NUMBER	ISSUE DATE MM-DD-YYYY	FIRST NAMED INVENTOR
/N.J.L/		7188978	03-13-2007	Sharrah et al.
/N.J.L/		D548385	08-07-2007	Sharrah et al.
/N.J.L/		D611629	03-09-2010	Sharrah et al.
/N.J.L/		8287157	10-16-2012	Sharrah et al.
/N.J.L/		9772163	09-26-2017	Sharrah et al.

UNITED STATES PUBLISHED PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	PUBLICATION NUMBER	PUBLICATION DATE MM-DD-YYYY	FIRST NAMED INVENTOR
/N.J.L/		2005/0122710	06-09-2005	Kim
/N.J.L/		2005/0185403	08-25-2005	Diehl
/N.J.L/		2006/0233215	10-19-2006	Casazza
/N.J.L/		2012/0326635	12-27-2012	Redpath et al.
/N.J.L/		2014/0268703	09-18-2014	Ehlert et al.
/N.J.L/		2015/0276347	10-01-2015	Sharrah et al.
/N.J.L/		2016/0018071	01-21-2016	Sharrah et al.

OTHER CITATIONS

EXAMINER'S 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, page(s), volume-issue number(s), publisher, city and/or country where published
/N.J.L/	06	RP Photonics Encyclopedia of Laser Physics and Technology, "Beam Splitters", printed 6/15/2017, 2 pages, https://www.rp-photonics.com/beam_splitters.html
/N.J.L/	07	Edmund Optics, "What are Beamsplitters?", printed 6/15/2017, 5 pages, https://www.edmundoptics.com/resources/application-notes/optics/what-are-beamsplitters/
/N.J.L/	08	Wikipedia, "Beam Splitter", last edited 21 March 2017, printed 6/15/2017, 6 pages, https://en.wikipedia.org/wiki/beam_splitter
/N.J.L/	09	PCT International Searching Authority, "Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, or the Declaration", in International Application No. PCT/US2018/040249, mailed 9/21/2018, 10 pages

EXAMINER'S SIGNATURE	/NATHANIEL J LEE/	**DATE CONSIDERED**	04/26/2019

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

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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Commissioner for Patents
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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)

110 7590 04/17/2019
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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.

Dawn Underwood	(Typed or printed name)
/dawn underwood/	(Signature)
June 25, 2019	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	04/20/2017	Raymond L. SHARRAH	0096-P06343US01 (SL-727)	3062

TITLE OF INVENTION: PORTABLE LIGHT WITH PLANE OF LASER LIGHT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	07/17/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, NATHANIEL J.	2875	362-205000

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

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

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

1 Clement A. Berard, Esq.
2 Dann, Dorfman, Herrell
3 & Skillman, PC

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: Streamlight, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Eagleville, PA

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 5

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. 04-1406

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 /clement a berard/ Date 25 June 2019

Typed or printed name Clement A. Berard Registration No. 29613

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	15492344
Filing Date:	20-Apr-2017
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Filer:	Clement Alphonse Berard/Dawn Underwood
Attorney Docket Number:	0096-P06343US01 (SL-727)

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
PRINTED COPY OF PATENT - NO COLOR	8001	5	3	15
		Total in USD ($)		**515**

Electronic Acknowledgement Receipt

EFS ID:	36399812
Application Number:	15492344
International Application Number:	
Confirmation Number:	3062
Title of Invention:	PORTABLE LIGHT WITH PLANE OF LASER LIGHT
First Named Inventor/Applicant Name:	Raymond L. SHARRAH
Customer Number:	110
Filer:	Clement Alphonse Berard/Dawn Underwood
Filer Authorized By:	Clement Alphonse Berard
Attorney Docket Number:	0096-P06343US01 (SL-727)
Receipt Date:	25-JUN-2019
Filing Date:	20-APR-2017
Time Stamp:	11:31:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$515
RAM confirmation Number	062519INTEFSW00012394041406
Deposit Account	041406
Authorized User	Dawn Underwood

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

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	SL-727-IssueFeeTrans.pdf	92723 1d5d9e3609d844fbef9badf06969b1d2bfacef05	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31980 a1d569fc8f493c465eb1be676f81505696ec4892	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	124703		

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.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/492,344	08/13/2019	10378702	0096-P06343US01 (SL-727)	3062

110 7590 07/24/2019

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

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

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