



(12) **United States Patent**  
**Spero**

(10) **Patent No.:** **US 9,955,551 B2**  
(45) **Date of Patent:** **Apr. 24, 2018**

(54) **DETECTOR CONTROLLED ILLUMINATING SYSTEM**

(75) Inventor: **Yechezkal Evan Spero**, Moshav Tifrach (IL)

(73) Assignee: **Yechezkal Evan Spero**, Tifrach (IL)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 911 days.

(21) Appl. No.: **13/357,549**

(22) Filed: **Jan. 24, 2012**

(65) **Prior Publication Data**

US 2012/0206050 A1 Aug. 16, 2012

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 10/604,360, filed on Jul. 14, 2003, now Pat. No. 8,100,552.  
(Continued)

(51) **Int. Cl.**  
**H05B 37/02** (2006.01)  
**B60Q 1/04** (2006.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **H05B 37/0227** (2013.01); **B60Q 1/04** (2013.01); **B60Q 1/085** (2013.01); **B60Q 1/1423** (2013.01); **F21K 9/23** (2016.08); **F21K 9/232** (2016.08); **F21S 4/28** (2016.01); **F21S 48/1154** (2013.01); **F21S 48/1159** (2013.01); **F21S 48/1736** (2013.01); **F21V 19/02** (2013.01); **F21V 23/0464** (2013.01); **F21V 23/0471** (2013.01); **F21V 23/0478** (2013.01); **H05B 3/008** (2013.01); **H05B 33/0812** (2013.01); **H05B 33/0857** (2013.01); **H05B 33/0863** (2013.01); **H05B 37/02** (2013.01); **H05B 37/0218** (2013.01); **B60Q 2300/054**

(2013.01); **B60Q 2300/112** (2013.01); **B60Q 2300/116** (2013.01); **B60Q 2300/122** (2013.01); **B60Q 2300/134** (2013.01); **B60Q 2300/142** (2013.01); **B60Q 2300/21** (2013.01); **B60Q 2300/23** (2013.01); **B60Q 2300/312** (2013.01); **B60Q 2300/314** (2013.01); **B60Q 2300/322** (2013.01); **B60Q 2300/41** (2013.01); **B60Q 2300/42** (2013.01); **F21S 48/10** (2013.01); **F21V 21/02** (2013.01); **F21V 21/30** (2013.01); **F21V 29/74** (2015.01);  
(Continued)

(58) **Field of Classification Search**  
CPC ..... H05B 33/08; H05B 37/02; B60Q 1/04  
USPC ..... 315/152, 77, 307, 312; 362/276, 234  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

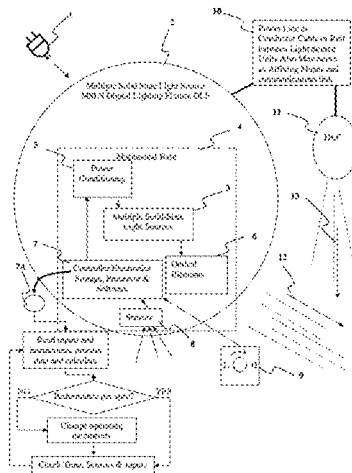
5,546,475 A \* 8/1996 Bolle et al. .... 382/190  
5,785,243 A \* 7/1998 Cross ..... 236/47  
(Continued)

Primary Examiner — Tung X Le

(57) **ABSTRACT**

An illuminating device coupled with sensors or an image acquisition device and a logical controller allows illumination intensity and spectrum to be varied according to changing user needs. The system provides illumination to areas according to the principles of correct lighting practice for the optimal performance of visual tasks in the most efficient, cost effective manner. Aspects of the invention include: lighting fixtures which adapt to ambient lighting, movement, visual tasks being performed, and environmental and personal conditions affecting illumination requirements at any given instant. Lighting fixtures having spatial distribution of spectrum and intensity, providing both "background" room lighting, and "task" lighting.

**23 Claims, 24 Drawing Sheets**



**Related U.S. Application Data**

(60) Provisional application No. 61/535,981, filed on Sep. 17, 2011, provisional application No. 60/395,308, filed on Jul. 12, 2002.

(51) **Int. Cl.**

*B60Q 1/08* (2006.01)  
*B60Q 1/14* (2006.01)  
*F21V 19/02* (2006.01)  
*F21V 23/04* (2006.01)  
*H05B 33/08* (2006.01)  
*H05B 3/00* (2006.01)  
*F21S 4/28* (2016.01)  
*F21K 9/23* (2016.01)  
*F21K 9/232* (2016.01)  
*F21S 8/10* (2006.01)  
*F21V 21/02* (2006.01)  
*F21V 21/30* (2006.01)  
*F21W 101/10* (2006.01)  
*F21W 111/023* (2006.01)  
*F21W 111/027* (2006.01)  
*F21W 111/08* (2006.01)  
*F21W 131/103* (2006.01)  
*F21W 131/40* (2006.01)  
*F21Y 113/00* (2016.01)  
*F21V 29/74* (2015.01)  
*F21Y 115/10* (2016.01)

(52) **U.S. Cl.**

CPC .... *F21W 2101/10* (2013.01); *F21W 2111/023* (2013.01); *F21W 2111/027* (2013.01); *F21W 2111/08* (2013.01); *F21W 2131/103* (2013.01);

*F21W 2131/40* (2013.01); *F21Y 2113/00* (2013.01); *F21Y 2115/10* (2016.08); *Y02B 20/343* (2013.01); *Y02B 20/383* (2013.01); *Y02B 20/46* (2013.01)

(56)

**References Cited**

U.S. PATENT DOCUMENTS

5,969,754	A *	10/1999	Zeman	348/136
5,983,161	A *	11/1999	Lemelson et al.	701/301
5,994,844	A *	11/1999	Crawford et al.	315/151
6,166,496	A *	12/2000	Lys et al.	315/316
6,379,022	B1 *	4/2002	Amerson et al.	362/231
6,385,352	B1 *	5/2002	Roustaei	382/324
6,394,614	B1 *	5/2002	Chang	359/604
2002/0022774	A1 *	2/2002	Karnieli	600/300
2002/0022927	A1 *	2/2002	Lemelson et al.	701/301
2002/0039238	A1 *	4/2002	Chang	359/604
2002/0046100	A1 *	4/2002	Kinjo	705/14
2002/0047628	A1 *	4/2002	Morgan et al.	315/291
2002/0047646	A1 *	4/2002	Lys et al.	315/312
2002/0057340	A1 *	5/2002	Fernandez et al.	348/143
2004/0052076	A1 *	3/2004	Mueller	F21V 23/0442 362/293
2004/0105264	A1 *	6/2004	Spero	362/276
2004/0138726	A1 *	7/2004	Savage et al.	607/88
2006/0222213	A1 *	10/2006	Kiyohara et al.	382/115
2008/0136356	A1 *	6/2008	Zampini et al.	315/308
2011/0211110	A1 *	9/2011	Doublet	H04N 7/188 348/370
2012/0262575	A1 *	10/2012	Champagne	G08B 13/19613 348/143
2012/0287493	A1 *	11/2012	Kuhlman	B60Q 1/085 359/228

\* cited by examiner

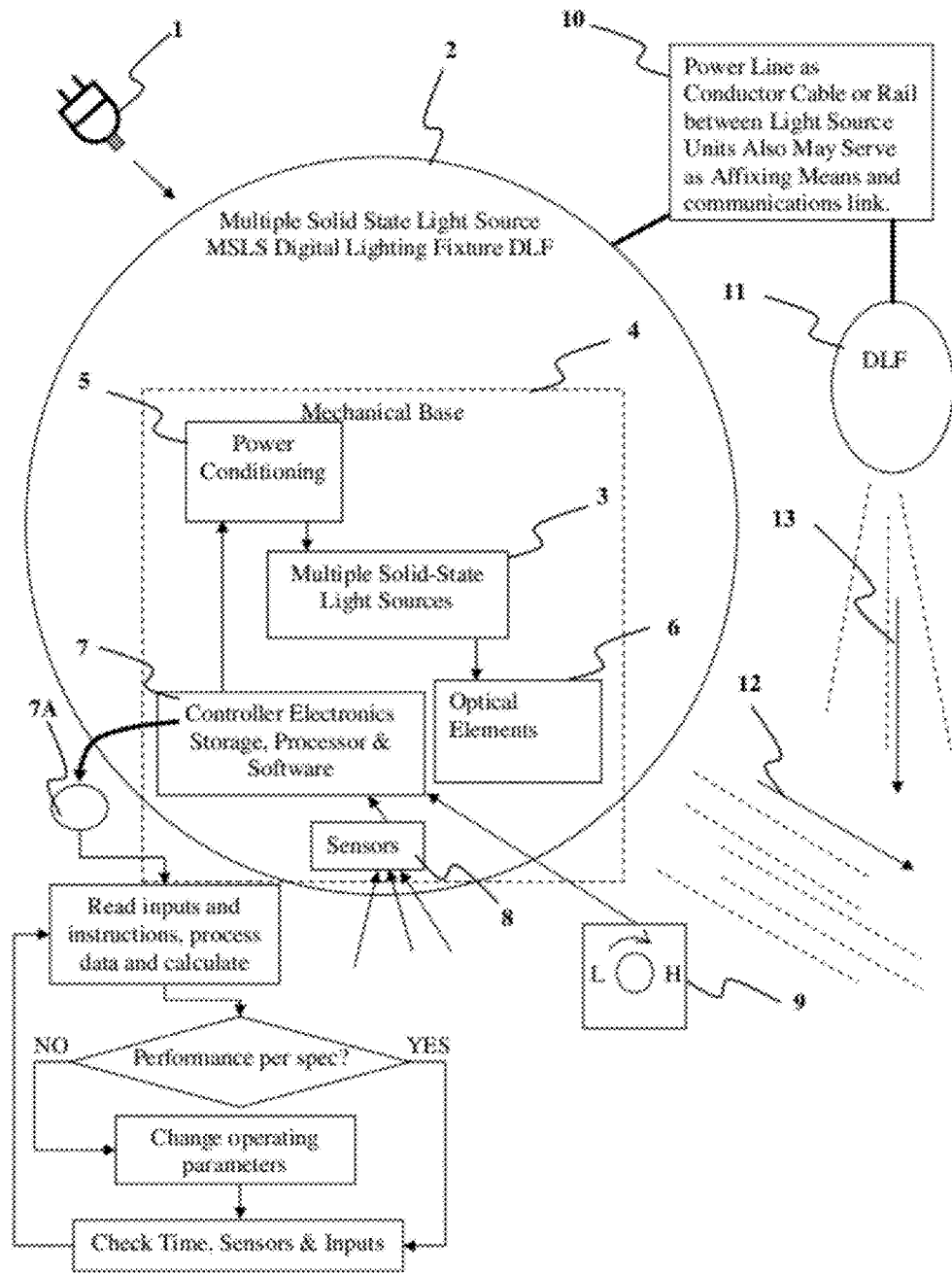


FIG. 1

PRIOR ART

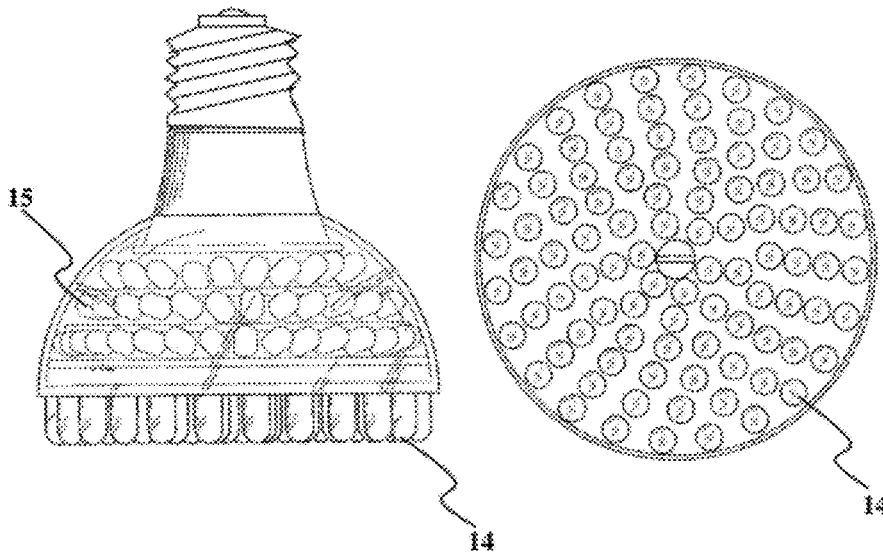


FIG. 2A

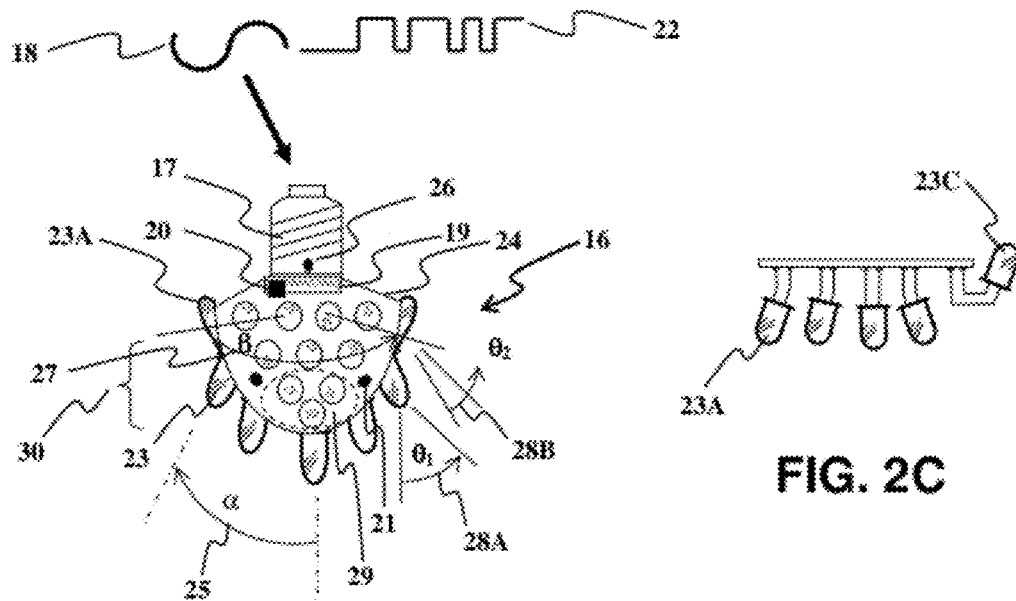
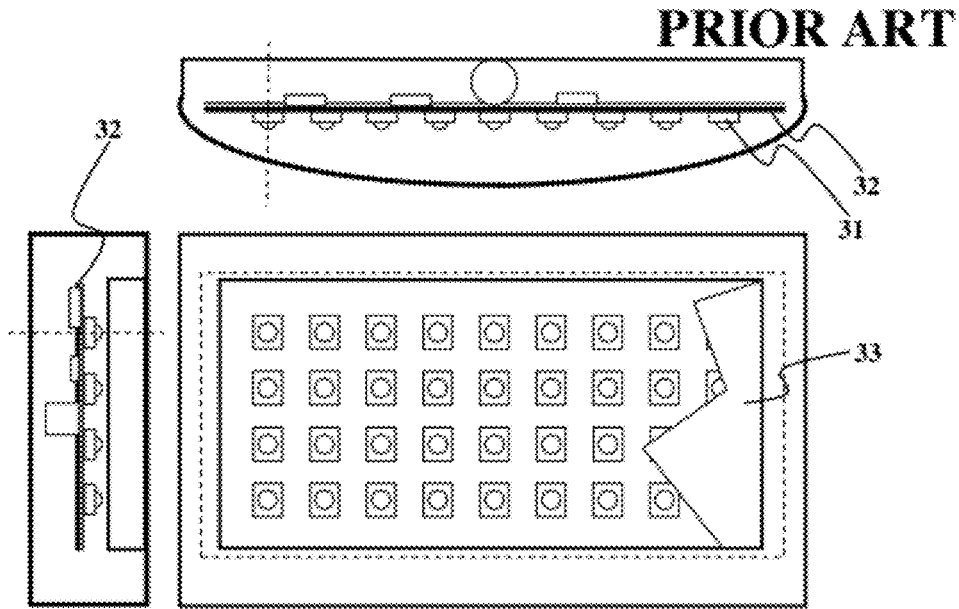
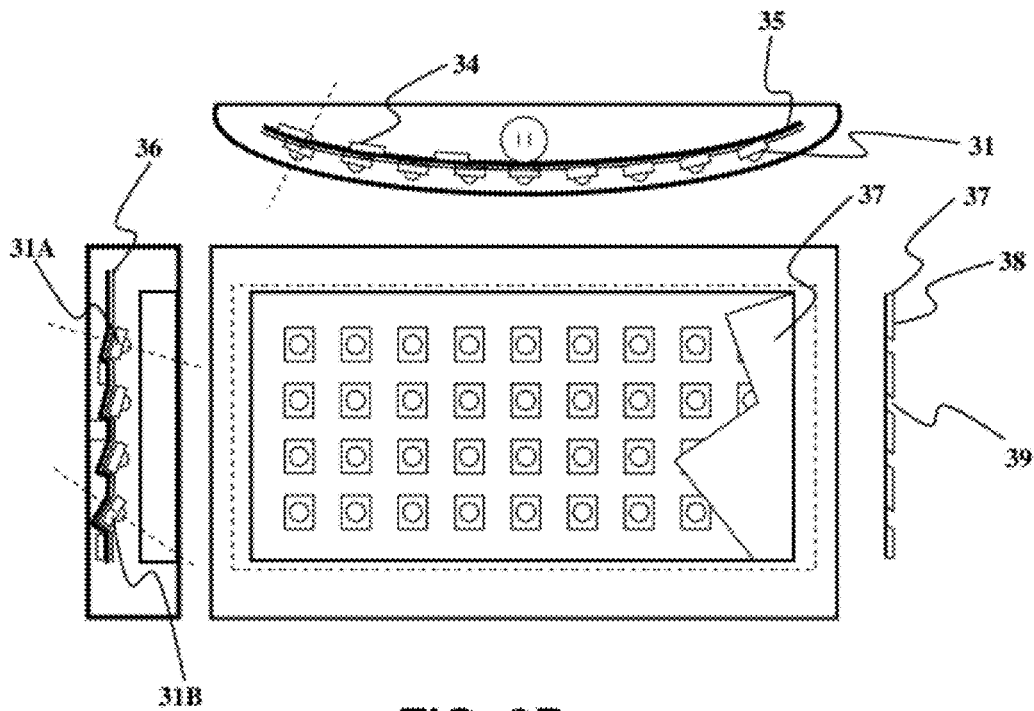


FIG. 2B

FIG. 2C



**FIG. 3A**



**FIG. 3B**

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.