UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BEAR DOWN BRANDS, LLC DBA VERILUX, INC.,

Petitioner,

v.

# THE LITEBOOK COMPANY, LTD.,

Patent Owner.

Case IPR2023-00974

U.S. Patent No. 6,875,225

PETITION FOR INTER PARTES REVIEW

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# TABLE OF ABBREVIATIONS

Abbreviation	Description		
'225	U.S. Patent No. 6,875,225		
'225FH	File History of U.S. Patent No. 6,875,225		
Bolta-032	U.S. Patent No. 5,733,032		
Bolta-164	U.S. Patent No. 6,139,164		
Chen	U.S. Patent No. 6,163,038		
Chien	U.S. Patent No. 5,871,271		
Cole	U.S. Patent No. 4,858,609		
Czeisler	U.S. Patent No. 5,167,228		
Czeisler-192	U.S. Patent No. 5,545,192		
Czeisler-426	U.S. Patent No. 5,163,426		
Gerdes	U.S. Patent No. 6,267,779		
Goldman	U.S. Patent No. 5,923,398		
Hed	U.S. Patent No. 5,301,090		
Hudson	U.S. Patent No. 1,660,794		
Kyricos	U.S. Patent No. 5,503,637		
Lash	U.S. Patent No. 6,086,220		
Lopez-Claros	U.S. Patent No. 5,562,719		
Morcheles	U.S. Patent No. 4,564,886		
Mueller	U.S. Patent No. 6,016,038		
NOA	Notice of Allowance		

Petitioner	Petitioner Bear Down Brands, LLC dba Verilux, Inc.	
РО	Patent Owner; The Litebook Company, Ltd.	
POSITA	Person of Ordinary Skill in the Art	
РТАВ	Patent Trial and Appeal Board	
Schick	U.S. Patent No. 5,908,294	
Simon	Declaration of Eric M. Simon	
USPTO	United States Patent and Trademark Office	
Van Zuylen	U.S. Patent No. 6,221,095	

# TABLE OF EXHIBITS

Exhibit ("Ex.")	Description			
1001	U.S. Patent No. 6,875,225			
1002	File History of U.S. Patent No. 6,875,225			
1003	Declaration of Eric M. Simon			
1004	U.S. Patent No. 5,167,228 ("Czeisler")			
1005	U.S. Patent No. 5,301,090 ("Hed")			
1006	U.S. Patent No. 5,733,032 ("Bolta-032")			
1007	U.S. Patent No. 4,564,886 ("Morcheles")			
1008	U.S. Patent No. 6,163,038 ("Chen")			
1009	U.S. Patent No. 6,267,779 ("Gerdes")			
1010	U.S. Patent No. 5,545,192 ("Czeisler-192")			
1011	U.S. Patent No. 5,871,271 ("Chien")			
1012	U.S. Patent No. 6,086,220 ("Lash")			
1013	U.S. Patent No. 5,908,294 ("Schick")			
1014	U.S. Patent No. 5,163,426 ("Czeisler-426")			
1015	U.S. Patent No. 4,858,609 ("Cole")			
1016	U.S. Patent No. 5,503,637 ("Kyricos")			
1017	U.S. Patent No. 5,562,719 ("Lopez-Claros")			
1018	U.S. Patent No. 6,139,164 ("Bolta-164")			
1019	U.S. Patent No. 1,660,794 ("Hudson")			

1020	Canadian Patent No. 2,300,569 ("Pederson CA1")		
1021	Canadian Patent No. 2,317,319 ("Pederson CA2")		
1022	Heeke, "Light-Emitting Diodes and Cool White Fluorescent Light Similarly Suppress Pineal Gland Melatonin and Maintain Retinal Function and Morphology in the Rat," June 1999		
1023	U.S. Patent No. 5,047,006 ("Brandston")		
1024	U.S. Patent No. 6,488,698 ("Hyman")		
1025	U.S. Patent No. 6,350,275 ("Vreman")		
1026	U.S. Patent No. 5,923,398 ("Goldman")		
1027	U.S. Patent No. 4,429,373 ("Fletcher")		
1028	<ul> <li>National Library of Medicine #101401066</li> <li>("U.S. Army, Fitzsimons General Hospital, Denver, CO: Alpine light treatment, Physio-therapy Department")</li> </ul>		
1029	U.S. Patent No. 6,221,095 ("Van Zuylen")		
1030	U.S. Patent No. 6,016,038 ("Mueller")		
1031	Lex Machina U.S. District Court for the Central District of California Average Lifecyle		
1032 Scheduling Order, Dkt. No. 37 in <i>The Litebook Company, Ltd. v.</i> <i>Verilux, Inc.</i> , Case No. 8:22-cv-01124-CJC-JDE			

# TABLE OF CHALLENGED CLAIMS

Claim	Text		
[1.pre]	A light therapy device comprising:		
[1.a]	an outer housing including an opening,		
[1.b]	a first member and a second member, the first member and the second member being releasably locked together and		
[1.c]	a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating 2,500 lux to 7,500 lux at 12 inches the light emitting assembly being storable in the first member and being mountable on the housing such that the housing acts as a base to support the light emitting assembly.		
[2]	The light therapy device of claim 1 wherein at least some of the LEDs are capable of emitting white-light.		
[3]	The light therapy device of claim 1 wherein a diffuser screen of light diffusing sheet material is positioned over the LEDS.		
[4]	The light therapy device of claim 1 wherein the housing accommodates a therapy calculator programmed to calculate a treatment regime based on an input of information.		
[5]	The light therapy device of claim 1 wherein the first and second members are pivotally connected.		
[6]	The light th rapy [ <i>sic</i> ] device of claim 5 wherein the light emitting assembly is mounted onto the first member and the second member forms a base for support of the first member.		
[12]	The light therapy device of claim 4 wherein the therapy calculator includes a display, a key pad for inputting information and a processor for accepting the information and calculating a treatment regime.		

[15]	The light therapy device of claim 4 wherein th [ <i>sic</i> ] therapy calculator is programmed to prompt a user for an input of information.		
[18.pre]	An ocular light therapy device comprising:		
[18.a]	an outer housing including an opening, a base and an upper member pivotally connected to the base; and		
[18.b]	a light emitting assembly mounted in the upper member of the the [ <i>sic</i> ] housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating 2,500 lux to 7,500 lux at 12 inches.		
[19]	The light therapy device of claim 18 wherein at least some of the LEDs are capable of emitting white-light.		
[20.pre]	A light therapy device comprising:		
[20.a]	an outer housing including an opening,		
[20.b]	the housing including a base for supporting the housing in a therapy position on a support surface;		
[20.c]	a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating 2,500 lux to 7,500 lux at 12 inches.		
[21]	The light therapy device of claim 20 further comprising a support leg for supporting the housing in propped position for light therapy.		
[22]	The light therapy device of claim 21 wherein the support leg is pivotally connected to the housing and rotatable between a supporting position and a stored position.		
[24.pre]	A light therapy device comprising:		
[24.a]	an outer housing including a base for supporting the device on a support surface and an upper member having an inner facing surface and an outer facing surface, the base and the upper member being		

	pivotally connected such that the inner facing surface can be pivoted adjacent the base;		
[24.b]	an opening in the inner facing surface of the upper member; and		
[24.c]	a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating an output of light suitable for ocular light therapy.		
[25]	The light therapy device of claim 24 wherein the light emitting assembly includes at least some white light LEDs.		
[26.pre]	An ocular light therapy device comprising:		
[26.a]	an outer housing including a first member with an opening and a second member releasably lockable to the first member, the housing forming a base for supporting the housing in a treatment positions on a support surface;		
[26.b]	a light emitting assembly in the first member of the housing housing [ <i>sic</i> ] and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of white light emitting LEDs.		
[27]	The light therapy device of claim 26 wherein the plurality of LEDs is capable of generating an output of light suitable for ocular light therapy.		
[28]	The light therapy device of claim 26 wherein the plurality of LEDs is capable of generating 2,500 lux to 7,500 lux at 12 inches.		
[29]	The light therapy device of claim 26 wherein the plurality of LEDs has a total output of light of between 50 and 500 candelas.		

Pursuant to §§311-319 and §42.1, Bear Down Brands, LLC dba Verilux, Inc., ("Petitioner") petitions for *inter partes* review ("IPR") of claims 1-6, 12, 15, 18-22, and 24-29 ("Claims") of U.S. Patent 6,875,225 ("225") (Ex. 1001), assigned to The Litebook Company, Ltd, ("PO").<sup>1</sup> There is a reasonable likelihood—and it is highly likely—that at least one challenged claim is unpatentable as explained herein. Petitioner requests review of the Claims, and judgment finding them unpatentable under §103.

#### I. INTRODUCTION

The '225 is directed to devices for light therapy. '225, 1:6-8. Prior to the '225, there were a significant number of different types of light therapy devices in the field. These devices used different types of light sources for light therapy, including incandescent, fluorescent, and LED light fixtures. *See, e.g.*, Ex. 1015 (U.S. 4,858,609 ("Cole"), titled "Bright Light Mask," describing incandescent lights, fluorescent lights and light emitting diodes); Ex. 1016 (U.S. 5,503,637 ("Kyricos"), titled "Apparatus for Producing and Delivery High-Intensity Light to A Subject,"

<sup>1</sup> Section cites are to 35 U.S.C. (pre-AIA) or 37 C.F.R. as context indicates. All emphasis/annotations added unless noted. Annotations added to the figures herein generally quote the language of the Challenged Claims for reference. All citations herein are exemplary and not meant to be limiting.

published April 2, 1996, describing incandescent lights); Ex. 1017 (U.S. 5,562,719 ("Lopez-Claros") titled "Light Therapy Method and Apparatus," published October 8, 1996, using fluorescent lights). Light therapy was also provided using a variety of different types of devices including, *e.g.*, glasses, helmets, suitcase-portable lamps, light panels, room lighting fixtures, and more. *See, e.g.*, Ex. 1018 (U.S. 6,139,164 ("Bolta-164"), titled "Adjustable Mobile Light Panel Stand"); Kyricos (using a visor); Cole (using a face mask); Ex. 1019 (U.S. 1,660,794 ("Hudson"), titled "Light Therapy Appliance," published February 28, 1928) (using a suitcase); Ex. 1024 (US 6,488,698, ("Hyman"), titled "Portable Light Unit for Treatment of Seasonal Affective Disorders," filed August 16, 2000) (using a suitcase); Ex. 1003 (Declaration of Eric M. Simon ("Simon")), ¶¶26-27.

The '225 Claims are directed to nothing more than another obvious variation of such known devices. The '225 Claims are directed to "light therapy device[s]" that purportedly addresses the need for a "portable and lightweight hand-held light therapy device" but use only well-known components configured to perform well-known functions. *Id*; *See* '225, 1:38-39, claims 1, 18, 20, 24, 26. According to the Examiner, the Claims were allowed because of a combination of elements reciting pivoting members that contain LEDs that produce a light of 2500-7500 lux at 12 inches, or that members are releasably locked together and combined with an ocular device. *See* §VI below. Simon, ¶28.

Yet these elements are not recited in each of the Claims. And, regardless, such devices were well-known in the art. For example, **Czeisler** (Ex. 1004) discloses a light therapy device with pivoting first and second members of its outer housing that are releasably lockable, and that the device includes a light emitting assembly generating at least between 3,000-12,000 lux at ranges spanning between less than an inch to several feet from a patient for ocular light therapy—thus rendering obvious and disclosing outputting 2,500-7,500 lux at 12 inches. And **Hed** (Ex. 1005) discloses implementing such a device using LEDs. In fact, **Hed** discloses the use of its LEDs in **Czeisler's** portable light therapy device, nearly 6 years before the '225 Patent's alleged priority date. Simon, ¶29.

As demonstrated herein, the prior art renders obvious the Claims, which are directed to a simple combination of well-known prior art elements combined according to known methods to yield predictable results. The claimed elements and the claimed arrangement of elements are rendered obvious by the identified combinations of **Czeisler, Hed**, **Morcheles, Chen** and **Gerdes**. At most, the combinations amount to nothing more than a "predictable use of prior art elements according to their established functions." *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Simon, ¶30.

The USPTO did not substantively consider the disclosures of **Czeisler**, **Hed**, **Morcheles**, **Chen**, **Gerdes**, or any other reference providing analogous disclosures

during the '225's prosecution. Petitioner requests that the Board institute trial and find the Claims unpatentable.

## II. MANDATORY NOTICES (§42.8)

## A. Real Party-In-Interest

Pursuant to §42.8(b)(1), Petitioner identifies Bear Down Brands, LLC DBA Verilux, Inc., TS-Bear, LLC, and Project Wilbur Holdings, Inc. as real parties-ininterest.

No other party had access to or control over the present Petition, and no other party funded or participated in preparation of the present Petition.

## **B.** Related Matters

The '225 is currently the subject of the following district court litigations: *The Litebook Company, Ltd., v. Verilux, Inc.,* No. 8:22-cv-01124-CJC-JDE (C.D. Cal., filed 06/07/2022) ("CDCA Litigation").

Petitioner is filing an IPR petition against another unrelated patent asserted against Verilux in the CDCA Litigation: U.S. 7,678,140 (IPR2023-00940). With that Petition, Petitioner is also moving to join IPR2023-00940.

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## C. Lead and Back-Up Counsel and Service Information

Petitioner consents to electronic service of documents to the email addresses

of the counsel identified above.

## **III. PAYMENT OF FEES**

The undersigned authorizes the Office to charge the fee required by §42.15(a)

and any additional fees that might be due to Deposit Account No. 18-1945, under

Order No. 116873-0002-652.

## IV. REQUIREMENTS FOR INTER PARTES REVIEW

## A. Grounds for Standing

Pursuant to §42.104(a), Petitioner certifies the '225 is available for IPR. Petitioner is not barred or estopped from requesting IPR challenging the claims of the '225 on the grounds identified herein.

# **B.** Identification of Challenge

Pursuant to §42.104(b), Petitioner requests IPR of the Claims, and that the Board cancel the same as unpatentable.

# 1. The Specific Art on Which the Challenge Is Based

Name	Ex.	Patent / Publication	Priority Date	Issued / Published	Prior Art Under at Least §102
Czeisler	1004	U.S. 5,167,228	5/9/1990	12/1/1992	(b)
Hed	1005	U.S. 5,301,090	3/16/1992	4/5/1994	(b)
Morcheles	1007	U.S. 4,564,886	1/14/1986	1/14/1986	(b)
Chen	1008	U.S. 6,163,038	5/14/1998	12/19/2000	(e)
Gerdes	1009	U.S. 6,267,779	3/29/1999	7/31/2001	(e)

Petitioner relies upon the following prior art:

# 2. Statutory Grounds on Which the Challenge Is Based

Petitioner respectfully requests cancellation of the Claims on the following grounds:

§103 Ground	Claims	Prior Art
1	1-6, 12, 15, 18- 20, 24-29	Czeisler in view of Hed
2	1-6, 12, 15, 21- 22, 26-29	Czeisler in view of Hed and Morcheles
3	2, 19, 25-26	Czeisler in view of Hed and Chen
4	2, 26	Czeisler in view of Hed, Chen, and Morcheles
5	12	Czeisler in view of Hed and Gerdes
6	12	Czeisler in view of Hed, Morcheles, and Gerdes

## **3.** How the Claims Are Unpatentable

Petitioner provides the information required under \$ 42.104(b)(4)-(5) in \$X.

#### V. '225 PATENT

The Claims generally recite a light therapy device with a housing, including two parts or members capable of pivoting or being releasably locked together, containing a light emitting assembly capable of generating 2500-7,500 lux at a distance of 12 inches. '225, Abstract, claims 1, 18, 20, 24, 26. As shown, the device of Figs. 1-3 comprises an **outer housing 10** that contains an **opening 20** through which an assembly of LEDs 28 emit light. '225, 2:50-64; Fig. 1; Simon, ¶31.



As shown below, the **outer housing** of the device of Figs. 4-5 includes two "members"—**upper housing member 110** and **lower housing member 112**—that pivot relative to each other and are releasably locked together. '225, 4:31-39, Figs. 4-5; Simon, ¶32.



#### VI. '225 PROSECUTION HISTORY

During prosecution, the Examiner repeatedly rejected all pending claims as obvious over combinations of prior art. '225FH, 66-70, 131-137. In response to these rejections, Applicant disputed whether there was a motivation to combine the references, including by submitting a declaration from one of the prior art inventors, added several new claims, and argued the prior art did not disclose limitations including an outer housing with an "opening" and a "base." '225FH, 74-88, 141-145; Simon, ¶33.

The Examiner issued a NOA after a telephonic interview in which the Examiner and Applicant agreed to "[i]nsertion of subject matter from claims 5 and 25 into independent claims 1, 19 and 28." '225FH, 176-184. The Examiner entered an Examiner's amendment amending claim 1 to recite "a first member and a second member, the first member and the second member being releasably locked together"

and "the light emitting assembly being storable in the first member and being mountable on the housing such that the housing acts as a base to support the light emitting assembly"; claim 19 to recite "a base and an upper member pivotally connected to the base" and the light emitting assembly being "mounted in the upper member of the" housing; and claim 28 to recite "a first member with" an opening, "a second member releasably lockable to the first member," the housing "forming" a base, and the light emitting assembly in the "first member of the" housing. '225FH, 181-182. The NOA stated as the reason for allowance that "[t]he prior art of record neither teaches or suggests a light therapy device as claimed in combination with pivoting members that contain LEDs that produce a light of 2500-7500 lux at twelve inches or whereby the members are releasable lockable together and are combined with an ocular device." '225FH, 182; Simon, ¶¶34-36.

## VII. THE BOARD SHOULD NOT EXERCISE ITS DISCRETION TO DENY INSTITUTION

#### A. §325(d)

Considering the two-part framework discussed in *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Pap. 6, \*8-9, the Board should not exercise its §325(d) discretion to deny institution.

The grounds raised by this Petition are not the same or substantially the same as the art and arguments raised during '225's prosecution. The Examiner

did not consider Hed, Morcheles, Chen, Gerdes, or art with substantially the same disclosures (or the same or substantially the same arguments) as those herein. With respect to Czeisler, a different reference, U.S. 5,545,192 (Ex. 1010, "Czeisler-192"), was cited in an IDS ('225FH, 72), but Czeisler-192's specification itself is substantially different from Czeisler's and does not include the disclosures of a light therapy device that are relied upon in this Petition. *See* §X.A. Moreover, Czeisler-192 was not relied upon, cited to, or substantively considered during prosecution. And the incorporations-by-reference of Czeisler are made in paragraphs that mass incorporate by reference nine related patents listed on Czeisler-192's cover. Czeisler-192, 3:42-62, 12:57-62.

Moreover, this incorporation by reference, standing alone, is insufficient to meet *Advanced Bionics* Part One because the Examiner did not consider **Czeisler** in combination with **Hed**, **Morcheles**, **Chen**, and/or **Gerdes** during prosecution. *See Draftkings Inc. v. Ag 18, LLC*, IPR2022-01446, Pap. 15, \*11-13 (finding *Advanced Bionics* Part One not met despite one of the references in an obviousness ground being incorporated by reference into a reference identified in the challenged patent). For example, the Examiner did not consider the combinations of **Czeisler's** teachings of an "easily portable" and mountable fixture "on a flexible positioning stand" (*e.g.*, Czeisler, 63:43-45), **Hed's** LED teachings (Hed, *passim*), **Morcheles's** teachings of a bail support leg that releasably locks the device (*e.g.*, Morcheles, 4:63-

68, 5:26-31), **Chen's** teachings of white LEDs (*e.g.*, Chen, 2:8-11), and **Gerdes's** teachings of key pads and LCD displays (*e.g.*, Gerdes, 9:61-10:56) cited herein. *See* §X. Indeed, each of the Grounds in this Petition relies on **Hed** for its LED teachings to address the claim elements cited in the Notice of Allowance. The Board therefore should not exercise discretion because the Examiner did not consider the "specific combination[s]" of references identified in this petition—each of which relies on references other than **Czeisler** for certain claim elements. *Sony v. MZ Audio Scis.*, *LLC*, IPR2022-01544, Pap. 12, \*7 (§325(d) discretion improper where "Examiner did not consider the specific combination of references asserted").

Even if the art and arguments were substantially the same, the Examiner erred in a manner material to the patentability of the Claims. The combinations of Czeisler's teachings and any teachings that are purportedly the same as those of Czeisler, Hed, Morcheles, Chen, or Gerdes discussed in §X were not discussed during prosecution. Without "further prosecution history" addressing the references' disclosures themselves, it is "impossible ... to determine the consideration the Examiner gave" to these references; the "absence of further evidence of" consideration of these references and this Petition's arguments in §Error! Reference source not found. further demonstrate that "the Office erred in a manner material to patentability." *Ecobee Techs. v. Causam Enterprises, Inc.*, IPR2022-01339, Pap. 20, \*20-21 (declining to exercise §325(d) discretion). The Board should not exercise its §325(d) discretion to deny institution.

#### **B.** §314(a)

Discretionary denial based on the six factors in *Apple Inc. v. Fintiv, Inc.* IPR2020-00019, Pap. 11, is not warranted.

1: Petitioner is filing a motion to stay the CDCA Litigation pending the outcome of this IPR and No IPR2023-00940.

2: C.D. Cal's median time to trial is approximately 857 days (*see* Ex. 1031) – putting the approximate trial date in December of 2024. Though the Court issued a Scheduling Order (Ex. 1032) setting the trial date for October 22, 2024 (which is in the same approximate time frame of an expected final written decision in this IPR), there has been no substantive litigation—including no discovery or claim construction activity.<sup>2</sup>

**3**: To date, the court has not issued any substantive orders regarding the '225, and while discovery is now open, no discovery requests have been served by the parties.

<sup>&</sup>lt;sup>2</sup> See Resi Media LLC v. BoxCast Inc., IPR2022-00067, Paper 16 at 9-15 (declining to exercise discretion to deny institution where the district court trial was scheduled to begin eight months before a final written decision would have been issued).

**4**: After the final written decision, the same grounds and arguments could not be presented in the litigation.

**5**: The litigation and PTAB parties are the same.

**6**: Petitioner is highly likely to prevail with respect to the Claims as shown herein. *See* §X.

## VIII. LEVEL OF ORDINARY SKILL

At the time the '225 patent's earliest priority date,<sup>3</sup> a person of ordinary skill in the art ("POSITA"), would have had a minimum of a bachelor's degree in mechanical engineering, or a related field, along with at least two years of professional experience with light therapy devices. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. Simon, ¶¶38-41.

## IX. CLAIM CONSTRUCTION

Claim terms in IPR are construed using *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). Only terms necessary to resolve the controversy need to be construed. Because the prior art asserted herein discloses embodiments within the

<sup>&</sup>lt;sup>3</sup> Petitioner maintains that the '225 is at most entitled to only its filing date, but even if the Claims are entitled to an earlier date, the claims are still unpatentable under the Grounds set forth in this Petition.

indisputable scope of the claims, the Board need not construe the outer bounds of the Claims. All claim terms should be construed according to their plain and ordinary meaning as would have been understood by a POSITA in view of the specification. Simon, ¶¶42-43.

The prior art discloses [1.pre]/[18.pre]/[20.pre]/[24.pre]/[26.pre] regardless of whether they are limiting. *See* §X; Simon, ¶43.

#### X. GROUNDS OF UNPATENTABILITY

Although the '225 purports to have invented a light therapy device with releasably lockable and pivoting housing "members," such a device was well known in the art. As explained below, the Claims are unpatentable as obvious. Simon, ¶¶44-46.

The prior art renders the Claims unpatentable under each of the Grounds. **Czeisler** teaches a light therapy device including pivoting, releasably lockable members, and an interactive display and key pad, while **Hed** affirmatively discloses using LEDs in light therapy. **Morcheles** provides additional detailed disclosures about a support leg and releasably locked members. **Chen** provides additional teachings of white LEDs. And **Gerdes** provides additional detailed teachings of a display, key pad, and processor. Simon, ¶47-49.

This Petition is supported by the Declaration of Eric M. Simon, which describes the prior art's scope and content at the time of the '225. Simon, ¶¶1-25.

# A. Ground 1 (Claims 1-6, 12, 15, 18-20, 24-29): Czeisler in view of Hed

#### 1. Overview of Czeisler

**Czeisler** discloses "methods and devices for assessing and modifying the circadian cycle in humans," including an "easily portable" light therapy device for "treating 'jet lag' sufferers, shift workers, advanced circadian phase experienced by many elderly subjects, and those afflicted with delayed sleep phase insomnia." Czeisler, Abstract, 1:13-14, 63:43-35. Simon, ¶50.

**Czeisler's** portable device is implemented as a **light fixture**" with an opening that emits light from "many methods for illuminating an environment" including, *e.g.*, fixtures using incandescent lamps or a "bank of ten four-foot fluorescent lamps" that provides more "diffuse" light. Czeisler, 62:35-50, 63:32-33. As shown in Figs. 39a-39c, this portable **light fixture** is also configured to be "mounted" on a **flexible positioning stand** for stationary use, *e.g.*, at home or at work, and allows the user to place it at the ideal height, tilt, and distance":



Czeisler, 63:43-45. Simon, ¶51-52. The device also includes a **display and input buttons** for a user to operate the device. Fig. 39a. Simon, ¶53. For example, the device includes a program that "queries the user" for information used for "[t]iming and scheduling mechanisms ... built into" the device. Czeisler, 65:40-66:30, 67:1-9; Simon, ¶53. **Czeisler** discloses that mounting the **portable light fixture** on the **flexible positioning stand** that is adjustable to place the light at "the ideal height, tilt, and distance." Czeisler, 63:31-48. The **portable light fixture** is thus both releasably locked to the **flexible positioning stand**—the **portable light fixture** is

portable but also mountable on the stand (thus being releasably attached) and able to be positioned in various other positions (thus being locked together to maintain the desired lighting positions shown in Fig. 39a-c)—and pivotally connected to the **flexible positioning stand**—the positions shown in Fig. 39a-c show at least four different pivoted angles for illumination. **Czeisler** further teaches bringing the lights closer to the user—for example, when "[h]alving the distance between the lights and the user" (e.g., from 3 feet to 1.5 feet), the light size and intensity can be reduced, "quartering the total light output" needed to produce "the same amount of light incident to the user's eye." Czeisler, 63:36-40. And to bring the lights even closer, **Czeisler** teaches implementing the device as goggles. Czeisler, 63:63-68. Simon, ¶¶54-55.

**Czeisler** discloses that, at any distance (*e.g.*, using a distant illuminated wall, a closer lighting device, or goggles), the light intensity is generally "on the order of 7,000-12,000 lux (optimally averaging about 9,500 lux or greater)." Czeisler, 19:50-63, 23:3-12, 23:29-46. For a given treatment regime, **Czeisler** further discloses varying light intensity by, for example, both "preced[ing] and follow[ing]" a "7,000-12,000 lux" treatment with an "intermediate level light (3,000-6,000 lux)." Czeisler, 39:11-39, 40:15-20, 40:32-39. Indeed, treatments including light from a variety of ranges between 500-100,000 lux were well-known in the art. Czeisler-192, 7:29-36. Simon, ¶56-57.

**Czeisler** further teaches that its "embodiments" are flexible in order to allow for applying light therapy using different techniques and in different locations—*e.g.*, "portable" treatments, applying treatments in different rooms of the home, and treatments while engaging in other activities. *E.g.*, Czeisler, 63:31-64:2, 67:51-57. A POSITA thus would have understood Czeisler's different teachings to be compatible with one another; it would have been obvious to combine non-mutuallyexclusive features to advantageously obtain their benefits. *Bos. Sci. Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009) ("Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness."). Simon, ¶58

# 2. Overview of Hed and Motivation to Modify Czeisler with Hed's Teachings

**Hed** discloses "a lighting device" or "luminaire" that uses "light emitting diodes" ("LEDs") for "for environmental modification [and] therapy." *See*, *e.g.*, Hed, 1:15-36, 5:31-48, 6:8-19, 8:34-39, 10:47-50. LEDs were "available in a large variety of shapes and flux outputs from a number of manufacturers" such that "one can control the light output and the chromaticity of a luminaire over a relatively large range." Hed, 6:8-38. Light output from the LEDs is diffused with a **diffuser** such that light emanating from LED emitters is diffusely scattered. Hed, Abstract, 3:18-26, 3:37-62, 4:14-20, 5:36-48, 10:30-35, claims 1, 2, 3, 10, 13, 16; Simon, ¶59-61.



**Czeisler** and **Hed** are in the same field as the '225—portable lighting devices—and reasonably pertinent to the alleged problem(s) identified in the '225—e.g., designing portable and lightweight devices.<sup>4</sup> '225, Abstract, 1:33-46 (light

<sup>&</sup>lt;sup>4</sup> A reference is analogous art to the claimed invention if: (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention). *See In re Bigio*, 381 F.3d 1320, 1325, 72 USPQ2d 1209, 1212 (Fed. Cir. 2004) (describing the "[t]wo separate tests").

therapy device needed "that is portable," "provides a portable and lightweight" device; "LEDs offer a light source that is lightweight, small in size"); Czeisler, 63:43-45 (light "fixture is easily portable"); Hed, 2:25-27 ("luminaires that are portable"), 6:8-10 (""luminaire ... light sources are ... small [LEDs]"). Simon ¶62.

**Czeisler** provides broad teachings of a light therapy device implemented using "many different types of commercially available lamps." Czeisler, 23:3-5. **Hed** provides additional teachings of implementing such light therapy devices using LEDs. Hed, 2:33-43; *see also* 1:34-36, 5:8-38, 6:54-58, 7:54-57, 8:40-45, claim 14. A POSITA would have been motivated to modify **Czeisler's** device with **Hed's** teachings of "LEDs," yielding a light therapy device that uses such LEDs, for several reasons. Simon, ¶63.

First, **Hed** provides an explicit motivation for a POSITA to modify **Czeisler** with its teachings, stating that its luminaire teachings are "particularly suitable for the modification and resetting of human circadian cycle, as taught by C.A. Czeisler in U.S. patent application Ser. No. 07/066,677." Hed 2:33-42. **Czeisler** is a continuation-in-part of application 07/066,677, which issued as U.S. 5,163,426 (Ex. 1014), which has similar disclosures of a light device to **Czeisler**. *See* Figs. 39a-c, 7:29-44, 43:40-45:47,45:50-46:42, 46:46-47:34, 47:54-57, 48:5-54). As such, LED usage in light therapy was well known prior to the '225 alleged priority date. *See also, e.g.*, Ex. 1025 (U.S. 6,350,275 ("Vreman"), 3:10-11, '225FH, 133); Ex. 1026

(U.S. 5,923,398 ("Goldman"), 1:65-67, 5:18-20; *see also* '225FH, 197); Cole, 3:46-48. While LEDs have the advantage of having lower power consumption and less heat dissipation, a person of ordinary skill in the art would have expected LEDs to have the same effect on human circadian rhythm as fluorescent lights. Simon, ¶64-65.

Second, **Czeisler** contemplates implementing its teachings using different lighting techniques. **Czeisler** broadly teaches implementing its device using "many methods for illuminating an environment" including, *e.g.*, "incandescent" or "fluorescent" lights. Czeisler, 62:37-43, 62:48-62. **Hed** teaches using LEDs to implement portable therapy devices because LEDs are more energy efficient than alternative lighting techniques and generates less heat. Hed, 1:54-57, 6:8-38, 8:13-27. A POSITA therefore would have been motivated to modify **Czeisler** with **Hed's** LED teachings to advantageously provide a more efficient light therapy device with lower heat output. Simon, **¶**66. **Hed** further teaches that using a diffuser with the LEDs causes the LED light to be sufficiently diffuse for light therapy. Hed, 3:18-20; *see also* Hed, 3:37-44, 4:64-5:6, 5:36-42, Fig. 1; *see also* Czeisler, 62:50-51, 64:58-59; Simon, **¶**67.

In light of the above teachings, a POSITA also would have had a reasonable expectation of success modifying **Czeisler's** light therapy device with **Hed's** teachings of LEDs with a diffuser. Indeed, **Hed** teaches that LEDs are readily

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available for a variety of purposes. E.g., Hed, 6:8-38; Chen (Ex. 1008), 2:10-11,

3:25-28; Chien (Ex. 1011), 7:58-64; Lash (Ex. 1012), 2:58-65; Schick (Ex. 1013),

3:8-15, 3:25-37; Simon, ¶68.

'225	Czeisler in view of Hed
[1.pre] <sup>5</sup> A light therapy device comprising:	<b>Czeisler discloses a light therapy device</b> ( <i>e.g.</i> , "lighting appliance").
	<u>E.g., Czeisler:</u>
	<b>Czeisler</b> teaches a "lighting appliance" for "treating" users. Czeisler, Abstract, 28:27-45, 63:31-48, Figs. 39a-c; Simon, ¶¶69-70.
	• Figs. 39a-c
	FIG. 39a
	FIG. 39b FIG. 39c

3. Claim Charts

<sup>&</sup>lt;sup>5</sup> The prior art discloses the preambles of claim 1, 18, 20, 24, and 26, regardless of whether they are limiting.

• Abstract ("Based on either individual or normative assessment data, <u>the circadian phase and amplitude</u> <u>modification method involves the application of bright</u> ( <u>about 9,500 lux</u> ) <u>light</u> and, advantageously, episodes of imposed darkness, at critically chosen phases to achieve rapid and stable changes in phase and amplitude <u>The methods find special utility in</u> <u>treating "jet lag" sufferers, shift workers, advanced</u> <u>circadian phase experienced by many elderly subjects, and those afflicted with delayed sleep phase</u> <u>insomnia.</u> ")
• <b>10:38-43</b> ("FIG. 39a illustrates a representative <u>lighting</u> <u>appliance</u> . FIG. 39b shows the representative <u>lighting</u> <u>appliance</u> applied to a subject. FIG. 39c illustrates the representative <u>lighting appliance</u> having a flexible stand.")
• 28:27-45 ("The present invention uses a more useful description of circadian phase resetting by light in humans. This description requires a phased summation of graded responses. That is, the response of the circadian system to a given light-dark schedule depends on the cumulative effect of all the light intensity transitions within that schedule, and that the range of intensity changes which exert an important effect are not limited to bright light (e.g., greater than 2,000 lux) but encompass a graded range of responses to light exposures occurring from zero light intensity (i.e., darkness) to over 100,000 lux (e.g., the ambient light intensity of the midday sun). [¶] <i>These findings are verified by several clinical intervention studies and demonstrate the practical use of the above principles in the treatment of actual jet-lag and sleep disorders. The utility of the above principles in the treatment of age-related changes in circadian function, and in the facilitation of temporal adjustment typically required by shift-workers, are also demonstrated.")</i>
• <b>37:34-61</b> ("Thus, methods of endogenous circadian pacemaker phase shifting according to the present

	invention allow a viable <u>treatment method for</u> <u>transmeridian travelers</u> in a variety of scenarios. Also, the endogenous circadian pacemaker phase shifting according to the present invention allows viable <u>treatment for shift workers</u> in a variety of rotating or otherwise unusual (from the point of view of a diurnal animal) work schedule.")
	• <b>63:31-48</b> ("An alternative to large light banks are smaller lights placed closer to the user (FIG. 39a, 39b, 39c). A bank of ten four-foot fluorescent lamps covering a three-foot by four-foot area and positioned vertically produces <i>illumination of 9,500 lux at a distance of about 3 feet from the eye, if the user's gaze is toward the lamps</i> . Halving the distance between the lights and the user allows halving each dimension of the array and quartering the total light output while producing the same amount of light incident to the user's eye. Thus, a light fixture two feet wide and eighteen inches high suffices if it remains approximately eighteen inches from the user's face. Such a fixture is easily portable and can be mounted on a flexible positioning stand that would allow the user to place it at the ideal height, tilt, and distance. <u>Such a fixture makes an ideal device for persons who must use the lights chronically</u> . It may also be desirable to have such a device for home use")
	• See also 7:38-45, 23:38-40.
[1.a] an outer housing including	<b>Czeisler discloses an outer housing including an opening</b> ( <i>e.g.</i> , housing and opening shown in Fig. 39a).
an opening,	E.g., Czeisler:
	<b>Czeisler</b> discloses that the lighting appliance includes a "light fixture" and "flexible positioning stand" that, as shown in Fig. 39a, functions as an <b>outer housing</b> for lamps. The lamps emit light through an <b>opening</b> of the <b>outer housing</b> . Czeisler, Fig. 39a, 63:31-48; Simon, ¶¶71-73.
	• Fig. 39a

	FIG. 39a PROGRAMMABLE HOME UNIT
	<ul> <li>63:31-48 ("An alternative to large light banks are smaller lights placed closer to the user (FIG. 39a, 39b, 39c). <u>A bank of ten four-foot fluorescent lamps</u> covering a three-foot by four-foot area and positioned vertically <u>produces illumination</u> of 9,500 lux at a distance of about 3 feet from the eye, if the user's gaze is toward the lamps. Halving the distance between the lights and the user allows halving each dimension of the array and quartering the total light output while producing the same amount of light incident to the user's eye. Thus, <u>a light fixture</u> two feet wide and eighteen inches high suffices if it remains approximately eighteen inches from the user's face. Such a fixture is easily portable and can be mounted on a <u>flexible positioning stand</u> that would allow the user to place it at the ideal height, tilt, and distance. Such a fixture makes an ideal device for persons who must use the lights chronically. It may also be desirable to have such a device for home use.")</li> </ul>
[1.b] a first member and a second member, the first member and the second member being	<b>Czeisler discloses a first member</b> ( <i>e.g.</i> , member with the "light fixture") <b>and a second member</b> ( <i>e.g.</i> , the "flexible positioning stand"), <b>the first member and the second member being releasably locked together</b> ( <i>e.g.</i> , the light fixture is "portable" and "can be mounted" on the flexible positioning stand and then adjusted for "height, tilt, and distance").


	<u>user to place it at the ideal height, tilt, and distance.</u> Such a fixture makes an ideal device for persons who must use the lights chronically. It may also be desirable to have such a device for home use.")
[1.c] a light	Czeisler discloses a light emitting assembly in the housing
emitting assembly	and operable to emit light through the opening in the
in the housing	housing (e.g., "bank of lamps" "produces illumination";
and operable to	see Fig. 39a), the light emitting assembly capable of
emit light through	generating 2,500 lux to 7,500 lux at 12 inches $(e.g., "3,000)$
the opening in the	to 6,000" and "7,000-12,000" lux at 1.5 feet) the light
housing, the light	emitting assembly being storable in the first member and
emitting assembly	being mountable on the housing such that the housing
including a	acts as a base to support the light emitting assembly $(e.g.,$
plurality of LEDs	the lamps are mounted in the "light fixture" of the housing,
capable of	which acts as a base to support the lamps via a "flexible
generating 2,500	positioning stand").
lux to 7,500 lux at	E.g., Czeisler:
12 inches the	Craiglan disalogos that the light fixture includes within the
light emitting	buying a light amitting accomply that amits light for
assembly being	nousing, a light thereasy method. Creicler 62:21.62. The
storable in the	practicing the light therapy method. Czelsler, 05:51-02. The
first member and	housing and amits light through the opening, and is
being mountable	nousing and emits right through the opening, and is
on the housing	therefore storable in the light fixture. Czelsier, Figs. 39a-
such that the	39c. Simon, <b>11</b> /7-79
housing acts as a	Czeisler further teaches using light dosage of treatments
base to support	including "7,000-12,000 lux" to a user, preceded and
the light emitting	followed by light of "3,000-6000 lux." Czeisler, 39:31-35,
assembly.	40:15-20. This not only renders obvious but affirmatively
	discloses generating 2,500-7,500 lux. Simon, ¶¶80-81.6

<sup>&</sup>lt;sup>6</sup> Disclosure of this overlapping range (and the 3,000-6,000 lux point within the range) is sufficient to disclose this element. *UCB, Inc. v. Actavis Lab'ys UT, Inc.*, 65 F.4th 679, 687, 689 (Fed. Cir. 2023) (prior art that "discloses a point within the

Moreover, it would have been obvious to a POSITA that <b>Czeisler's</b> lamp is also capable of outputting less than 3,000 lux using the same techniques used to reduce output from 12,000 to 3,000 lux—rendering obvious outputs of the complete claimed range. <i>See</i> Czeisler, 39:31-35, 40:15-20; Simon, ¶¶82
<b>Czeisler</b> provides multiple teachings of providing this 2,500- 7,500 lux at 12 inches. <i>First</i> , <b>Czeisler</b> discloses "halving" the distance between the light fixture and the user from three feet to 1.5 feet. Czeisler, 63:30-40. <b>Czeisler's</b> lamp producing 3,000-12,000 lux at 1.5 ft. produces 6,750-27,000 lux at 1 ft. (12 inches), and is therefore capable of generating 6,750-7,500 lux. Simon, ¶83
<u>Second</u> , Czeisler discloses implementing the light emitting assembly at a large variety of ranges spanning from a room's wall, to a panel three to 1.5 feet away, to less than an inch away from the user's face. Czeisler, 7:38-45, 63:63- 64:4, 67:36-40. Indeed, Czeisler teaches that bringing a light panel closer advantageously makes "control of the illumination level very precise." 63:63-64:4. These teachings not only render obvious but affirmatively disclose shrinking a light panel such that it is placed 1 foot, instead of 1.5 feet, from the user, thereby allowing the use of the preferred 3,000-12,000 lux while using less power and more precisely control illumination, meeting this element. <i>Id.</i> , 46:38-43,

claimed range" "anticipates the claim," while a "presumption of obviousness applies where a claimed range overlaps with a range disclosed in the prior art."); Simon, ¶80.



<sup>7</sup> See also Hed, 1:52-65 (describing light therapy device design considerations including electricity usage and heat dissipation).

<sup>8</sup> *E.g.*, Bolta-032 (Ex. 1006), 7:17-18 ("bringing the light panel within 12-24 inches from the patients").

on the order of 7,000-12,000 lux (optimally averaging about 9,500 lux or greater in the preferred embodiment) is applied daily, phase shifts on the order of 9-11 hours in a 2-3 day period are commonly observed.")
<ul> <li>23:29-46 ("Bright light may be administered by any means which provides adequate optical illumination, and it is recommended that user comfort, safety and practicality be considered. Nevertheless, to achieve the lighting intensity desirable for practice according to the preferred embodiment of the present invention 7,000-12,000 lux, averaging about 9,500 lux, essentially the entire ceiling (or wall, etc.) of a room must be covered with fluorescent light fixtures if the subject is to be allowed to freely move throughout the room. Other devices, such as portable goggles or helmets or other appliances may also be employed. Such devices will be explained in greater detail below. All that is necessary is that the retina be exposed to bright light for the properly chosen pulse duration. Of course, the subject need not be staring directly at lights. It is sufficient that he be effectively surrounded by light of the appropriate intensity for the appropriate duration.")</li> </ul>
• <b>40:32-39</b> ("FIG. 1 illustrates an example of an individual being phase advanced using this technique, by an amount of eastward travel equivalent to a trip from Seattle to London. <i>Five hours of full bright light</i> (7,000 to 12,000 lux) exposure was initiated at 6:30 A.M. (with 15 minute transitions of 3,000 to 6,000 lux preceding and following the 5 hour full-bright light exposure), about 1.5 hours before his 8:00 A.M. ECP temperature minimum (as determined by an initial Constant Routine in this case or as could have been surmised from the approximately 9:30 A.M. traditional wake-time of this young man using the normative data of FIG. 5).")

39c). <u>A bank of ten four-foot fluorescent lamps</u> covering a three-foot by four-foot area and positioned vertically produces illumination of 9,500 lux at a distance of about 3 feet from the eye, if the user's gaze is toward the lamps. Halving the distance between the lights and the user allows halving each dimension of the array and quartering the total light output while producing the same amount of light incident to the user's eye. Thus, <u>a light fixture</u> two feet wide and eighteen inches high suffices if it remains approximately eighteen inches from the user's face. <u>Such a fixture is easily portable and can be mounted</u> <u>on a flexible positioning stand that would allow the</u> <u>user to place it at the ideal height, tilt, and distance.</u>
Such a fixture makes an ideal device for persons who must use the lights chronically. It may also be desirable to have such a device for home use.")
<ul> <li>See also 23:13-29, 32:45-48, 38:13-18, 39:31-35, 40:15-18, 42:28-31, 44:60-65, 45:21-26, 46:66-47:3, 61:28-33.</li> </ul>
Hed discloses the light emitting assembly including a plurality of LEDs (e.g., "LEDs").
<u><i>E.g.</i>, Hed:</u>
In addition to <b>Czeisler's</b> disclosure of light sources for the device, <b>Hed</b> teaches using LEDs because they are more efficient, create less heat than fluorescent and incandescent lights, and can be modulated for light output and chromaticity. Hed, 6:33-38, 8:13-27. Since LED light output scales with voltage over a large range, and the intensity of light generated using LEDs also can be reduced by using fewer LEDs, the LEDs were capable of generating light at 12 inches between 2,500 lux ( <i>e.g.</i> , corresponding to a low

would have been motivated to modify <b>Czeisler</b> with <b>Hed's</b> LED teachings based on <b>Hed's</b> explicit discussion of using its teachings with <b>Czeisler's</b> device and to advantageously reduce power and heat output, yielding a light fixture using LEDs. Hed, 1:54-57, 2:33-42, 6:8-38, 8:13-27. Simon, ¶¶86 87.	)—
<ul> <li>1:29-2:2 ("In general, artificial light sources are available in either a predetermined broad spectrum or in an almost monochromatic form. Some well known "white" light sources include incandescent lamps, high intensity discharge (HID) light sources and fluorescent light sources. Among the better known monochromatic light sources we can cite light emitting diodes, lasers of all types and gas discharge tubes. What has not been freely available heretofore, is an efficient light source with a temporally variable spectral output, or at least a time-variable appearance. Currently, when the need for such mean of illumination arises, one can either use filters to allow only part of the spectrum of a white light sources of different spectral distribution to illuminate a single scene. Both of these approaches are cumbersome. Foo instance, when using filters, the segment of the spectrum filtered out is lost to absorption and thus there is a major reduction in the system efficiency. It is desirable to have flat light sources with variable chromaticity and a large degree of luminance homogeneity, which can be modular so as to allow for stepwise increase in total light output from single powering source. In most current lighting systems, the conversion of electricity to visible light is rarely more.</li> </ul>	s e r <u>r</u> <u>e</u>
than 25%, and in some very large light sources, 30% a large amount of heat must be dissipated at the poin of use of the light. Furthermore, there are special situations, particularly in hazardous environments,	<u>t</u>

where it is not desirable to have electrical connectors, conductors or any electrically powered devices within the space that is to be illuminated. In such areas the light sources and their associated wiring must be enclosed in special enclosures, a fact that increases installation costs and reduces efficiency of light output utility. <i>It is thus desirable to provide luminaires which</i> <i>are remotely powered so as to allow for heat</i> <i>withdrawal at the remote location where electricity is</i> <i>converted to light, allow safe installation in hazardous</i> <i>environment, and provide for controllable</i> <i>chromaticity.</i> ")
<ul> <li>2:34-42 ("It is also an object of the invention to provide a luminaire particularly suitable for the modification and resetting of human circadian cycle, as taught by C. A. Czeisler in U.S. patent application Ser. No. 07/066,677, where very high intensity light sources capable of delivering at least 7500 lux are required, and, when desired, without having to discharge the heat generated from such light sources within the space where the light is used.")</li> </ul>
• <b>6:8-20</b> ("In the preferred embodiment of the luminaire shown in FIG. 1, the light sources are simply small light emitting diodes, or <u>LED's</u> . These are <u>available in</u> <u>a large variety of shapes and flux outputs from a</u> <u>number of manufacturers</u> . For instance Hewlett Packard of California provides a full line of LED's ranging in size from miniature devices to large devices having luminosity in the rang of microcandela to one candela. Hewlett Packard supplies both red (wavelength typically around 630 nanometers) and green (wavelength typically 560 nanometer) light emitting diodes suitable for the instant invention.") [sic]
• <b>6:21-26</b> ("These commercial LEDs are usually encapsulated to facilitate mounting and shipment. In the instant invention <u>one can use such commercial</u> <u>LEDs as well as purchase LEDs dies</u> (not

encapsulated, and thus lower the overall cost of system) and solder the dies to the their respective conductors directly.")
• <b>6:33-38</b> ("One of the advantages in using LEDs as the light sources in the instant invention is the fact that the output of the LED scales with the voltage applied over a relatively large range. As a result, one can control the light output and the chromaticity of a luminaire over a relatively large range.")
• 8:13-27 ("While in the above description of the preferred embodiment I have referred to the <u>light</u> <u>sources as light emitting diodes</u> , it should be understood that <u>other monochromatic light sources</u> <u>could be used</u> , including monochromatic miniature gas discharge ("neon light") light sources, or even incandescent light sources with appropriately colored external envelopes. It should be understood, however, that <u>the latter method is extremely inefficient</u> , in that only a very small percentage of the energy used to power the system results in visible light. The reason is that in the first place small incandescent light sources are very inefficient to start with, and second, a large proportion of their emitted light is absorbed in the process of rendering them "monochromatic".")
<ul> <li>10:45-68 ("One of the shortcomings of the embodiments described above involves their application when very high levels of luminous flux are desired. Since <u>light emitting diodes have an overall</u> efficiency of converting electricity to light in the range of 8% to 12%, the balance of the energy is dissipated as heat. When very high luminous output of about 5000 lumens per square meter and higher are required, the heat generated at the luminaire may become too high for passive dissipation and can cause an appreciable rise in the temperature of the luminaire. While this is partially alleviated with the optional heat exchanging system described above, in a number of appreciable to have "line".</li> </ul>
environments, it is not advisable to have "live"

	<ul> <li>electrical wiring and connections in the illuminated zone. I can overcome these shortcomings by positioning the light source remotely from the luminaire and transmitting the light into the luminaire by optical fibers or optical wave guides. With this approach, high intensity light sources can be used, where the conversion of electricity to light is accomplished at the remote location, and thus heat removal is facilitated. <i>Furthermore, the efficiency of a high intensity light source is, as a general rule, much greater than in small light sources</i>.")</li> <li>See also 13:32-14:2.</li> </ul>
[2] The light therapy device of claim 1 wherein at least some of the LEDs are capable of emitting white- light.	Hed discloses that the LEDs are capable of emitting white-light ( <i>e.g.</i> , group of LEDs emit "white light"). <i>E.g.</i> , Hed: <i>See</i> [1.c]. In addition to <b>Czeisler's</b> teachings of using white light ( <i>see</i> , <i>e.g.</i> , Czeisler, 23:3-19, 45:32-48), Hed teaches that a group of LEDs are used to create "white light." As discussed for [1.c], it would have been obvious to a POSITA to implement <b>Czeisler's</b> device using LEDs to obtain benefits regarding efficiency and heat, as taught by Hed. Simon, ¶¶88-90. <sup>9</sup>
	• <b>3:28-36</b> ("In general, where I use the term "monochromatic" to describe the light emitted by one of the light sources of a group, it should be noted that the term is intended to be used in a loose sense to indicate that the sources have different output colors and that the <u>colors are selected so that the</u> <u>combination of light colors emitted by the group has</u> <u>the desired composite effect, e.g. white light</u> . The "monochromatic" light of each emitter can have a wider or narrower band width as desired.")

<sup>9</sup> Indeed, the use of white LEDs was well-known prior to the '225. See, e.g., Chen,

2:10-11, 3:25-28; Chien, 7:58-64; Lash, 2:58-65; Schick, 3:8-15, 3:25-37.

	<ul> <li>6:8-12 ("In the preferred embodiment of the luminaire shown in FIG. 1, <u>the light sources are simply small light emitting diodes</u>, or <u>LED's</u>. These are available in a large variety of shapes and flux outputs from a number of manufacturers.")</li> <li>6:54-58 ("FIG. 1 shows a specific arrangement of the LEDs, namely they are arranged in rows of RGB groups, with all the groups within a column having the same relative orientation and with adjacent columns</li> </ul>
	<ul> <li>See also 2:34-42, 6:12-20, 10:45-68, 13:32-14:2.</li> </ul>
[3] The light therapy device of claim 1 wherein a	Hed discloses a light emitting device housing a diffuser over LEDs within the housing (e.g., "transmissive diffuser extending across the housing" over the device's LEDs).
diffuser screen of light diffusing sheet material is positioned over the LEDs.	<b>E.g., Hed:</b> In addition to <b>Czeisler's</b> disclosure of a diffuser between the lamp and the viewer, <b>Hed</b> teaches a diffuser housed in the light therapy device to diffuse LED emissions. Czeisler, 62:48-62; Hed, 3:15-27, 3:37-44; Simon, ¶¶91-92. As discussed in §X.A.2, a POSITA would have been motivated to modify <b>Czeisler</b> with <b>Hed's</b> LED diffuser to ensure that the LED light emission is diffusely scattered. Simon, ¶93.
	<ul> <li>Fig. 1 <ul> <li>Fig. 1 </li> <li>3:15-27 ("More particularly, the luminaire according to the invention can comprise: a housing; <u>a light-transmissive diffuser extending across the housing for diffusing light impinging upon the diffuser from within the housing: a multiplicity of groups of light emitters</u></li> </ul></li></ul>

in the housing, each group consisting of three emitters emitting light of complementary colors, <u>the groups</u> <u>being spaced apart over an area of the diffuser</u> , <u>whereby the light from the emitters in a group mixes</u> <u>at and is diffused by the diffuser</u> ; and means for energizing the light emitters.")
• <b>3:37-44</b> ("Alternatively, the luminaire can comprise: <u>a</u> <u>light-transmissive diffuser extending across the</u> <u>housing for diffusing light impinging upon the diffuser</u> <u>from within the housing</u> ; a multiplicity of elongated light guides in the housing emitting light over respective lengths thereof; and means at an end of the housing for injecting light into corresponding ends of the light guides")
<ul> <li>4:64-5:6: ("An array of groups 5 of light sources 6, 7, 8 are fastened on the bottom sheet 2, and include respectively a red light source, a green light source and a blue light source. The light sources are mounted in such a way that the light is emitted to the inner space of the box and toward the middle plane 3. <u>The middle sheet 3 and the top sheet 4 are light diffusing screens</u> as described in my copending application Ser. No. 07/788,184 entitled "Light Weight Low Loss Refractive Light Diffusion System'. <u>In essence, the two sheets and 4 form one diffusing screen.</u>")</li> </ul>
• <b>5:36-42</b> ("The use of the <u>dual screen diffuser</u> composed of the sheets 4 and 3, assures that light emitted from the individual light sources emanates from the outer surface of the luminaire completely intermixed. This can be achieved by having the periodicity of the screens be a whole multiple (including the same period) of the period of the light sources groups.")
• <b>8:65-68</b> ("The sheets 42 and 43 are two <u><i>diffusion</i></u> <u><i>screens</i></u> as described for the embodiment in FIG. 1 and are based on my copending application Ser. No. 07/788,184.")

[4] The light therapy device of claim 1 wherein the housing accommodates a therapy calculator programmed to calculate a treatment regime based on an input of information. Czeisler discloses that the housing accommodates a therapy calculator (*e.g.*, "timing and scheduling mechanisms" including a "computer program ... that performs" "relevant calculations" for "therapeutic reasons") **programmed to calculate a treatment regime based on an input of information** (*e.g.*, "program ... inform[s] the user what times to schedule light and darkness" or "automatically turn the lights on when appropriate" based on "information" from "user").

# E.g., Czeisler:

**Czeisler** discloses the **housing** includes built-in timing and scheduling mechanisms for calculating proper times to turn on the lights. The calculation is made based on "information" input from the user in response to queries from a computer program using **display and input buttons**, *e.g.*, as shown in Fig. 39a. Simon, ¶¶94-96.

• Fig. 39a (showing a "programmable home unit")



	<u>adjustment required</u> to synchronize a subject's circadian cycle with a desired activity cycle, and "prescribe" a sequence of applications of bright light so as to achieve that phase adjustment.")
	• <b>65:57-68</b> (" <u>A computer program can be created for</u> <u>any given computer device that performs the relevant</u> <u>calculations. The program queries the user about his</u> <u>or her sleep characteristics and the nature of the</u> <u>change desired.</u> The program <u>allows the user to</u> <u>express this information</u> in nontechnical language-for example, in the case of jet lag amelioration, it would ask the origin and destination locations and the times of the airline flights; the user would not need to know the longitudes of the locations or any of the principles behind the method. <u>The program would inform the</u> <u>user what times to schedule light and darkness.</u> ")
	• <b>65:45-56</b> ("A physician or other person trained in the method can make the determination for an individual; this is appropriate in cases where the change is to be effected for <i>therapeutic reasons</i> such as the treatment of affective personality disorders or the treatment of delayed sleep phase insomnia. However, other applications of the technique, such as treatment of jet lag or to facilitate adaptation to shift changes transitions for workers, may benefit from devices that automate or simplify the <i>calculation</i> of light and darkness schedules based on the formulae of the mathematical model developed herein.")
	• <b>66:22-25</b> (" <u><i>Timing and scheduling mechanisms can also be built into the light fixtures and installations themselves</i>. These devices would determine the proper times and automatically turn the lights on when appropriate.")</u>
	• <i>See also</i> Fig. 19, 37:11-38:4, 67:1-9, claim 1.
[5] The light	Czeisler discloses the light therapy device of claim 1
therapy device of	wherein the first (e.g., including the "light fixture") and
claim 1 wherein	second members (e.g., including the "flexible positioning







	computer program can be created for any given computer device that performs the relevant calculations. <u>The program queries the user about his</u> <u>or her sleep characteristics and the nature of the</u> <u>change desired.</u> The program allows the user to express this information in nontechnical language-for example, in the case of jet lag amelioration, it would ask the origin and destination locations and the times of the airline flights; the user would not need to know the longitudes of the locations or any of the principles behind the method. <u>The program would inform the</u> <u>user what times to schedule light and darkness.</u> ")
	• <b>66:22-30</b> (" <i><u>Timing and scheduling mechanisms can</u> <u>also be built into the light fixtures</u> and installations themselves. These devices would determine the proper times and automatically turn the lights on when appropriate. This is particularly effective where lights are installed in workplaces (for shift change adjustment) or in airport waiting areas and aircraft (for jet lag compensation) since they would operate on programmed schedules without human intervention.")</i>
	• <i>See also</i> 67:1-9 ("portable equipment such as exposure time calculators").
[15] The light therapy device of claim 4 wherein th [ <i>sic</i> ] therapy calculator is programmed to prompt a user for an input of information	Czeisler discloses the light therapy device of claim 4 wherein the therapy calculator is programmed to prompt a user for an input of information ( <i>e.g.</i> , "queries the user").
	<i>E.g.</i> , Czeisler: Czeisler teaches that the calculator program "queries the user" for information. Simon, ¶¶106-108.
	<ul> <li>65:57-68 ("A computer program can be created for any given computer device that performs the relevant calculations. <i>The program queries the user about his or her sleep characteristics and the nature of the change desired.</i> The program allows the user to</li> </ul>

	express this information in nontechnical language-for example, in the case of jet lag amelioration, it would ask the origin and destination locations and the times of the airline flights; the user would not need to know the longitudes of the locations or any of the principles behind the method. The program would inform the user what times to schedule light and darkness.")
	• See also [12].
[18.pre] An ocular light therapy device	<b>Czeisler discloses an ocular light therapy device</b> ( <i>e.g.</i> , "apparatus for administering bright light to a subject's retina").
comprising:	E.g., Czeisler:
	See [1.pre]. Czeisler's device is for ocular light therapy because it administers light "to a subject's retina." Simon, ¶¶109-111.
	• 7:38-45 ("Another embodiment of the invention is an apparatus for administering bright light to a subject's retina, comprising luminous means for controllably emitting bright light; aperture means, located relative to the luminous means for allowing the subject to view his environment even when the luminous means are emitting bright light. The apparatus may be self- supporting, or it may be in the form of portable light goggles.")
	• 23:32-40 ("Nevertheless, to achieve the lighting intensity desirable for practice according to the preferred embodiment of the present invention 7,000-12,000 lux, averaging about 9,500 lux, essentially the entire ceiling (or wall, etc.) of a room must be covered with fluorescent light fixtures if the subject is to be allowed to freely move throughout the room. Other devices, such as portable goggles or helmets or other appliances may also be employed. Such devices will be explained in greater detail below. <u>All that is necessary is that the retina be exposed to bright light for the properly chosen pulse duration. Of course, the subject is the property chosen pulse duration. Of course, the subject is the property chosen pulse duration.</u>

	subject need not be staring directly at lights. It is sufficient that he be effectively surrounded by light of the appropriate intensity for the appropriate duration.")
	<ul> <li>40:11-25 ("By subtracting the initial phase from the desired phase, the magnitude and direction of the required phase shift is determined. Then, by interpolation of FIG. 11 or FIG. 15B, the optimum time to begin the administration of a bright light pulse is determined. <i>This bright light pulse is approximately five hours in duration and has a dosage of approximately 7,000-12,000 lux in a preferred embodiment</i>. Light of half intensity may precede and follow this five-hour pulse for approximately 15 minutes.</li> <li>By interpolation of FIG. 14 or FIG. 15B, the optimum time to begin the dark (sleep) pulse is determined. <i>The dark pulse lasts from approximately six to nine hours in a preferred embodiment</i>. The retina of the eye should be appropriately shielded from all light.")</li> </ul>
	63:31-48.
[18.a] an outer housing including an opening, a base and an upper member pivotally connected to the base; and	<b>Czeisler discloses an outer housing including an opening</b> ( <i>see</i> [1.a]) <b>a base</b> ( <i>see</i> [1.c]) <b>and an upper member</b> ( <i>e.g.</i> , first member including the "light fixture," <i>see</i> [1.c]) <b>pivotally connected to the base</b> ( <i>see</i> [5]).
	<u>E.g., Czeisler:</u>
	<i>See</i> [1.a]-[1.c], [5].
	<b>Czeisler</b> discloses an outer housing including an opening as discussed for [1.a], comprises a housing that acts as a base as discussed for [1.c], has a first member—which is an upper member above the base—that includes the "light fixture" as explained for [1.c] and that is pivotally connected to the base as explained for [5]. Simon, ¶¶112-114.

[18.b] a light	Czeisler in view of Hed renders obvious this element for
emitting assembly	the same reasons explained for [1.c]. See [1.c]; Simon,
mounted in the	¶115.
upper member of	
the the [sic]	
housing and	
operable to emit	
light through the	
opening in the	
housing, the light	
emitting assembly	
including a	
plurality of LEDs	
capable of	
generating 2,500	
lux to 7,500 lux at	
12 inches.	
[19] The light	See [2]. Simon, ¶116.
therapy device of	
claim 18 wherein	
at least some of	
the LEDs are	
capable of	
emitting white-	
light.	
[20.pre]-[20.a] A	See [1.pre]-[1.a]. Simon, ¶117.
light therapy	
device	
comprising:	
an outer housing	
including an	
opening,	
[20 b] the housing	Czaislar discloses the housing including a base for
[20.0] the housing	Czersier discloses the housing including a base for supporting the housing $(S_{aa} [1 h])$ in a therapy position
for supporting the	Supporting the nousing (see $[1,0]$ ) in a therapy position (a.g. a position that "allow[s] the user to place it at the ideal
housing in a	(e.g., a position that anow[5] the user to prace it at the ideal height tilt and distance" for treatment) on a support
therapy position	$\operatorname{surface}(a, a)$ on a surface see Fig. 39b)
uncrapy position	surface (e.g., on a surface, see rig. 590).

	<b>T C 1</b>
on a support	<u>E.g., Czeisler:</u>
surface;	See [1.a]-[1.b], [6], [18.a]. As explained for [1.b], <b>Czeisler's</b> " <b>flexible positioning stand</b> " is a base supporting the housing and <b>light fixture</b> . Czeisler, 63:40-48. The <b>flexible</b> <b>positioning stand</b> is on a surface ( <i>e.g.</i> , a table, as shown in Fig. 39b). The <b>light fixture</b> is moved and tilted as shown in Figs. 39a-c to position the <b>light fixture</b> at a desired "height, tilt, and distance" from the user's face for "treatment." Czeisler, 63:40-48; Czeisler 65:45-56. Simon, ¶¶118-120.
	• Fig. 39a-c:
	FIG. 39a FIG. 39b FIG. 39b FIG. 39b FIG. 39b FIG. 39c FIG. 39c FIG. 39c FIG. 39c FIG. 39c
	See [1 c] [19 h] Simon [10]
[20.c] a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating 2,500 lux to 7,500 lux at 12 inches.	See [1.c], [18.b]. Simon, ¶121.

[24.pre] A light therapy device comprising:	See [1.pre], [18.pre], [20.pre]. Simon, ¶122
[24.a] an outer housing including a base for supporting the device on a support surface and an upper member having an inner facing surface and an outer facing surface, the base and the upper member being pivotally connected such that the inner facing surface can be pivoted adjacent the base;	<ul> <li>Czeisler discloses an outer housing including a base for supporting the device on a support surface and an upper member (see [1.a]-[1.c], [6], [18.a], [20.b]) having an inner facing surface and an outer facing surface (see [1.a], [1.c], [6], [18.a]-[18.b], [20.a], [20.c], Fig. 39a below), the base and the upper member being pivotally connected (see [5], [18.a],) such that the inner facing surface can be pivoted adjacent the base (e.g., "allow the user to place it at the ideal height, tilt, and distance," see Fig. 39c below)</li> <li>E.g., Czeisler:</li> <li>As discussed for [1.pre]-[1.c], [6], [18.a], and [20.b],</li> <li>Czeisler discloses that the lighting appliance includes a housing including a flexible positioning stand (a base for supporting the device on a support surface, e.g., a table) and a light fixture (an upper member). As discussed for [1.a], [1.c], [6], [18.a]-[18.b], [20.a], and [20.c], the light fixture has an inner facing surface, with a perimeter generally defined by an opening, that faces towards the user for shining light through an opening, and an outer facing surface that faces away from the user. Czeisler, Fig. 39a; Simon, ¶[123-125. The base and the upper member are pivotally connected as explained for [5], [18.a].</li> <li>Fig. 39a (showing a base and upper member and inner and outer surfaces)</li> </ul>



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	<ul> <li>Fig. 39a</li> <li>F1G. 39a</li> <li>outer facing surface</li> <li>PROGRAMMABLE</li> <li>HOME UNIT</li> <li>63:31-48 (see [1.a]-[1.c])</li> </ul>
[24.c] a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating an output of light suitable for ocular light therapy.	Czeisler in view of Hed renders obvious a light emitting assembly in the housing and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of LEDs capable of generating an output of light (see [1.c], [18.b], [20.c]) suitable for ocular light therapy (see [1.pre], [18.pre]). Simon, ¶¶129-130.
[25] The light therapy device of claim 24 wherein the light emitting assembly includes at least some white light LEDs.	See [2], [19]. Simon, ¶131.

[26.pre] An ocular light therapy device comprising:	<i>See</i> [18.pre]. Simon, ¶132.
[26.a] an outer housing including a first member with an opening and a second member releasably lockable to the first member, the housing forming a base for supporting the housing in a treatment positions on a support surface;	Czeisler discloses an outer housing including a first member with an opening (see [1.a]-[1.c]) and a second member releasably lockable to the first member (see [1.b]), the housing forming a base for supporting the housing in a treatment position on a support surface (see [1.c], [20.c]). Simon, ¶¶133-134.
[26.b] a light emitting assembly in the first member of the housing housing [ <i>sic</i> ] and operable to emit light through the opening in the housing, the light emitting assembly including a plurality of white light emitting LEDs.	Czeisler in view of Hed discloses a light emitting assembly in the first member of the housing and operable to emit light through the opening in the housing ( <i>see</i> [1.c], [18.b], [20.c], [24.c]), the light emitting assembly including a plurality of white light emitting LEDs ( <i>see</i> [2], [19], [25]). Simon, ¶¶135-136.
[27] The light therapy device of claim 26 wherein	See [24.c]. Simon, ¶137.

the plurality of LEDs is capable of generating an output of light suitable for ocular light therapy.	
[28] The light therapy device of claim 26 wherein the plurality of LEDs is capable of generating 2,500 lux to 7,500 lux at 12 inches.	See [1.c], [18.b], [20.c]. Simon, ¶138.
[29] The light therapy device of claim 26 wherein the plurality of LEDs has a total output of light of between 50 and 500 candelas.	<ul> <li>Czeisler in view of Hed discloses the LEDs having a total output of light of between 50 and 500 candelas (<i>e.g.</i>, LED's generating 3,000-12,000 lux at 12 inches (<i>see</i> [1.c]) is equivalent to 278.7-1114.8 candelas).</li> <li><u>E.g., Czeisler:</u> As discussed for [1.c], it would have been obvious to implement Czeisler's device with a light emitting assembly for viewing at 12 inches. Light generating 3,000-12,000 lux (<i>see</i> [1.c]) at 12 inches has a light output of approximately 278.7-1114.8 candelas, which includes an output of 278.7-500 candelas.<sup>10</sup> Simon, ¶¶139-141.</li> </ul>

<sup>&</sup>lt;sup>10</sup> (luminous intensity in candelas) = (luminance in lux)\*(distance in meters)<sup>2</sup>. Simon, ¶141.

# A. Ground 2 (Claims 1-6, 12, 15, 21-22, 26-29): Czeisler in view of Hed and Morcheles

#### **1.** Overview of Morcheles and Motivation to Combine

In addition to **Czeisler's** teachings of a portable light fixture that can be mounted on a flexible positioning stand, Morcheles provides additional teachings of implementing such a portable fixture such that it can be portably used where no such stand is available. Morcheles, Abstract, 1:39-45; Simon, ¶142. Morcheles discloses a "portable light box" supportable at an angle to a horizontal surface upon which it sits. Morcheles, 1:6-9, 1:38-45, 1:53-2:7. Morcheles discloses that, unlike prior light devices, the disclosed light device is portably used without requiring a "separate easel," or "wire strut" to be "carried separately." Morcheles, 1:38-45. The light box includes base 3 and light tray 5 with cover 7. Morcheles, 2:49-51. When the light box is collapsed into a stored position and **cover 7** and **base 3** are closed together, bail 79 is pivotally rotated into the same plane of the light box and functions as a carrying handle, as shown in Fig. 3 below. Morcheles, Abstract, 5:22-26. When the light box is opened to a supporting position, bail 79 is pivotally rotated to enter the "C" retainers 30, thereby acting as a support leg and placing light tray 5 with cover 7 at an angle to the surface upon which the light box rests, as shown in Fig. 1 below. Morcheles, 5:26-31. See also Morcheles, 5:12-21, Figs. 5-6. Simon, ¶143-145.

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**Morcheles** further teaches that when **base 3** is closed down and around **light tray 5** (*e.g.*, for portability as in Fig. 3 above), **base 3** and **light tray 5** are releasably locked together via a **ball and spring**:

Referring to FIG. 4 a spring-loaded detent 76 comprising a ball 78 and spring 80 are provided in a housing 82 located in sides 37 of light tray 5 near back edge 41. Ball 78 engages a recess 84 in "C" retainers 30 to releasably lock base 3 to light tray 5, when base 3 is closed down and around light tray 5.

Morcheles, 4:63-68. See Fig. 4. Simon, ¶¶143-144.

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A POSITA would have been motivated to modify **Czeisler** (and **Hed**) with **Morcheles's** teachings. **Czeisler**, **Hed**, and **Morcheles** are in the same field as the '225—portable lighting devices—and reasonably pertinent to the alleged problem(s) identified in the '225—*e.g.*, designing portable and lightweight devices. '225, Abstract, 1:33-46; Czeisler, 63:43-45; Hed, 2:25-27, 6:8-10; Morcheles, 1:6-9 ("related to light boxes … having at least one side partially surface with a light diffuser and having therein electric lamps"), 1:53-64 ("object … to provide a light box which is easily portable … relatively slim in profile"). *See also* §X.A.2. Simon, ¶145.

**Czeisler** discloses using a rectangular portable **light fixture** mountable on a **flexible positioning stand** and recognizes that it is advantageous for such devices to be portable, but leaves it to a POSITA to implement such a light fixture in a manner that allows the device to be used portably. Czeisler, Figs. 39a-c, 63:31-48. **Morcheles** discloses that its teachings improve upon light boxes "having at least one

surface partially comprising a light diffuser" in a "rectangular disclosure," including such devices that "incorporated some features of portability." Morcheles, 1:12-38. **Morcheles** further teaches improving upon such devices that are "not truly selfcontained" or usable portably because they require the use of a "support" such as a "separate easel" or "wire strut." *Id.*, 1:39-50. A POSITA therefore would have been motivated to modify **Czeisler** using **Morcheles's** teachings to advantageously allow the **light fixture** to also be portably used without the **flexible positioning stand**, and thus, "self-contained," by implementing **Czeisler's light fixture** as **Morcheles's** light box with a bail and spring-loaded locking mechanism. Czeisler, Figs. 39a-c, 63:31-48; Morcheles, 1:12-38, 5:12-31, Figs. 5-6. Indeed, **Morcheles's light tray** box serves the same purpose as **Czeisler's light fixture**:



Simon, ¶146-147. Modifying **Czeisler's light fixture** with **Morcheles therefore** yields a system in which the **fixture** includes **Morcheles's base** and is dismountable from the **flexible positioning stand** and used **Morcheles's bail** leg in a supporting position for portable treatment, while still having the added advantages of the

**flexible positioning stand** for home treatments, as shown in, e.g., the comparisons of **Czeisler** Fig. 39c and **Morcheles** Fig. 3 below:



Czeisler in view of Morcheles

Czeisler Fig. 39c; Morcheles, 4:63-68, 5:12-31, Fig. 3; Simon, ¶146-147. Czeisler's and Morcheles's well-known housings, bases, legs, etc., represent no more than

common elements and configurations. At most, the combination amounts to nothing more than a "predictable use of prior art elements according to their established functions." *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Simon, ¶¶148-149

In light of the above teachings, a POSITA also would have had a reasonable expectation of success in applying **Morcheles's** teachings of a support leg and locking mechanism with **Czeisler's** light therapy device. Indeed, **Czeisler** discloses that bright light "may be administered by any means," including "self supporting devices"—*e.g.*, **Morcheles's** light box. Czeisler, 7:38-45, 23:29-46, 63:31-64:9; Simon, ¶149.<sup>11</sup>

<sup>11</sup> To the extent PO disputes how **Czeisler** would have been modified with **Morcheles's** teachings, this does not affect the ultimate finding of obviousness. *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) ("[O]ur case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention."). And regardless, any such modification using **Morcheles's** bail and base renders obvious the claims for the same reasons set forth in this section because, in any such device, the "bail" is a support leg in a releasably lockable device. Simon, ¶147.

## 2. Morcheles's Support Leg Teachings (Claims 21-22)

As discussed for Ground 1 above, **Czeisler** discloses a light fixture used for light therapy that is "easily portable." Czeisler, 63:43-45, Abstract, 1:13-14.

As explained above, **Morcheles** discloses the portable device further comprising a support leg for supporting the housing in propped position (*e.g.*, "**bail**" in "position" to "act as an easel strut" to place light "at an angle to the surface") (claim 21), and is pivotally connected to the housing and rotatable between a supporting position (as shown in Fig. 1 below) and a stored position (*e.g.*, "**bail**" "can be rotated" between "easel" position and "collapsed" position) (claim 22). 2:13-27, 5:12-31; Simon, ¶¶150-151.



Modifying **Czeisler** with these teachings therefore teaches a light therapy device with the claimed support leg that, when combined with **Czeisler** and **Hed** (Ground 1) renders obvious claims 21-22. Modifying **Czeisler's** portable light box with **Morcheles'** support leg allows for easier angling towards a patient. **Czeisler's**  device with **Morcheles'** support leg allows for a "self-contained," portable light therapy device to also be angled towards a patient by placing the device on a surface when the positioning stand is unavailable. Simon, ¶¶152-154.

### **3.** Morcheles's Releasable Locking Teachings (Claims 1, 26)

As discussed above, **Czeisler** discloses a light fixture that is "easily portable," and **Morcheles** teaches implementing **Czeisler's** light fixture with a base that improves its portability. Czeisler, 63:43-45. To the extent additional disclosure of "releasably locked" (claim 1)/"releasably lockable" (claim 26) members is required, **Morcheles** further discloses this term. Simon, ¶155.

For [1.b], **Morcheles** discloses a first member (*e.g.*, "light tray") and a second member (*e.g.*, "base"), the first member and the second member being releasably locked together (*e.g.*, "ball" and "spring" "releasably lock" the "base" and "light tray"). For [5], **Morcheles** discloses that these first and second members are pivotally connected (e.g., "A base is also hinged to the light tray"). And for [6], **Morcheles** discloses that the light emitting assembly is mounted onto the first member (*e.g.*, "portable light box" is mounted on "light tray") and the second member forms a base for support of the first member (*e.g.*, "base" for "light tray"). Similarly, for [26.a], the device comprises an outer housing (*e.g.*, "cover") including a first member with an opening (*see* [1.b]), [6]) and a second member releasably lockable to the first member (*see* [1.b]). Simon, ¶[155-156.

Morcheles further teaches that when base 3 is closed down and around light

tray 5 (e.g., for portability as in Fig. 3 above), base 3 and light tray 5 are releasably

locked together via a **ball and spring**:

Referring to FIG. 4 a spring-loaded detent 76 comprising a ball 78 and spring 80 are provided in a housing 82 located in sides 37 of light tray 5 near back edge 41. Ball 78 engages a recess 84 in "C" retainers 30 to releasably lock base 3 to light tray 5, when base 3 is closed down and around light tray 5.



Morcheles, 4:63-68, Fig. 4. The "base" is "hinged" to the light tray such that the base and light tray are pivotally connected. Morcheles, Abstract, 2:12-13. The light
tray also has an aperture within which is mounted a diffuser and lights. *Id*. Simon, ¶157-159.

Accordingly, **Czeisler** in view of **Hed** and **Morcheles** (Ground 2) further renders obvious claims 1-6, 12, 15, 21-22, and 26-29. Simon, ¶160.

# B. Grounds 3 (Claims 2, 19, 25 and 26)/4 (Claims 2, 26): Czeisler in view of Hed and Chen (Ground 3) and Morcheles (Ground 4)

As discussed for Ground 1 above, **Czeisler** in view of **Hed** discloses a **light fixture** including LEDs that generate white light. *See* [2], [19], [25], and [26.b] in §X.A.3 above. To the extent additional disclosure is required of LEDs emitting white light (claims 2, 19)/"white light LEDs" (claim 25)/"white light emitting LEDs" (claim 26), **Chen** discloses these features. **Chen** discloses a "white LED" that "can radiate white light itself." Chen, 2:3-16. By "appropriately adjusting" parameters during manufacture, the "spectrum" of output can be varied. Chen, 2:17-29. Simon, ¶161.

Like **Hed** and **Czeisler**, **Chen** is in the same field as the '225, and is also directed to the same problem of improving the efficiency of a lighting device. Chen, 1:12-46 ("white light-emitting device" where "each pixel ... consists of two red LEDs (R), two green LEDs (G), and one blue LED (B)" is "very complex because at least four electrical terminals are needed"). *See also* §X.A.2. A POSITA would have been motivated to further modify **Hed's** teachings of using multiple "monochromatic" LEDs to generate the white light for **Czeisler's** device (Hed, 3:28-36, 6:8-53; Czeisler, 23:3-19, 45:32-48) because **Chen** teaches that using a white LED instead advantageously simplifies the design a white light-generating device by reducing the number of LEDs required to generate light, thereby reducing the "cost and the difficulty of" the lighting product. Chen, 1:24-2:16, 2:66-67. A POSITA would have had an expectation of success modifying **Hed's** (and **Czeisler's**) teachings by using white LEDs because this merely uses such known devices for their known and intended purpose. Chen, 2:10-11, 3:25-28; Chien, 7:58-64; Lash, 2:58-65; Schick, 3:8-15, 3:25-37. Simon, ¶162-163.

# C. Grounds 5/6 (Claim 12): Czeisler in view of Hed and Gerdes (Ground 5) and Morcheles (Ground 6)

As discussed for Ground 1 above, **Czeisler** broadly discloses a therapy calculator including a display, key pad, and computing device, including a **display and input buttons** for interacting with a user, as shown in Fig. 39a below. *See* [12] in §X.A.3 above; Czeisler, 7:46-59, 65:51-68, 66:22-30, 67:1-9, Fig. 39a. Simon, ¶164.

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To the extent additional disclosure is required of a "display," "keypad," and "processor" (claim 12), **Gerdes's** further teaches these features. Simon, ¶165.

**Gerdes** discloses a therapeutic device for "treatment of medical conditions." Gerdes, 1:5-7, *see also* 1:15-37. Gerdes discloses a **keypad 100** for accepting user input and **LCDs 115, 120** for displaying various information (*e.g.*, system status, user prompts, warnings). Gerdes, 7:67-8:3, 8:7-22, 10:48-56, Figs. 1-2. A controller, such as a microcontroller, controls the components and functions of the device and performs treatment computations as needed. Gerdes, 9:61-10:56, Fig. 5. Simon, ¶¶166.

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FIG. 2

A POSITA would have been motivated to modify **Czeisler** (and **Hed**) with **Gerdes'** key pad and display teachings. Like **Czeisler** and **Hed**, **Gerdes** is reasonably pertinent to the alleged problem(s) identified in the '225—providing light therapy. <sup>12</sup> '225, 2:12-14 ("[t]o facilitate therapy ... a therapy calculator for

<sup>&</sup>lt;sup>12</sup> Prior art is analogous if it is reasonably pertinent to the problem(s) faced by the inventor, even if not in the same field of endeavor. *See* fn. 4 in §X.A.2.

determining a treatment regime based on an input of information"); Gerdes, 1:4-6 ("apparatus ... in the treatment of medical conditions"), 7:40-42 ("control panel ... that includes various input and output devices needed for operating the device"), 1:15-35. Simon, ¶167.

Czeisler broadly teaches a treatment device with a key pad and display for querying a user and accepting inputs but leaves it to a POSITA to implement these features. Czeisler, Figs. 39a, 65:58-67. Gerdes provides additional teachings of implementing treatment devices and with a key pad and two displays, controlled by a microcontroller, which allow a user to provide inputs and to receive output operational information related to a therapeutic treatment. Gerdes, 9:61-10:56. A POSITA therefore would have been motivated to modify Czeisler with Gerdes' detailed display and keyboard teachings in order to advantageously provide the user with a well-understood input mechanism for the device. Indeed, Czeisler's and Gerdes' displays, key pads, and processors are no more than well-known components and configurations of computing devices that interface with users to provide and receive information. At most, the combination amounts to nothing more than a "predictable use of prior art elements according to their established functions." KSR Intern. Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007). Simon, ¶¶168-169.

In light of the above teachings, a POSITA also would have had a reasonable expectation of success in applying **Gerdes'** teachings of a key pad, display, and processor to **Czeisler's** light therapy device. Simon, ¶170.

#### XI. SECONDARY CONSIDERATIONS

There is no evidence in the prosecution history of the '225 or any related application that any arguments regarding secondary considerations exist, let alone that any such arguments could overcome the strong showing of obviousness above or that there is a sufficient nexus to any of the Claims. *See generally* '225FH; Simon, ¶171. Indeed, as demonstrated by the prior art referenced herein, any purported solutions to problems or unexpected results in the '225 were already well known. Simon, ¶171. To the extent Patent Owner asserts the existence of any secondary considerations in its responses, Petitioner reserves the right to address any such evidence.

#### **XII. CONCLUSION**

Substantial, new, and noncumulative technical teachings have been presented for the '225's Claims, which are rendered obvious for the reasons set forth above. Simon, ¶172-176. There is a reasonable likelihood—and its is highly likely—that Petitioner will prevail as to claims 1-6, 12, 15, 18-22, and 24-29. *Inter partes* review of these Claims is accordingly requested.

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Dated: June 16, 2023

Respectfully submitted,

/s/ Daniel W. Richards

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Counsel for Petitioner Verilux, Inc.

### **CERTIFICATE OF COMPLIANCE**

Pursuant to 37 CFR §42.24(a) and (d), the undersigned hereby certifies that this Petition for *Inter Partes* Review complies with the type-volume limitation of 37 CFR §42.24(a)(i) because, exclusive of the exempted portions, it contains 13,347 words as counted by the word processing program used to prepare the paper.

Dated: June 16, 2023

/s/ Daniel W. Richards Daniel W. Richards Reg. No. 69,652

### **CERTIFICATE OF SERVICE**

The undersigned certifies service pursuant to 37 C.F.R. §§42.6(e) and

42.105(b) on the Patent Owner via Priority Mail Express of a copy of this Petition

for Inter Partes Review and supporting materials at the correspondence address of

record for the '225 patent:

#### 68543 - ARENTFOX SCHIFF LLP - Los Angeles 555 West Fifth Street 48th Floor Los Angeles, CA 90013

Courtesy copies of the same documents were also served at the following

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