

11/13/00
JC923 U.S. PTO

BENNETT JONES

The Commissioner of Patents and Trademarks
Washington, D.C. 20231,
U.S.A.

JC929 U.S. PTO
09/10/82
11/13/00

BOX: PATENT APPLICATION

Attorney No.	Docket 44261-4
-----------------	-------------------

Sir:

Transmitted herewith for filing is the patent application of:

Inventors	(1) PEDERSON, Larry V., (2) COFFEY, Clayton G. and (3) HUDEMA, Henry
Title	LIGHT THERAPY DEVICE
Priority	Canadian application 2,300,569, filed March 14, 2000 and Canadian application 2,317,319, filed August 30, 2000

The application comprising:

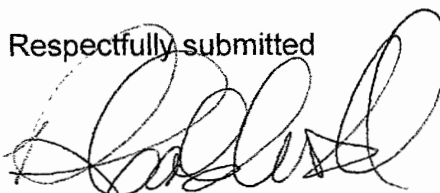
10 pages of Disclosure;
2 pages of Claims;
1 pages of Abstract;
3 sheet(s) of drawings.

and enclosed with the application are:

[XX] A post card.

This patent application is being submitted under **37 CFR 1.53(f)** and **35 U.S.C. 111**, without a Declaration and without the filing fee.

Respectfully submitted



Roseann B. Caldwell
Registration No. 37,077

BENNETT JONES LLP
4500 Bankers Hall East
855 - 2nd Street SW
Calgary, Alberta T2P 4K7
Canada
Telephone: (403) 298-3661
Fax: (403) 265-7219
Encl.

Date: Nov 9, 2000

LIGHT THERAPY DEVICE

FIELD OF THE INVENTION

5

The present invention relates to a light therapy device and in particular to a light therapy device for treatment of light deficient disorders.

BACKGROUND OF THE INVENTION

10

There is much support for the use of light therapy to overcome light deficient disorders. It has been proven that treatments involving shining light directly towards a patient's eyes will alleviate or cure light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia.

15

There are two types of light therapy devices presently available. One type of device is large in size and floor or desk mountable. These devices include light sources of fluorescent bulbs. Although they can be moved from one position to another, they are not generally portable. In addition, the light source is quite fragile. The second kind of light therapy devices is head mountable. These devices are formed as eyeglasses or visors. While they are portable, they are not generally accepted by patients for use in public because of their odd appearance when worn on the head. This combined with safety concerns about eye damage given the proximity of the light source to the eye, has resulted in head mountable treatment devices failing to be generally accepted as a light therapy device.

20

25

30

These devices therefore are of limited use for persons requiring a portable and discreet treatment device. A light therapy device is needed for use by, for example, the business traveler that is portable and aesthetically appealing.

SUMMARY OF THE INVENTION

The present invention provides a portable and lightweight hand-held light therapy device. The device is durable, being resistant to damage by normal transport. The device uses light emitting diodes (LEDs) as a source of light. LEDs offer a light source that is lightweight, small in size, simple, durable as well as energy efficient. The device is useful for travel and for in-flight use while being aesthetically acceptable.

10 In accordance with one aspect of the present invention, there is provided a light treatment comprising: an outer housing including a opening; 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.

15 The LEDs include at least some capable of emitting white-light. In one embodiment, the LEDs are arranged in a pattern over an area and the light emitting assembly is selected to emit light from the LEDs along a substantially straight line directly toward the user. Preferably, a diffuser screen of light diffusing sheet material is positioned
20 over the LEDs to provide a more uniform emission of light. While LEDs do not emit any significant amount of ultraviolet radiation, the diffuser sheet material can include a UV filter, if desired.

The outer housing can include a first member and a second member, the first member
25 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. In one embodiment, the first and second members are pivotally connected and openable in a manner similar to a book. The first and second members, when closed enclose an
30 inner compartment accessible by opening the first and second members about their pivotal connection. The light emitting assembly is storable in the inner compartment.

In this embodiment, the light emitting assembly can be mountable on the first member and the second member can act as a base.

- To facilitate therapy using the device, the housing can also accommodate a therapy
 5 calculator for determining a treatment regime based on an input of information.

BRIEF DESCRIPTION OF THE DRAWINGS

- Figure 1 is a front elevation view of a light therapy device according to the present
 10 invention. A portion of the device has been cut away to facilitate illustration of internal components.

Figure 2 is a side elevation view of the light therapy device of Figure 1 with the support leg folded against the housing.

Figure 3 is a sectional view along line A-A of Figure 1.

- 15 Figure 4 is a side elevation view of another light therapy device according to the present invention in a closed configuration.

Figure 5 is a side elevation view of the device of Figure 4 in an open configuration, ready for use.

Figure 6 is a front elevation of the device and configuration of Figure 5.

- 20 Figure 7 is an elevation of a device for permitting mounting of a light therapy device in a passenger compartment of a vehicle. The device is aligned for insertion into a power port of a vehicle and a light therapy device is aligned for insertion into the docking bay of the device.

25 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

- Referring to Figures 1 to 3, a light therapy device according to one embodiment of the present invention is shown. The device is small in size and resembles a large calculator or hand-held computer. Preferably, the outside dimensions of the device
 30 are less than about 7 inches wide, 7 inches high and 1.5 inches deep. The size can be varied as desired and with consideration as to portability, convenience and the components that must be contained therein.

The device includes an outer housing 10. The housing is preferably formed of a durable, impact resistant material such as, for example, a polymer (i.e. nylon, thermoplastic or blends thereof). Preferably, all housing parts are of minimal thickness to provide suitable impact resistance and support for internal components while minimizing the weight of the device. The housing can be formed, as shown, in parts secured together by screws 12 or other fastening means.

The housing carries a light emitting assembly 20. The light emitting assembly is mounted in the housing such that in operation light emitted therefrom is directed out through an opening 22 in the housing.

Light emitting assembly 20 includes a printed circuit (PC) board 26 providing electrical connection for light emitting diodes 28. The LEDs are spaced apart on the board, with consideration as to their light output and wavelength, such that the assembly emits a light of illumination adequate for treatment of light deficient disorders. In particular, the light emitting assembly generates adequate illumination for treatment of light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia, which is between 2,500 and 7,500 lux, and preferably between about 3,500 and 5,500 lux at 12 inches from the assembly. To generate this level of illumination, the assembly generally includes between about 10 and 150 LEDs together having a total light output of between 50 and 500 candelas and preferably about 250 to 450 candelas. The number of LEDs in the light emitting assembly may be reduced considerably as the efficiency of a LED is increased.

Using a light therapy device according to the present invention, treatments of acceptable duration can be administered. As an example, treatments for SAD can be completed in $\frac{1}{4}$ to 4 hours and in most cases, $\frac{1}{2}$ to 3 hours.

30

For bright-light therapy, preferably white LEDs are used. However, it is sometimes useful to combine light of different wavelengths and in some instances to approximate

the spectral properties or distribution of a tropical sunrise. Therefore, LEDs 28 can be entirely of the type emitting white light or, alternatively, LEDs emitting light of various wavelengths (i.e. red or amber) can be used with white light emitting diodes. The light generated by the light emitting assembly is preferably constant, though it
5 may also be pulsed.

In one embodiment, a diffuser screen 32 is mounted over the diodes to create a more uniform, less harsh light emission. Preferably, LEDs 28 are mounted a suitable distance from diffuser screen 32 such that the light emitted by each LED overlaps on
10 the screen and avoids the appearance of individual points of light behind the screen. If a diffuser screen is used, it is necessary to ensure that adequate levels of light, as set out above, are passed therethrough to permit treatment.

Power is supplied to the LEDs through electrical lines 34. Power can be provided
15 through batteries or preferably, to reduce weight, through a jack 36 for connection to a 120v electrical supply (for use in North America). The device preferably operates using DC power and is supplied with an external AC-DC converter. Since the device is particularly useful during long distance travel in the treatment of jet lag, an adapter can be provided within the device or separately for device compatibility with foreign
20 voltages of AC power or with DC power, as is provided through power ports mounted in aircraft armrests.

To facilitate light treatment, a support leg 40 can be provided for supporting the housing in a propped position such that light is emitted in a generally horizontal
25 direction. In one embodiment, support leg 40 is connected by a hinge 42 to the rear of the housing such that the leg can be rotated between a supporting position and a stored position against the rear of the housing. A more complex stand for elevating the light illuminating assembly can be used, as desired.

30 The light treatment device can be mounted in a vehicle passenger compartment including, for example, a passenger or operator seat area. The vehicle can be, for example, an aircraft, a train, a bus, a truck or an automobile. In one embodiment, the

light treatment device is mounted in an aircraft seat back or in an aircraft seat armrest for use by air travelers. The device can be mounted in a manner similar to aircraft telephones, individual video monitors, and other such devices, wherein the light treatment device is attached to an adjustable extension arm, thereby enabling the user

5 to remove the light treatment device from an armrest and position it appropriately for treatment. Alternately, the light treatment device may be temporarily removed from its seat back mounting position and positioned on a tray table or other surface for treatment, while remaining secured to the seat back by means of a cable that could also serve as a power source. The device may also be mounted into an airliner flight

10 deck or other such areas of an airliner to provide discreet and convenient light treatments for pilots, flight attendants and other such on-board crew affected by jet lag and fatigue.

In another embodiment, the light treatment device can be mounted in the passenger

15 compartments of vehicles, for example, automobiles, transport trucks, buses, trains, and other such vehicles, wherein the device is stored when not in use but readily available to provide a light therapy treatment. In the case of automobiles and trucks, the device may be mounted on the underside of a sun visor, or within the glove compartment, or under the vehicle's dashboard. In the latter two examples, the device

20 can be attached to an adjustable extension arm in order to permit proper positioning for treatment.

The device may also be mounted so as to provide a light treatment for the driver or operator of these vehicles, with appropriate precautions being indicated for safe

25 operation of the vehicle, for example, at those times when the vehicle is parked or idle. One such embodiment is described hereinafter with reference to Figure 7.

Housing 10 can also be formed to accommodate other electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. The housing

30 can also include a cover or a case. Referring to Figures 4 to 6, a light therapy device according to another embodiment of the present invention is shown. The device has an outer housing including an upper housing member 110 and a lower housing

member 112. The housing members are connected by a hinge 114 that permits them to pivot relative to each other between a closed position shown in Figure 4 and an open position shown in Figures 5 and 6. When in the closed position, the housing members can be releasably locked together by a catch 116. The device is small in size and, when closed, resembles a portable compact disc player or a make-up compact.

The housing encloses a light emitting assembly 20. In the illustrated embodiment, light-emitting assembly 20 is mounted in the upper housing member. The light emitting assembly is mounted on the inwardly facing portion of the upper housing member so that, when the device is in the closed position, assembly 20 is protected within the housing members. In this way, the light emitting assembly, which is more fragile than the housing, is protected against damage during transport.

The device is opened for use to administer a light treatment. In a preferred embodiment, upper housing member 110 unfolds from the closed position by rotating about hinge 114. Lower housing member 112 acts as a base for supporting the light emitting assembly. Preferably, hinge 114 is of the type that permits self-locking in at least a few rotational orientations. The use of such a hinge permits that, for example, upper housing member can be oriented to direct the light downwardly, horizontally or, if preferred, in other directions. This is useful as it may be necessary, depending on the treatment, to have the light directed into the patient's eyes or alternately downwardly toward a workspace.

Counterweights (not shown) can be mounted in the lower housing member to prevent the device from tipping. Member 112 can also be formed to accommodate electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. Member 112 can also accommodate a treatment calculator, as will be described hereinbelow.

30

In one embodiment illustrated, for example in Figures 1 to 3, housing 10 also accommodates a calculator including a display 82, a key pad 84 and a processor

mounted within housing 10. The calculator is programmed to calculate a light treatment regime based on input of information. The calculator processor uses calculation references such as that known as the Jet Lag Calculator™ available from Bio-Brite, Inc., Maryland. In one embodiment, the calculator can be used to calculate
 5 light treatment regimes for jet lag based on inputs of information, as follows:

Option 1

- i. Number of time zones crossed during trip
- ii. Direction of time zones crossed (East or West)
- 10 iii. Normal wake-up time of patient (for establishing the patient's "body clock")

Option 2

- i. Departure city
- 15 ii. Arrival city
- iii. Normal wake-up time of patient

Based on the input of the above-noted information, the calculator will then calculate and display a treatment regime including, for example, a period of light exposure and
 20 a period of light avoidance. In option 2, the calculator determines the number of time zones through which travel will occur and uses this to calculate treatment regime. The calculator in one embodiment calculates a two-day treatment regime.

In one embodiment, the calculator keypad includes keys to be depressed when
 25 inputting particular information. As an example, the keypad can include keys such as: "departure city", "destination city" and "wake up time". The calculator can be adapted to prompt the patient such as by displaying questions requesting the appropriate information. Preferably, the calculator includes a pause function capable of recording a time of treatment interruption and capable of outputting from memory
 30 the portion of the treatment remaining when treatment is resumed.

In addition or alternately, the calculator can be programmed for calculation of other treatment regimes such as, for example, for treatments to alleviate fatigue in shift workers. Treatments for shift workers may include inputs such as work shift start time, previous shift time and normal waking time.

5

A speaker 88 is preferably provided for communication to the user. As an example, the speaker can communicate with the calculator processor to audibly prompt a user to input information. In addition, the speaker can function to emit an audible signal, such as an alarm, to alert a user to commence or modify a treatment. In one
10 embodiment, the calculator processor controls a switch for the light emitting assembly such that it is turned on or off in response to a signal from the processor.

In a preferred embodiment, the calculator memory is capable of storing previous treatment regimes. These stored treatment regimes can be recalled from processor
15 memory for repeat trips or shift work schedules.

If desired, to enhance the usefulness of the device, the calculator can also be programmed with other information including a clock, a standard mathematical calculator or other information such as an address book, etc.

20

As noted hereinbefore, a light therapy device according to the present invention can be mounted in a vehicle for use by passengers. One such embodiment is illustrated in Figure 7. A vehicle mounting adaptor 50 useful for mounting a light treatment device in a vehicle passenger compartment acts as an interface between the vehicle power
25 port 52 (i.e. an in-dash cigarette lighter) and the light treatment device 54. In particular, at one end the adaptor has a power port contactor 56 for insertion into the power port. A locking collar 57 is threadedly engaged at the outboard end of the contactor 56. Once power port contactor 56 is inserted into power port 52, locking collar 57 can be tightened down about the port by threaded advancement to reinforce
30 the engagement between port 52 and power port contactor 56.

At the opposite end, the adapter includes a docking port 58 with a recess 59 having therein electrical contactors 60. The light treatment device is mountable in the recess of docking port 58 in electrical communication with contactors 60. Venting slots 64 are formed through the docking port and positioned to substantially align with the
5 vents 66 on light treatment device 54 to provide ventilation to the light treatment device therethrough.

Power cables (cannot be seen) extend between ends 56 and 58 to provide electrical communication therebetween. The power cables are housed within a bendable arm 68
10 of the type including a corrugated tube and internal supports that can be bent into various orientations and, once positioned, will hold fast in that orientation. Arm 68 is bendable yet rigid enough to hold the weight of the light treatment device 54 and docking port 58 without moving out of the bended configuration into which it has been adjusted. Locking collar 57 also securely holds power port contactor 56 in
15 power port 52 even against the weight of the light treatment device and against the stress of bending arm 68. Adapter 50 can be removed from power port 54 and stored when not required.

Numerous modifications, variations and adaptations may be made to the particular
20 embodiments of the invention described above without departing from the scope of the invention as defined in the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

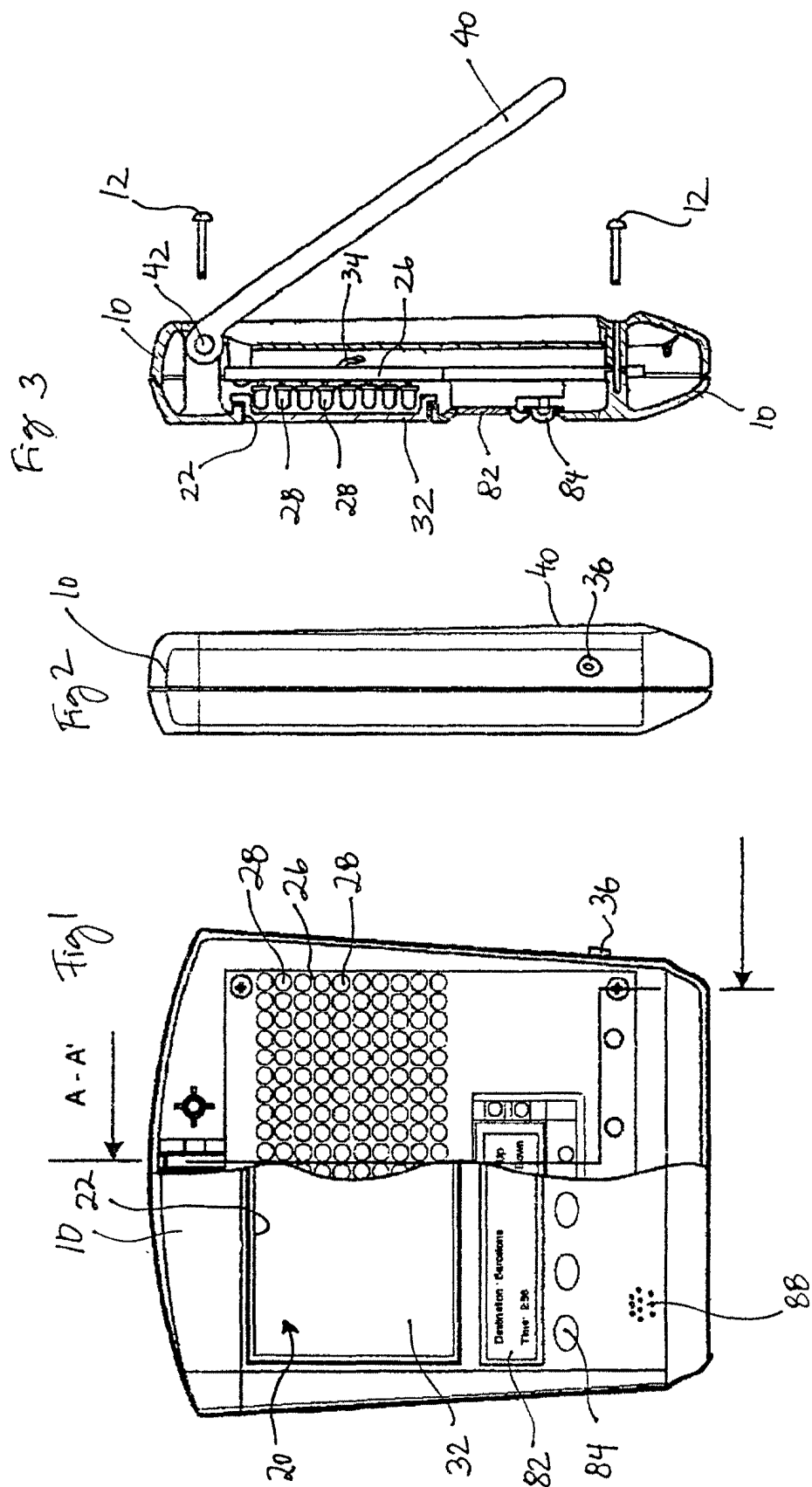
- 5 1. A light therapy device comprising:
 an outer housing including an opening;
 a light emitting assembly in the housing and operable to emit light through the
 opening in the housing, the light emitting assembly including a plurality of
 LEDs capable of generating 2,500 lux to 7,500 lux at 12 inches.
- 10 2. The light therapy device of claim 1 wherein at least some of the LEDs are
 capable of emitting white-light.
- 15 3. The light therapy device of claim 1 wherein a diffuser screen of light diffusing
 sheet material is positioned over the LEDs.
- 20 4. The light therapy device of claim 1 wherein the housing accommodates a
 therapy calculator for determining a treatment regime based on an input of
 information.
- 25 5. The light therapy device of claim 1 wherein the housing includes 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.
- 30 6. The light therapy device of claim 5 wherein the first and second members are
 pivotally connected.
7. The light therapy device of claim 6 wherein the light emitting assembly is
 mounted onto the first member and the second member forms a base for
 support of the first member.

8. The light therapy device of claim 1 wherein the housing is mounted into a vehicle passenger compartment so as to provide light treatment to vehicle passengers or operators.

ABSTRACT OF THE INVENTION

A light therapy device is taught including a light emitting assembly having light emitting diodes (LEDs) as a light source. The light emitting assembly capable of
5 generating 2,500 lux to 7,500 lux at 12 inches.

0074078-14300



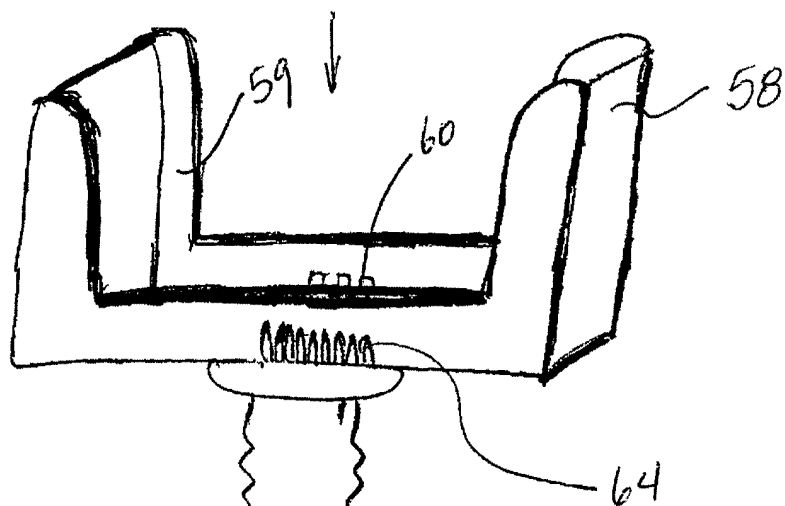
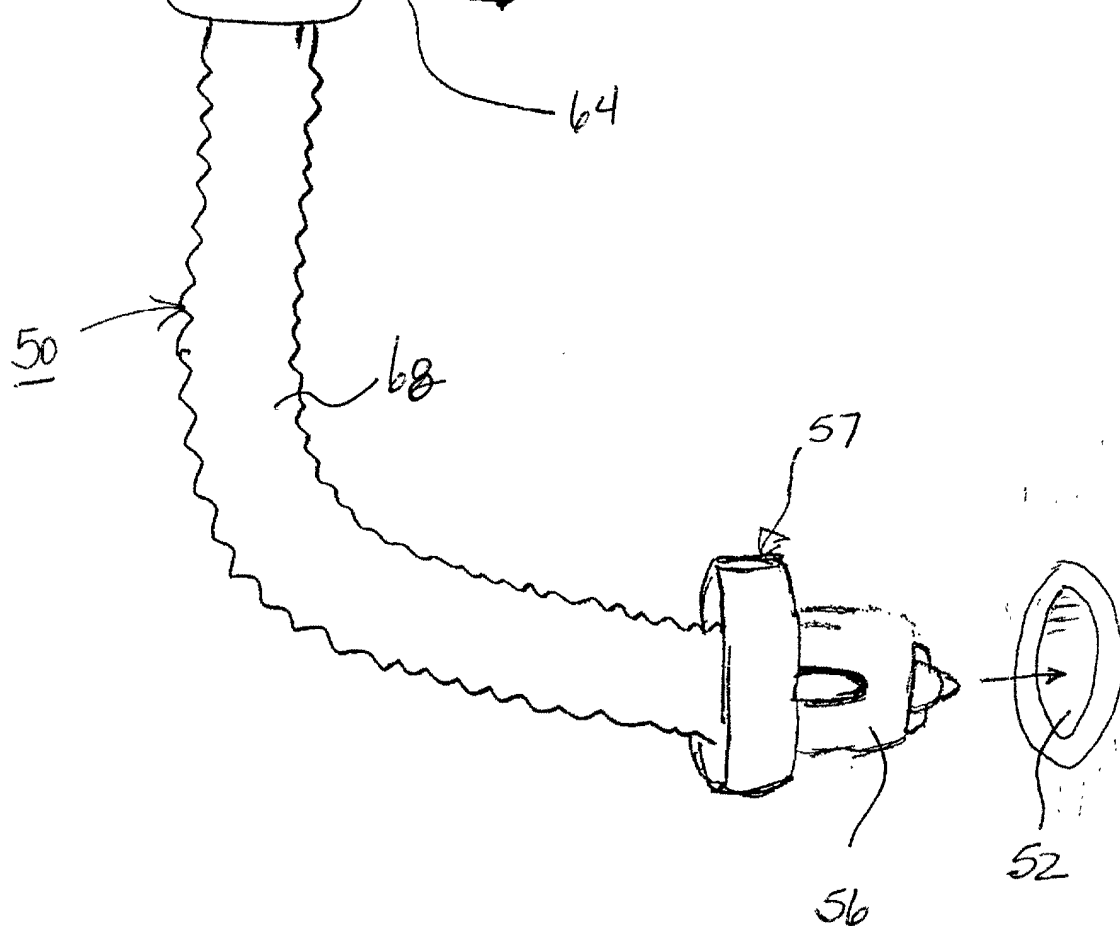


Figure 7



11/13/00
JC923 U.S. PTO

BENNETT JONES

The Commissioner of Patents and Trademarks
Washington, D.C. 20231,
U.S.A.

JC929 U.S. PTO
09/710782
11/13/00

BOX: PATENT APPLICATION

Attorney No.	Docket 44261-4
-----------------	-------------------

Sir:

Transmitted herewith for filing is the patent application of:

Inventors	(1) PEDERSON, Larry V., (2) COFFEY, Clayton G. and (3) HUDEMA, Henry
Title	LIGHT THERAPY DEVICE
Priority	Canadian application 2,300,569, filed March 14, 2000 and Canadian application 2,317,319, filed August 30, 2000

The application comprising:

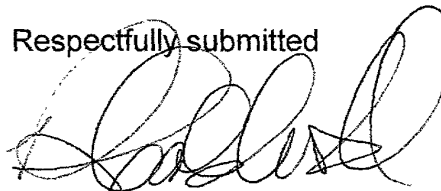
10 pages of Disclosure;
2 pages of Claims;
1 pages of Abstract;
3 sheet(s) of drawings.

and enclosed with the application are:

[☒] A post card.

This patent application is being submitted under **37 CFR 1.53(f)** and **35 U.S.C. 111**, without a Declaration and without the filing fee.

Respectfully submitted



Roseann B. Caldwell
Registration No. 37,077

BENNETT JONES LLP
4500 Bankers Hall East
855 - 2nd Street SW
Calgary, Alberta T2P 4K7
Canada
Telephone: (403) 298-3661
Fax: (403) 265-7219
Encl.

Date: Nov 9, 2000

LIGHT THERAPY DEVICE

FIELD OF THE INVENTION

5

The present invention relates to a light therapy device and in particular to a light therapy device for treatment of light deficient disorders.

BACKGROUND OF THE INVENTION

10

There is much support for the use of light therapy to overcome light deficient disorders. It has been proven that treatments involving shining light directly towards a patient's eyes will alleviate or cure light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia.

15

There are two types of light therapy devices presently available. One type of device is large in size and floor or desk mountable. These devices include light sources of fluorescent bulbs. Although they can be moved from one position to another, they are not generally portable. In addition, the light source is quite fragile. The second kind of light therapy devices is head mountable. These devices are formed as eyeglasses or visors. While they are portable, they are not generally accepted by patients for use in public because of their odd appearance when worn on the head. This combined with safety concerns about eye damage given the proximity of the light source to the eye, has resulted in head mountable treatment devices failing to be generally accepted as a light therapy device.

20

25

These devices therefore are of limited use for persons requiring a portable and discreet treatment device. A light therapy device is needed for use by, for example, the business traveler that is portable and aesthetically appealing.

30

SUMMARY OF THE INVENTION

The present invention provides a portable and lightweight hand-held light therapy device. The device is durable, being resistant to damage by normal transport. The device uses light emitting diodes (LEDs) as a source of light. LEDs offer a light source that is lightweight, small in size, simple, durable as well as energy efficient. The device is useful for travel and for in-flight use while being aesthetically acceptable.

In accordance with one aspect of the present invention, there is provided a light treatment comprising: an outer housing including a opening; 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 LEDs include at least some capable of emitting white-light. In one embodiment, the LEDs are arranged in a pattern over an area and the light emitting assembly is selected to emit light from the LEDs along a substantially straight line directly toward the user. Preferably, a diffuser screen of light diffusing sheet material is positioned over the LEDs to provide a more uniform emission of light. While LEDs do not emit any significant amount of ultraviolet radiation, the diffuser sheet material can include a UV filter, if desired.

The outer housing can include 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. In one embodiment, the first and second members are pivotally connected and openable in a manner similar to a book. The first and second members, when closed enclose an inner compartment accessible by opening the first and second members about their pivotal connection. The light emitting assembly is storable in the inner compartment.

In this embodiment, the light emitting assembly can be mountable on the first member and the second member can act as a base.

- To facilitate therapy using the device, the housing can also accommodate a therapy
5 calculator for determining a treatment regime based on an input of information.

BRIEF DESCRIPTION OF THE DRAWINGS

- Figure 1 is a front elevation view of a light therapy device according to the present
10 invention. A portion of the device has been cut away to facilitate illustration of internal components.

Figure 2 is a side elevation view of the light therapy device of Figure 1 with the support leg folded against the housing.

Figure 3 is a sectional view along line A-A of Figure 1.

- 15 Figure 4 is a side elevation view of another light therapy device according to the present invention in a closed configuration.

Figure 5 is a side elevation view of the device of Figure 4 in an open configuration, ready for use.

Figure 6 is a front elevation of the device and configuration of Figure 5.

- 20 Figure 7 is an elevation of a device for permitting mounting of a light therapy device in a passenger compartment of a vehicle. The device is aligned for insertion into a power port of a vehicle and a light therapy device is aligned for insertion into the docking bay of the device.

25 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

- Referring to Figures 1 to 3, a light therapy device according to one embodiment of the present invention is shown. The device is small in size and resembles a large calculator or hand-held computer. Preferably, the outside dimensions of the device
30 are less than about 7 inches wide, 7 inches high and 1.5 inches deep. The size can be varied as desired and with consideration as to portability, convenience and the components that must be contained therein.

The device includes an outer housing 10. The housing is preferably formed of a durable, impact resistant material such as, for example, a polymer (i.e. nylon, thermoplastic or blends thereof). Preferably, all housing parts are of minimal thickness to provide suitable impact resistance and support for internal components while minimizing the weight of the device. The housing can be formed, as shown, in parts secured together by screws 12 or other fastening means.

The housing carries a light emitting assembly 20. The light emitting assembly is mounted in the housing such that in operation light emitted therefrom is directed out through an opening 22 in the housing.

Light emitting assembly 20 includes a printed circuit (PC) board 26 providing electrical connection for light emitting diodes 28. The LEDs are spaced apart on the board, with consideration as to their light output and wavelength, such that the assembly emits a light of illumination adequate for treatment of light deficient disorders. In particular, the light emitting assembly generates adequate illumination for treatment of light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia, which is between 2,500 and 7,500 lux, and preferably between about 3,500 and 5,500 lux at 12 inches from the assembly. To generate this level of illumination, the assembly generally includes between about 10 and 150 LEDs together having a total light output of between 50 and 500 candelas and preferably about 250 to 450 candelas. The number of LEDs in the light emitting assembly may be reduced considerably as the efficiency of a LED is increased.

Using a light therapy device according to the present invention, treatments of acceptable duration can be administered. As an example, treatments for SAD can be completed in $\frac{1}{4}$ to 4 hours and in most cases, $\frac{1}{2}$ to 3 hours.

30

For bright-light therapy, preferably white LEDs are used. However, it is sometimes useful to combine light of different wavelengths and in some instances to approximate

the spectral properties or distribution of a tropical sunrise. Therefore, LEDs 28 can be entirely of the type emitting white light or, alternatively, LEDs emitting light of various wavelengths (i.e. red or amber) can be used with white light emitting diodes. The light generated by the light emitting assembly is preferably constant, though it
5 may also be pulsed.

In one embodiment, a diffuser screen 32 is mounted over the diodes to create a more uniform, less harsh light emission. Preferably, LEDs 28 are mounted a suitable distance from diffuser screen 32 such that the light emitted by each LED overlaps on
10 the screen and avoids the appearance of individual points of light behind the screen. If a diffuser screen is used, it is necessary to ensure that adequate levels of light, as set out above, are passed therethrough to permit treatment.

Power is supplied to the LEDs through electrical lines 34. Power can be provided
15 through batteries or preferably, to reduce weight, through a jack 36 for connection to a 120v electrical supply (for use in North America). The device preferably operates using DC power and is supplied with an external AC-DC converter. Since the device is particularly useful during long distance travel in the treatment of jet lag, an adapter can be provided within the device or separately for device compatibility with foreign
20 voltages of AC power or with DC power, as is provided through power ports mounted in aircraft armrests.

To facilitate light treatment, a support leg 40 can be provided for supporting the housing in a propped position such that light is emitted in a generally horizontal
25 direction. In one embodiment, support leg 40 is connected by a hinge 42 to the rear of the housing such that the leg can be rotated between a supporting position and a stored position against the rear of the housing. A more complex stand for elevating the light illuminating assembly can be used, as desired.

30 The light treatment device can be mounted in a vehicle passenger compartment including, for example, a passenger or operator seat area. The vehicle can be, for example, an aircraft, a train, a bus, a truck or an automobile. In one embodiment, the

light treatment device is mounted in an aircraft seat back or in an aircraft seat armrest for use by air travelers. The device can be mounted in a manner similar to aircraft telephones, individual video monitors, and other such devices, wherein the light treatment device is attached to an adjustable extension arm, thereby enabling the user

5 to remove the light treatment device from an armrest and position it appropriately for treatment. Alternately, the light treatment device may be temporarily removed from its seat back mounting position and positioned on a tray table or other surface for treatment, while remaining secured to the seat back by means of a cable that could also serve as a power source. The device may also be mounted into an airliner flight

10 deck or other such areas of an airliner to provide discreet and convenient light treatments for pilots, flight attendants and other such on-board crew affected by jet lag and fatigue.

In another embodiment, the light treatment device can be mounted in the passenger

15 compartments of vehicles, for example, automobiles, transport trucks, buses, trains, and other such vehicles, wherein the device is stored when not in use but readily available to provide a light therapy treatment. In the case of automobiles and trucks, the device may be mounted on the underside of a sun visor, or within the glove compartment, or under the vehicle's dashboard. In the latter two examples, the device

20 can be attached to an adjustable extension arm in order to permit proper positioning for treatment.

The device may also be mounted so as to provide a light treatment for the driver or operator of these vehicles, with appropriate precautions being indicated for safe

25 operation of the vehicle, for example, at those times when the vehicle is parked or idle. One such embodiment is described hereinafter with reference to Figure 7.

Housing 10 can also be formed to accommodate other electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. The housing

30 can also include a cover or a case. Referring to Figures 4 to 6, a light therapy device according to another embodiment of the present invention is shown. The device has an outer housing including an upper housing member 110 and a lower housing

member 112. The housing members are connected by a hinge 114 that permits them to pivot relative to each other between a closed position shown in Figure 4 and an open position shown in Figures 5 and 6. When in the closed position, the housing members can be releasably locked together by a catch 116. The device is small in size and, when closed, resembles a portable compact disc player or a make-up compact.

The housing encloses a light emitting assembly 20. In the illustrated embodiment, light-emitting assembly 20 is mounted in the upper housing member. The light emitting assembly is mounted on the inwardly facing portion of the upper housing member so that, when the device is in the closed position, assembly 20 is protected within the housing members. In this way, the light emitting assembly, which is more fragile than the housing, is protected against damage during transport.

The device is opened for use to administer a light treatment. In a preferred embodiment, upper housing member 110 unfolds from the closed position by rotating about hinge 114. Lower housing member 112 acts as a base for supporting the light emitting assembly. Preferably, hinge 114 is of the type that permits self-locking in at least a few rotational orientations. The use of such a hinge permits that, for example, upper housing member can be oriented to direct the light downwardly, horizontally or, if preferred, in other directions. This is useful as it may be necessary, depending on the treatment, to have the light directed into the patient's eyes or alternately downwardly toward a workspace.

Counterweights (not shown) can be mounted in the lower housing member to prevent the device from tipping. Member 112 can also be formed to accommodate electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. Member 112 can also accommodate a treatment calculator, as will be described hereinbelow.

30

In one embodiment illustrated, for example in Figures 1 to 3, housing 10 also accommodates a calculator including a display 82, a key pad 84 and a processor

mounted within housing 10. The calculator is programmed to calculate a light treatment regime based on input of information. The calculator processor uses calculation references such as that known as the Jet Lag Calculator™ available from Bio-Brite, Inc., Maryland. In one embodiment, the calculator can be used to calculate
 5 light treatment regimes for jet lag based on inputs of information, as follows:

Option 1

- i. Number of time zones crossed during trip
- ii. Direction of time zones crossed (East or West)
- 10 iii. Normal wake-up time of patient (for establishing the patient's "body clock")

Option 2

- i. Departure city
- 15 ii. Arrival city
- iii. Normal wake-up time of patient

Based on the input of the above-noted information, the calculator will then calculate and display a treatment regime including, for example, a period of light exposure and
 20 a period of light avoidance. In option 2, the calculator determines the number of time zones through which travel will occur and uses this to calculate treatment regime. The calculator in one embodiment calculates a two-day treatment regime.

In one embodiment, the calculator keypad includes keys to be depressed when
 25 inputting particular information. As an example, the keypad can include keys such as: "departure city", "destination city" and "wake up time". The calculator can be adapted to prompt the patient such as by displaying questions requesting the appropriate information. Preferably, the calculator includes a pause function capable of recording a time of treatment interruption and capable of outputting from memory
 30 the portion of the treatment remaining when treatment is resumed.

In addition or alternately, the calculator can be programmed for calculation of other treatment regimes such as, for example, for treatments to alleviate fatigue in shift workers. Treatments for shift workers may include inputs such as work shift start time, previous shift time and normal waking time.

5

A speaker 88 is preferably provided for communication to the user. As an example, the speaker can communicate with the calculator processor to audibly prompt a user to input information. In addition, the speaker can function to emit an audible signal, such as an alarm, to alert a user to commence or modify a treatment. In one
10 embodiment, the calculator processor controls a switch for the light emitting assembly such that it is turned on or off in response to a signal from the processor.

In a preferred embodiment, the calculator memory is capable of storing previous treatment regimes. These stored treatment regimes can be recalled from processor
15 memory for repeat trips or shift work schedules.

If desired, to enhance the usefulness of the device, the calculator can also be programmed with other information including a clock, a standard mathematical calculator or other information such as an address book, etc.

20

As noted hereinbefore, a light therapy device according to the present invention can be mounted in a vehicle for use by passengers. One such embodiment is illustrated in Figure 7. A vehicle mounting adaptor 50 useful for mounting a light treatment device in a vehicle passenger compartment acts as an interface between the vehicle power
25 port 52 (i.e. an in-dash cigarette lighter) and the light treatment device 54. In particular, at one end the adaptor has a power port contactor 56 for insertion into the power port. A locking collar 57 is threadedly engaged at the outboard end of the contactor 56. Once power port contactor 56 is inserted into power port 52, locking collar 57 can be tightened down about the port by threaded advancement to reinforce
30 the engagement between port 52 and power port contactor 56.

At the opposite end, the adapter includes a docking port 58 with a recess 59 having therein electrical contactors 60. The light treatment device is mountable in the recess of docking port 58 in electrical communication with contactors 60. Venting slots 64 are formed through the docking port and positioned to substantially align with the
5 vents 66 on light treatment device 54 to provide ventilation to the light treatment device therethrough.

Power cables (cannot be seen) extend between ends 56 and 58 to provide electrical communication therebetween. The power cables are housed within a bendable arm 68
10 of the type including a corrugated tube and internal supports that can be bent into various orientations and, once positioned, will hold fast in that orientation. Arm 68 is bendable yet rigid enough to hold the weight of the light treatment device 54 and docking port 58 without moving out of the bended configuration into which it has been adjusted. Locking collar 57 also securely holds power port contactor 56 in
15 power port 52 even against the weight of the light treatment device and against the stress of bending arm 68. Adapter 50 can be removed from power port 54 and stored when not required.

Numerous modifications, variations and adaptations may be made to the particular
20 embodiments of the invention described above without departing from the scope of the invention as defined in the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A light therapy device comprising:
 an outer housing including an opening;
 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.
- 10 2. The light therapy device of claim 1 wherein at least some of the LEDs are
 capable of emitting white-light.
- 15 3. The light therapy device of claim 1 wherein a diffuser screen of light diffusing
 sheet material is positioned over the LEDs.
- 20 4. The light therapy device of claim 1 wherein the housing accommodates a
 therapy calculator for determining a treatment regime based on an input of
 information.
- 25 5. The light therapy device of claim 1 wherein the housing includes 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.
- 30 6. The light therapy device of claim 5 wherein the first and second members are
 pivotally connected.
7. The light therapy device of claim 6 wherein the light emitting assembly is
 mounted onto the first member and the second member forms a base for
 support of the first member.

8. The light therapy device of claim 1 wherein the housing is mounted into a vehicle passenger compartment so as to provide light treatment to vehicle passengers or operators.

ABSTRACT OF THE INVENTION

A light therapy device is taught including a light emitting assembly having light emitting diodes (LEDs) as a light source. The light emitting assembly capable of
5 generating 2,500 lux to 7,500 lux at 12 inches.

00740782 44300

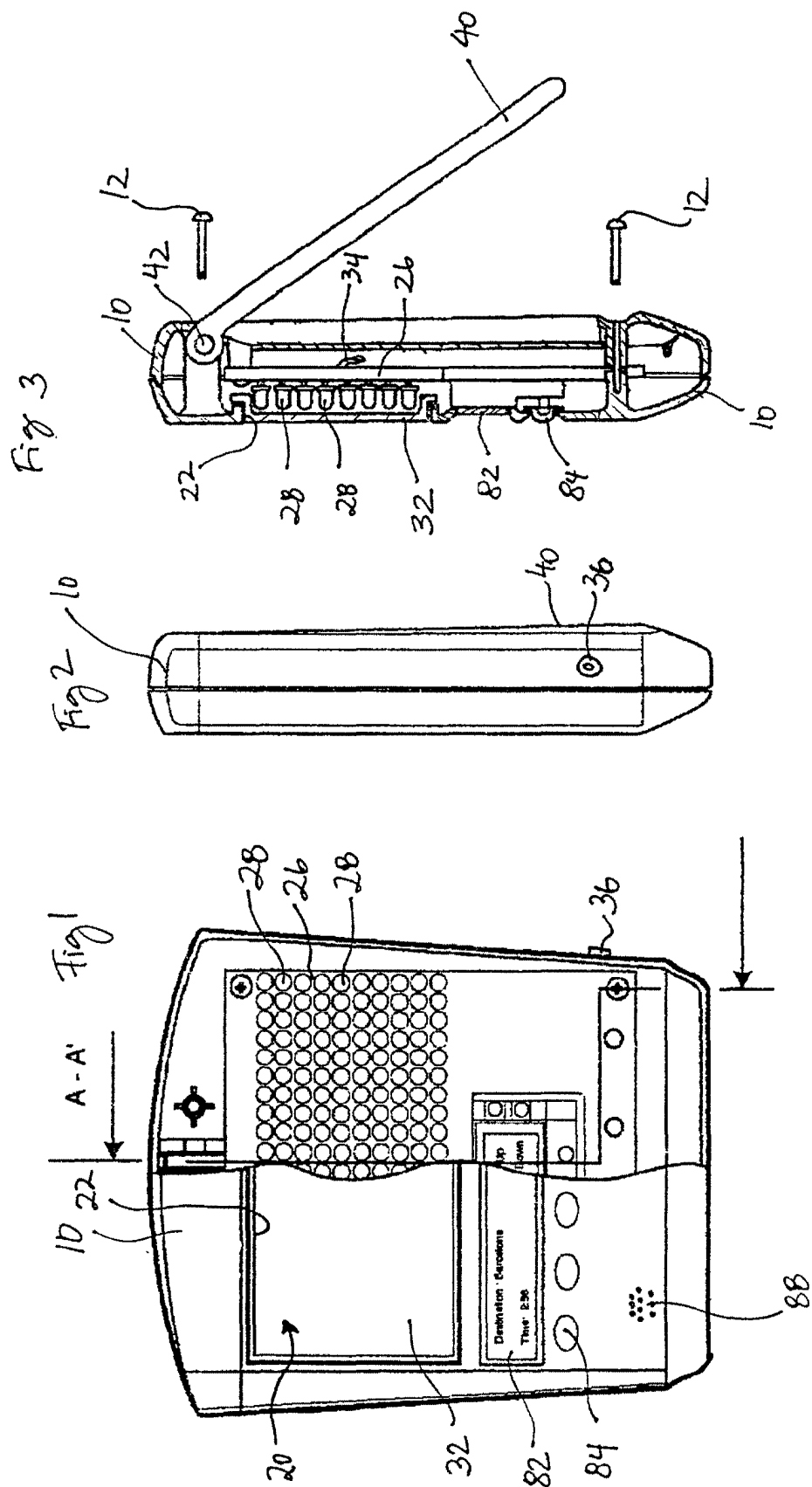


FIGURE 4

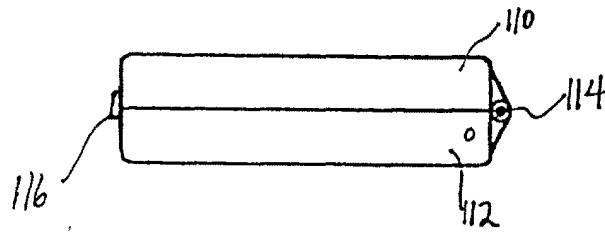


FIGURE 5

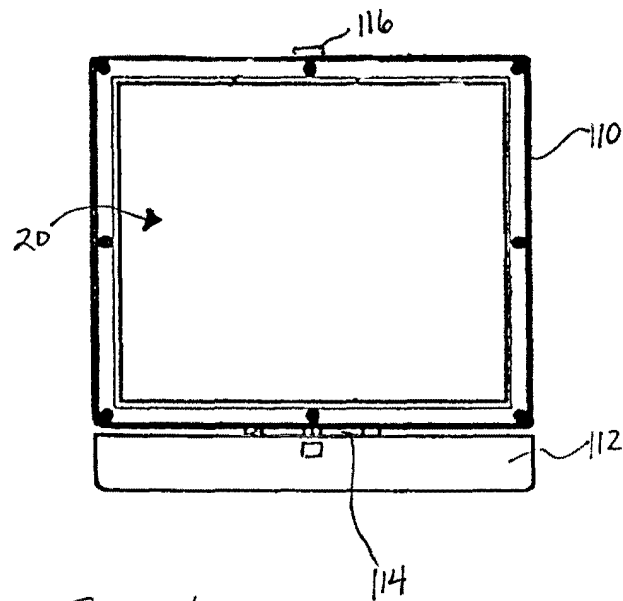
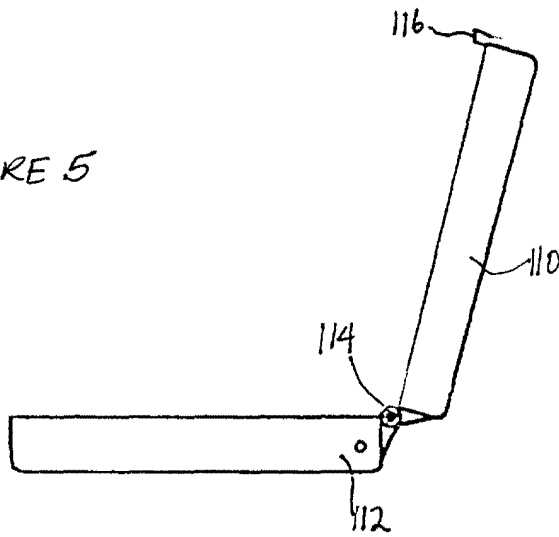


FIGURE 6

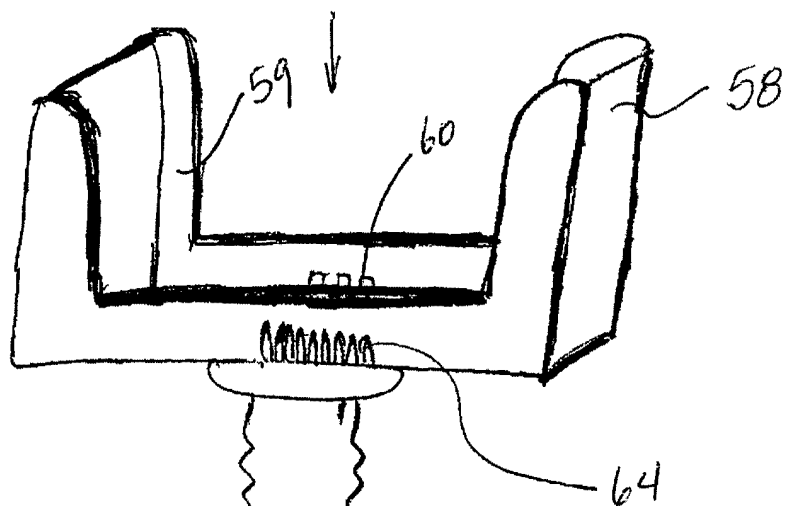
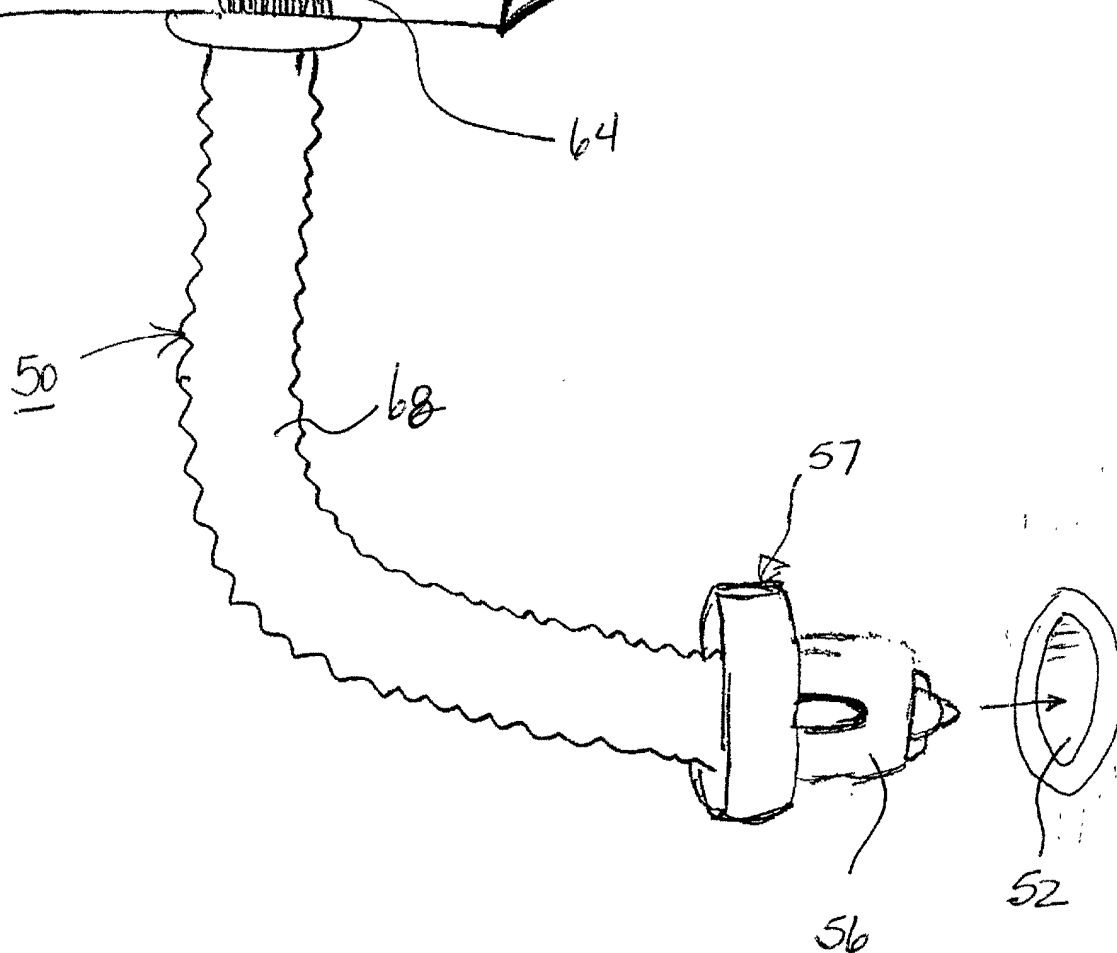


Figure 7



1c929 U.S. PTO
09/710782



	Subclass	ISSUE CLASSIFICATION
	Class	

PATENT NUMBER

U.S. UTILITY Patent Application

O.I.P.E.	PATENT DATE
SCANNED <i>TM¹</i> Q.A. <i>RG</i>	

APPLICATION NO. 09/710782	CONT/PRIOR F	CLASS 607	SUBCLASS <i>088</i>	ART UNIT <i>3742</i>	EXAMINER <i>Robinson</i>
------------------------------	-----------------	--------------	------------------------	----------------------	-----------------------------

APPLICANTS

Larry Pederson
Clayton Coffey
Henry Hudema

TITLE

Light therapy device

96+
3742

PTO-2040
12/89

ISSUING CLASSIFICATION

ORIGINAL		CROSS REFERENCE(S)						
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
INTERNATIONAL CLASSIFICATION								

☐ Continued on Issue Slip Inside File Jacket

☐ TERMINAL DISCLAIMER	DRAWINGS			CLAIMS ALLOWED	
	Sheets Drwg.	Figs. Drwg.	Print Fig.	Total Claims	Print Claim for O.G.
☐ The term of this patent subsequent to _____ (date) has been disclaimed.	(Assistant Examiner) _____ (Date) _____			NOTICE OF ALLOWANCE MAILED	
☐ The term of this patent shall not extend beyond the expiration date of U.S. Patent. No. _____					
☐ The terminal _____ months of this patent have been disclaimed.	(Primary Examiner) _____ (Date) _____			ISSUE FEE	
				Amount Due	Date Paid
	(Legal Instruments Examiner) _____ (Date) _____			ISSUE BATCH NUMBER	

WARNING:

The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code, Title 35, Sections 122, 181 and 368. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.

Form PTO-436A
(Rev. 6/89)

FILED WITH: ☐ DISK (CRF) ☐ FICHE ☐ CD-ROM
(Attached in pocket on right inside flap)



SEARCHED

Class	Sub.	Date	Exmr.
607	88 89 90 91 92 93 94 95		
602	2	1-24-2005 PCA	
	Same as above 11-2-2003		

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
	Same as above	11-24-2000	

SEARCH NOTES (INCLUDING SEARCH STRATEGY)

	Date	Exmr.
Consulted with Linda Dvorak Lee Cohen + Dorinda Bates		
Plus Results Back		

BEST AVAILABLE COPY

ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION			
O.I.P.E. CLASSIFIER			
FORMALITY REVIEW			
RESPONSE FORMALITY REVIEW		7/14/71	2/1

INDEX OF CLAIMS

✓ Rejected N Non-elected
 = ... Allowed I Interference
 - (Through numeral)... Canceled A Appeal
 + ... Restricted O Objected

Claim	Date
Final Original	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

Claim	Date
Final Original	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

Claim	Date
Final Original	
101	
102	
103	
104	
105	
106	
107	
108	
109	
110	
111	
112	
113	
114	
115	
116	
117	
118	
119	
120	
121	
122	
123	
124	
125	
126	
127	
128	
129	
130	
131	
132	
133	
134	
135	
136	
137	
138	
139	
140	
141	
142	
143	
144	
145	
146	
147	
148	
149	
150	

If more than 150 claims or 10 actions
staple additional sheet here

BEST AVAILABLE COPY

11/13/00
JC923 U.S. PTO

BENNETT JONES

The Commissioner of Patents and Trademarks
Washington, D.C. 20231,
U.S.A.

Jc929 U.S. PTO
09/710782
11/13/00

BOX: PATENT APPLICATION

Attorney No.	Docket 44261-4
-----------------	-------------------

Sir:

Transmitted herewith for filing is the patent application of:

Inventors	(1) PEDERSON, Larry V., (2) COFFEY, Clayton G. and (3) HUDEMA, Henry
Title	LIGHT THERAPY DEVICE
Priority	Canadian application 2,300,569, filed March 14, 2000 and Canadian application 2,317,319, filed August 30, 2000

The application comprising:

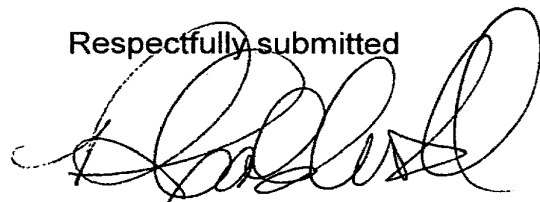
40 pages of Disclosure;
2 pages of Claims;
1 pages of Abstract;
3 sheet(s) of drawings.

and enclosed with the application are:

[☒] A post card.

This patent application is being submitted under **37 CFR 1.53(f)** and **35 U.S.C. 111**, without a Declaration and without the filing fee.

Respectfully submitted



Roseann B. Caldwell
Registration No. 37,077

BENNETT JONES LLP
4500 Bankers Hall East
855 - 2nd Street SW
Calgary, Alberta T2P 4K7
Canada
Telephone: (403) 298-3661
Fax: (403) 265-7219
Encl.

Date: Nov 9, 2000

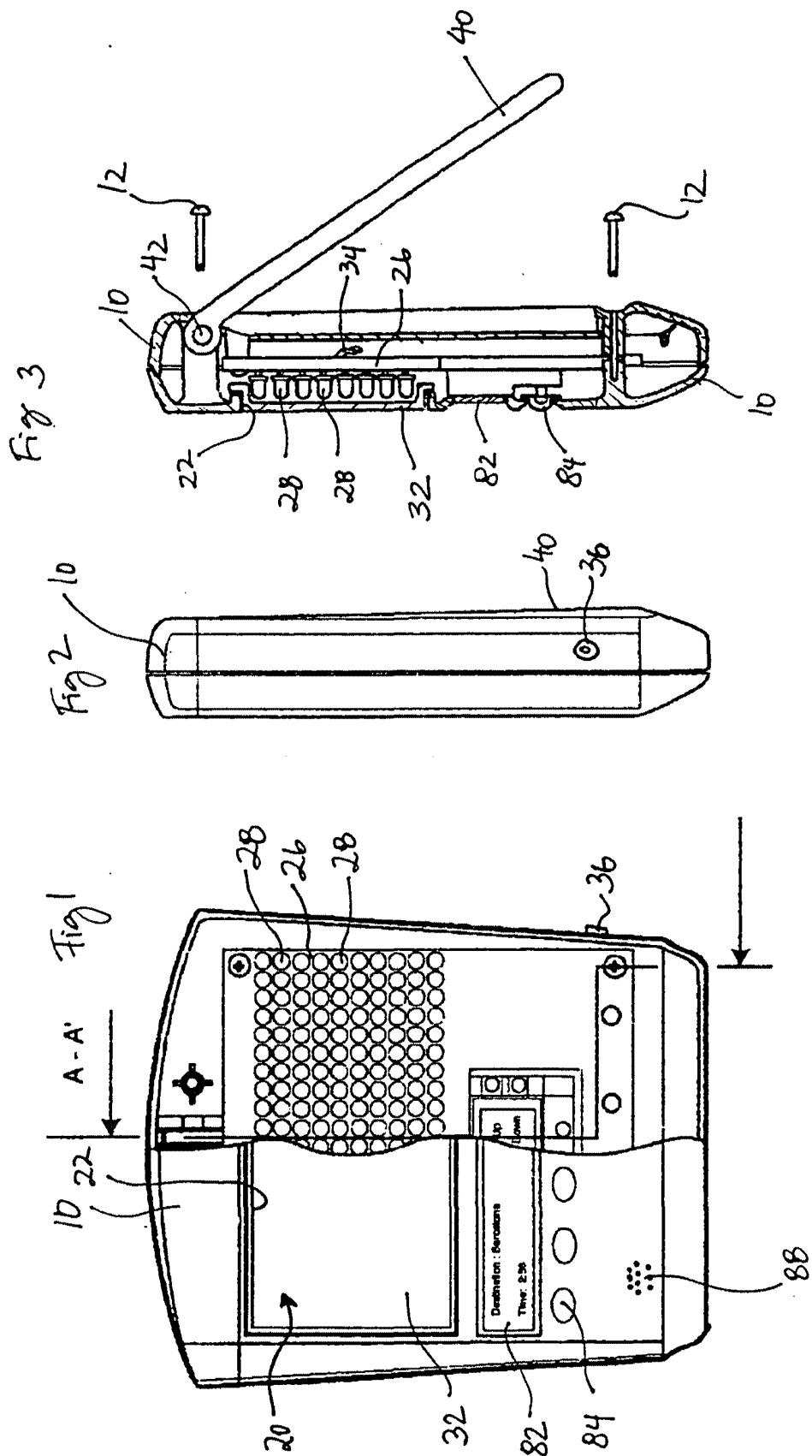


FIGURE 4

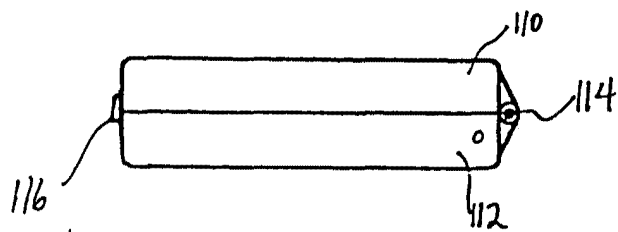


FIGURE 5

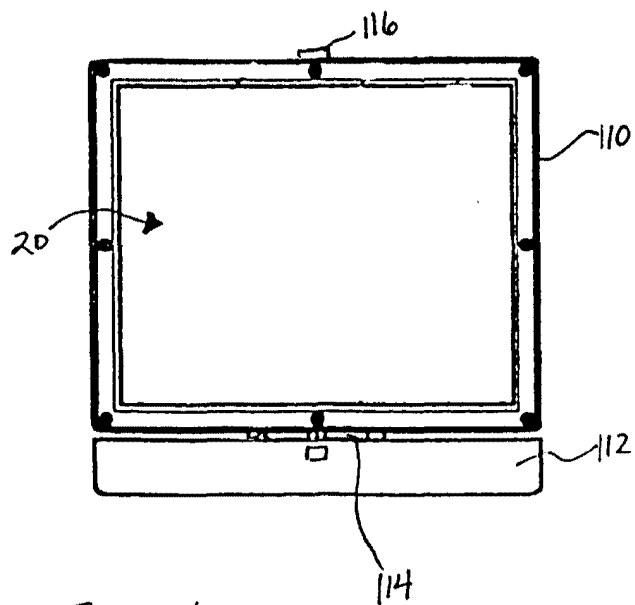
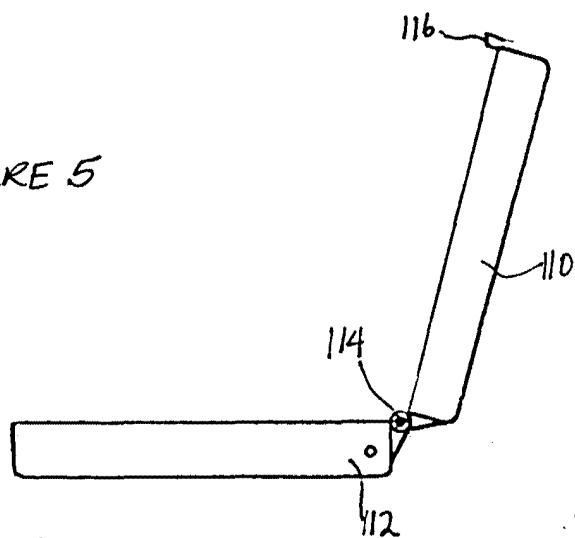


FIGURE 6

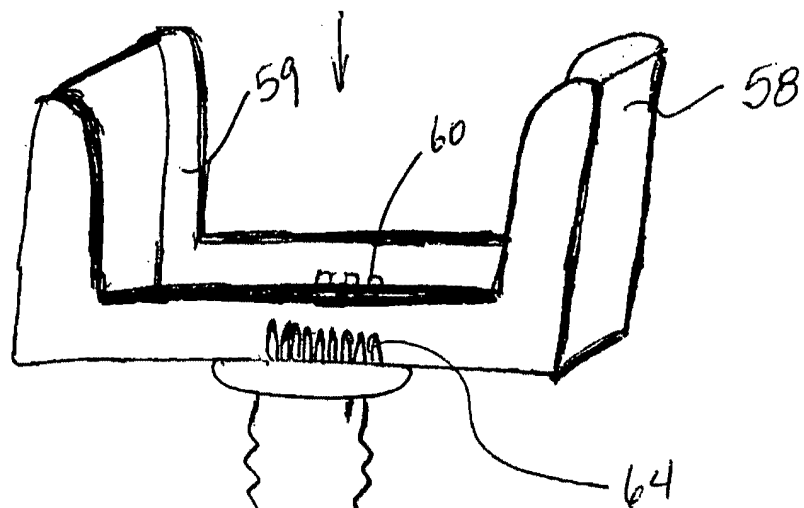
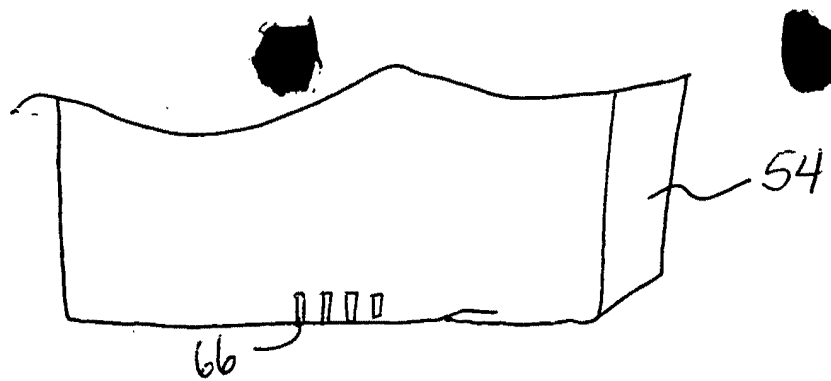
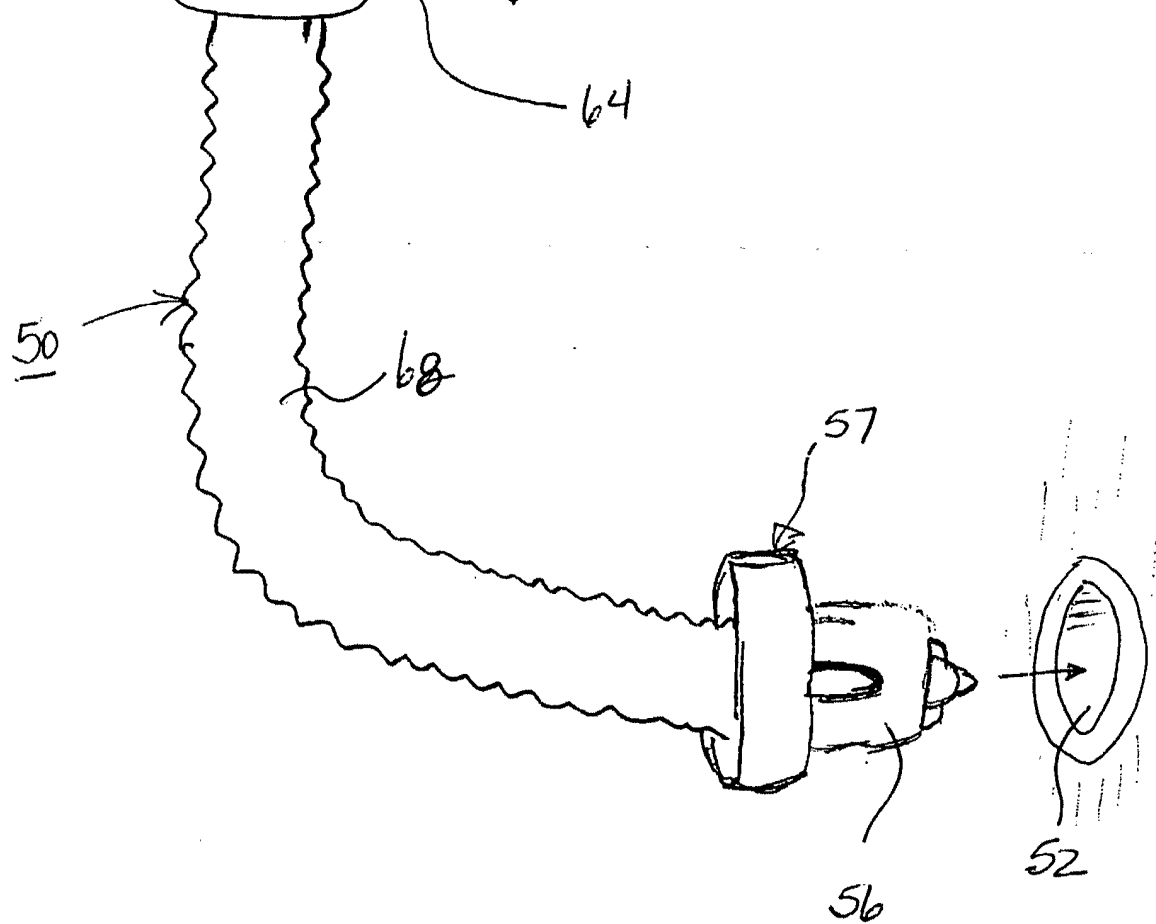


Figure 7



LIGHT THERAPY DEVICE

FIELD OF THE INVENTION

5

The present invention relates to a light therapy device and in particular to a light therapy device for treatment of light deficient disorders.

BACKGROUND OF THE INVENTION

10

There is much support for the use of light therapy to overcome light deficient disorders. It has been proven that treatments involving shining light directly towards a patient's eyes will alleviate or cure light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia.

15

There are two types of light therapy devices presently available. One type of device is large in size and floor or desk mountable. These devices include light sources of fluorescent bulbs. Although they can be moved from one position to another, they are not generally portable. In addition, the light source is quite fragile. The second kind of light therapy devices is head mountable. These devices are formed as eyeglasses or visors. While they are portable, they are not generally accepted by patients for use in public because of their odd appearance when worn on the head. This combined with safety concerns about eye damage given the proximity of the light source to the eye, has resulted in head mountable treatment devices failing to be generally accepted as a light therapy device.

20

25

These devices therefore are of limited use for persons requiring a portable and discreet treatment device. A light therapy device is needed for use by, for example, the business traveler that is portable and aesthetically appealing.

30

SUMMARY OF THE INVENTION

The present invention provides a portable and lightweight hand-held light therapy device. The device is durable, being resistant to damage by normal transport. The device uses light emitting diodes (LEDs) as a source of light. LEDs offer a light source that is lightweight, small in size, simple, durable as well as energy efficient. The device is useful for travel and for in-flight use while being aesthetically acceptable.

10 In accordance with one aspect of the present invention, there is provided a light treatment comprising: an outer housing including a opening; 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.

15 The LEDs include at least some capable of emitting white-light. In one embodiment, the LEDs are arranged in a pattern over an area and the light emitting assembly is selected to emit light from the LEDs along a substantially straight line directly toward the user. Preferably, a diffuser screen of light diffusing sheet material is positioned
20 over the LEDs to provide a more uniform emission of light. While LEDs do not emit any significant amount of ultraviolet radiation, the diffuser sheet material can include a UV filter, if desired.

The outer housing can include a first member and a second member, the first member
25 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. In one embodiment, the first and second members are pivotally connected and openable in a manner similar to a book. The first and second members, when closed enclose an
30 inner compartment accessible by opening the first and second members about their pivotal connection. The light emitting assembly is storable in the inner compartment.

In this embodiment, the light emitting assembly can be mountable on the first member and the second member can act as a base.

To facilitate therapy using the device, the housing can also accommodate a therapy
5 calculator for determining a treatment regime based on an input of information.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a front elevation view of a light therapy device according to the present
10 invention. A portion of the device has been cut away to facilitate illustration of internal components.

Figure 2 is a side elevation view of the light therapy device of Figure 1 with the support leg folded against the housing.

Figure 3 is a sectional view along line A-A of Figure 1.

15 Figure 4 is a side elevation view of another light therapy device according to the present invention in a closed configuration.

Figure 5 is a side elevation view of the device of Figure 4 in an open configuration, ready for use.

Figure 6 is a front elevation of the device and configuration of Figure 5.

20 Figure 7 is an elevation of a device for permitting mounting of a light therapy device in a passenger compartment of a vehicle. The device is aligned for insertion into a power port of a vehicle and a light therapy device is aligned for insertion into the docking bay of the device.

25 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figures 1 to 3, a light therapy device according to one embodiment of the present invention is shown. The device is small in size and resembles a large calculator or hand-held computer. Preferably, the outside dimensions of the device
30 are less than about 7 inches wide, 7 inches high and 1.5 inches deep. The size can be varied as desired and with consideration as to portability, convenience and the components that must be contained therein.

The device includes an outer housing 10. The housing is preferably formed of a durable, impact resistant material such as, for example, a polymer (i.e. nylon, thermoplastic or blends thereof). Preferably, all housing parts are of minimal thickness to provide suitable impact resistance and support for internal components while minimizing the weight of the device. The housing can be formed, as shown, in parts secured together by screws 12 or other fastening means.

The housing carries a light emitting assembly 20. The light emitting assembly is mounted in the housing such that in operation light emitted therefrom is directed out through an opening 22 in the housing.

Light emitting assembly 20 includes a printed circuit (PC) board 26 providing electrical connection for light emitting diodes 28. The LEDs are spaced apart on the board, with consideration as to their light output and wavelength, such that the assembly emits a light of illumination adequate for treatment of light deficient disorders. In particular, the light emitting assembly generates adequate illumination for treatment of light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia, which is between 2,500 and 7,500 lux, and preferably between about 3,500 and 5,500 lux at 12 inches from the assembly. To generate this level of illumination, the assembly generally includes between about 10 and 150 LEDs together having a total light output of between 50 and 500 candelas and preferably about 250 to 450 candelas. The number of LEDs in the light emitting assembly may be reduced considerably as the efficiency of a LED is increased.

Using a light therapy device according to the present invention, treatments of acceptable duration can be administered. As an example, treatments for SAD can be completed in $\frac{1}{4}$ to 4 hours and in most cases, $\frac{1}{2}$ to 3 hours.

30

For bright-light therapy, preferably white LEDs are used. However, it is sometimes useful to combine light of different wavelengths and in some instances to approximate

the spectral properties or distribution of a tropical sunrise. Therefore, LEDs 28 can be entirely of the type emitting white light or, alternatively, LEDs emitting light of various wavelengths (i.e. red or amber) can be used with white light emitting diodes. The light generated by the light emitting assembly is preferably constant, though it
5 may also be pulsed.

In one embodiment, a diffuser screen 32 is mounted over the diodes to create a more uniform, less harsh light emission. Preferably, LEDs 28 are mounted a suitable distance from diffuser screen 32 such that the light emitted by each LED overlaps on
10 the screen and avoids the appearance of individual points of light behind the screen. If a diffuser screen is used, it is necessary to ensure that adequate levels of light, as set out above, are passed therethrough to permit treatment.

Power is supplied to the LEDs through electrical lines 34. Power can be provided
15 through batteries or preferably, to reduce weight, through a jack 36 for connection to a 120v electrical supply (for use in North America). The device preferably operates using DC power and is supplied with an external AC-DC converter. Since the device is particularly useful during long distance travel in the treatment of jet lag, an adapter can be provided within the device or separately for device compatibility with foreign
20 voltages of AC power or with DC power, as is provided through power ports mounted in aircraft armrests.

To facilitate light treatment, a support leg 40 can be provided for supporting the housing in a propped position such that light is emitted in a generally horizontal
25 direction. In one embodiment, support leg 40 is connected by a hinge 42 to the rear of the housing such that the leg can be rotated between a supporting position and a stored position against the rear of the housing. A more complex stand for elevating the light illuminating assembly can be used, as desired.

30 The light treatment device can be mounted in a vehicle passenger compartment including, for example, a passenger or operator seat area. The vehicle can be, for example, an aircraft, a train, a bus, a truck or an automobile. In one embodiment, the

light treatment device is mounted in an aircraft seat back or in an aircraft seat armrest for use by air travelers. The device can be mounted in a manner similar to aircraft telephones, individual video monitors, and other such devices, wherein the light treatment device is attached to an adjustable extension arm, thereby enabling the user to remove the light treatment device from an armrest and position it appropriately for treatment. Alternately, the light treatment device may be temporarily removed from its seat back mounting position and positioned on a tray table or other surface for treatment, while remaining secured to the seat back by means of a cable that could also serve as a power source. The device may also be mounted into an airliner flight deck or other such areas of an airliner to provide discreet and convenient light treatments for pilots, flight attendants and other such on-board crew affected by jet lag and fatigue.

In another embodiment, the light treatment device can be mounted in the passenger compartments of vehicles, for example, automobiles, transport trucks, buses, trains, and other such vehicles, wherein the device is stored when not in use but readily available to provide a light therapy treatment. In the case of automobiles and trucks, the device may be mounted on the underside of a sun visor, or within the glove compartment, or under the vehicle's dashboard. In the latter two examples, the device can be attached to an adjustable extension arm in order to permit proper positioning for treatment.

The device may also be mounted so as to provide a light treatment for the driver or operator of these vehicles, with appropriate precautions being indicated for safe operation of the vehicle, for example, at those times when the vehicle is parked or idle. One such embodiment is described hereinafter with reference to Figure 7.

Housing 10 can also be formed to accommodate other electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. The housing can also include a cover or a case. Referring to Figures 4 to 6, a light therapy device according to another embodiment of the present invention is shown. The device has an outer housing including an upper housing member 110 and a lower housing

member 112. The housing members are connected by a hinge 114 that permits them to pivot relative to each other between a closed position shown in Figure 4 and an open position shown in Figures 5 and 6. When in the closed position, the housing members can be releasably locked together by a catch 116. The device is small in size and, when closed, resembles a portable compact disc player or a make-up compact.

The housing encloses a light emitting assembly 20. In the illustrated embodiment, light-emitting assembly 20 is mounted in the upper housing member. The light emitting assembly is mounted on the inwardly facing portion of the upper housing member so that, when the device is in the closed position, assembly 20 is protected within the housing members. In this way, the light emitting assembly, which is more fragile than the housing, is protected against damage during transport.

The device is opened for use to administer a light treatment. In a preferred embodiment, upper housing member 110 unfolds from the closed position by rotating about hinge 114. Lower housing member 112 acts as a base for supporting the light emitting assembly. Preferably, hinge 114 is of the type that permits self-locking in at least a few rotational orientations. The use of such a hinge permits that, for example, upper housing member can be oriented to direct the light downwardly, horizontally or, if preferred, in other directions. This is useful as it may be necessary, depending on the treatment, to have the light directed into the patient's eyes or alternately downwardly toward a workspace.

Counterweights (not shown) can be mounted in the lower housing member to prevent the device from tipping. Member 112 can also be formed to accommodate electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. Member 112 can also accommodate a treatment calculator, as will be described hereinbelow.

30

In one embodiment illustrated, for example in Figures 1 to 3, housing 10 also accommodates a calculator including a display 82, a key pad 84 and a processor

mounted within housing 10. The calculator is programmed to calculate a light treatment regime based on input of information. The calculator processor uses calculation references such as that known as the Jet Lag Calculator™ available from Bio-Brite, Inc., Maryland. In one embodiment, the calculator can be used to calculate

5 light treatment regimes for jet lag based on inputs of information, as follows:

Option 1

- i. Number of time zones crossed during trip
- ii. Direction of time zones crossed (East or West)
- 10 iii. Normal wake-up time of patient (for establishing the patient's "body clock")

Option 2

- i. Departure city
- 15 ii. Arrival city
- iii. Normal wake-up time of patient

Based on the input of the above-noted information, the calculator will then calculate and display a treatment regime including, for example, a period of light exposure and

20 a period of light avoidance. In option 2, the calculator determines the number of time zones through which travel will occur and uses this to calculate treatment regime. The calculator in one embodiment calculates a two-day treatment regime.

In one embodiment, the calculator keypad includes keys to be depressed when

25 inputting particular information. As an example, the keypad can include keys such as: "departure city", "destination city" and "wake up time". The calculator can be adapted to prompt the patient such as by displaying questions requesting the appropriate information. Preferably, the calculator includes a pause function capable of recording a time of treatment interruption and capable of outputting from memory

30 the portion of the treatment remaining when treatment is resumed.

In addition or alternately, the calculator can be programmed for calculation of other treatment regimes such as, for example, for treatments to alleviate fatigue in shift workers. Treatments for shift workers may include inputs such as work shift start time, previous shift time and normal waking time.

5

A speaker 88 is preferably provided for communication to the user. As an example, the speaker can communicate with the calculator processor to audibly prompt a user to input information. In addition, the speaker can function to emit an audible signal, such as an alarm, to alert a user to commence or modify a treatment. In one
10 embodiment, the calculator processor controls a switch for the light emitting assembly such that it is turned on or off in response to a signal from the processor.

In a preferred embodiment, the calculator memory is capable of storing previous treatment regimes. These stored treatment regimes can be recalled from processor
15 memory for repeat trips or shift work schedules.

If desired, to enhance the usefulness of the device, the calculator can also be programmed with other information including a clock, a standard mathematical calculator or other information such as an address book, etc.
20

As noted hereinbefore, a light therapy device according to the present invention can be mounted in a vehicle for use by passengers. One such embodiment is illustrated in Figure 7. A vehicle mounting adaptor 50 useful for mounting a light treatment device in a vehicle passenger compartment acts as an interface between the vehicle power
25 port 52 (i.e. an in-dash cigarette lighter) and the light treatment device 54. In particular, at one end the adaptor has a power port contactor 56 for insertion into the power port. A locking collar 57 is threadedly engaged at the outboard end of the contactor 56. Once power port contactor 56 is inserted into power port 52, locking collar 57 can be tightened down about the port by threaded advancement to reinforce
30 the engagement between port 52 and power port contactor 56.

At the opposite end, the adapter includes a docking port 58 with a recess 59 having therein electrical contactors 60. The light treatment device is mountable in the recess of docking port 58 in electrical communication with contactors 60. Venting slots 64 are formed through the docking port and positioned to substantially align with the
5 vents 66 on light treatment device 54 to provide ventilation to the light treatment device therethrough.

Power cables (cannot be seen) extend between ends 56 and 58 to provide electrical communication therebetween. The power cables are housed within a bendable arm 68
10 of the type including a corrugated tube and internal supports that can be bent into various orientations and, once positioned, will hold fast in that orientation. Arm 68 is bendable yet rigid enough to hold the weight of the light treatment device 54 and docking port 58 without moving out of the bended configuration into which it has been adjusted. Locking collar 57 also securely holds power port contactor 56 in
15 power port 52 even against the weight of the light treatment device and against the stress of bending arm 68. Adapter 50 can be removed from power port 54 and stored when not required.

Numerous modifications, variations and adaptations may be made to the particular
20 embodiments of the invention described above without departing from the scope of the invention as defined in the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A light therapy device comprising:
 an outer housing including an opening;
 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.
- 10 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
15 sheet material is positioned over the LEDs.
4. The light therapy device of claim 1 wherein the housing accommodates a
 therapy calculator for determining a treatment regime based on an input of
 information.
- 20 5. The light therapy device of claim 1 wherein the housing includes 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
25 acts as a base to support the light emitting assembly.
6. The light therapy device of claim 5 wherein the first and second members are
 pivotally connected.
7. The light therapy device of claim 6 wherein the light emitting assembly is
30 mounted onto the first member and the second member forms a base for
 support of the first member.

- 5

[illegible]

ABSTRACT OF THE INVENTION

A light therapy device is taught including a light emitting assembly having light emitting diodes (LEDs) as a light source. The light emitting assembly capable of
5 generating 2,500 lux to 7,500 lux at 12 inches.

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2000

Application or Docket Number

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	8 minus 20 =	*
INDEPENDENT CLAIMS	9 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* 36	Minus	** 20	= 16
	Independent	* 5	Minus	*** 3	= 2
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	355.00
X\$ 9=	
X40=	
+135=	
TOTAL	

RATE	FEE
BASIC FEE	710.00
X\$18=	
X80=	
+270=	
TOTAL	

SMALL ENTITY

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
X\$ 9=	144
X40=	84
+135=	
TOTAL ADDIT. FEE	228

RATE	ADDITIONAL FEE
X\$18=	
X80=	804
+270=	
TOTAL ADDIT. FEE	

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL ADDIT. FEE	

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). The first artifact folder for an artifact type receives the letter A, the second B, etc..

Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

09/710782ZA

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

☐

CD(s) containing:

computer program listing

Doc Code: Computer

pages of specification

and/or sequence listing

and/or table

Doc Code: Artifact

content unspecified or combined

Doc Code: Artifact

☐

Artifact Type Code: P

☐

Artifact Type Code: S

☐

Artifact Type Code: U

☐

Stapled Set(s) Color Documents or B/W Photographs

Doc Code: Artifact Artifact Type Code: C

☐

Microfilm(s)

Doc Code: Artifact Artifact Type Code: F

☐

Video tape(s)

Doc Code: Artifact Artifact Type Code: V

☐

Model(s)

Doc Code: Artifact Artifact Type Code: M

☐

Bound Document(s)

Doc Code: Artifact Artifact Type Code: B

☐

Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.

Doc Code: Artifact Artifact Type Code X

☐

Other, description:

Floppy Disk

Doc Code: Artifact Artifact Type Code: Z



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/710,782	11/13/2000	Larry V. Pederson	44261-4

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

FORMALITIES LETTER



OC000000005725821

Date Mailed: 02/01/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

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

- The statutory basic filing fee is missing.
Applicant must submit \$ 710 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 840.

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: PEDERSON, Larry V. et al. Group Art Unit: 3737
Serial No.: 09/710,782 Examiner: not known
Filed: November 13, 2000
For: "LIGHT THERAPY DEVICE"



Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

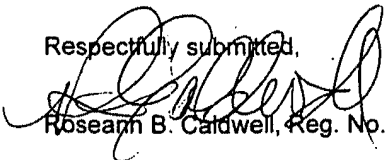
**RESPONSE TO NOTICE OF MISSING REQUIREMENTS UNDER
35 USC 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE**

In response to the NOTICE OF MISSING REQUIREMENTS UNDER
35 USC 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE dated
February 1, 2001, please find enclosed:

1. A copy of the Notice dated February 1, 2001.
2. A Combined Declaration and Power of Attorney in compliance with 37 CFR 1.63 properly signed by the inventors and identifying the application by the Application Number and Filing Date.
3. An Assignment which evidences the transfer of rights in this application from the Inventors to the LITEBOOK COMPANY LTD.
4. An Information Disclosure Statement with a copy of each listed document.
5. The bank draft of Bennett Jones LLP containing FOUR HUNDRED AND SIXTY DOLLARS (\$460.00) for payment of the small entity filing fee, the surcharge fee and the assignment fee. The Commissioner of Patents is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-2057. Two copies of this form are enclosed for use in connection with deposit account activity.

Favorable consideration is respectfully requested.

Respectfully submitted,


Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 Bankers Hall East
855 - 2nd Street SW
Calgary, Alberta
CANADA T2P 4K7 (403) 298-3661

Date: March 12/01



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/710,782	11/13/2000	Larry V. Pederson	44261-4

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA



FORMALITIES LETTER



OC000000005725821

Date Mailed: 02/01/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

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

- The statutory basic filing fee is missing.
Applicant must submit \$ 710 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- The balance due by applicant is \$ 840.

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center
Initial Patent Examination Division (703) 308-1202

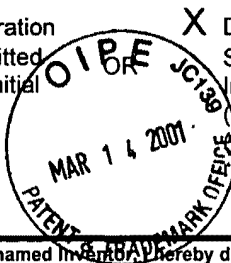
PART 2 - COPY TO BE RETURNED WITH RESPONSE

03/15/2001 SSESHE1 00000053 09710782
01 FC:201
02 FC:205
355.00 OP
65.00 OP

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

☐ Declaration Submitted with Initial Filing

☒ Declaration Submitted after Initial Filing (surcharge required) (37 CFR 1.16 (e))



Attorney Docket Number	44261-4
First Named Inventor	PEDERSON, Larry V.
COMPLETE IF KNOWN	
Application Number	09 / 710,782
Filing Date	November 13, 2000
Group Art Unit	Not known
Examiner Name	Not known

As a below named inventor, I hereby declare that:

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

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"LIGHT THERAPY DEVICE"

the specification of which
☐ is attached hereto
OR

(Title of the Invention)

☒ was filed on

November 13, 2000

as United States Application Number or PCT International

Application Number 09/710,782 and was amended on (MM/DD/YYYY) (If applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

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

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365 (b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
2,300,569 2,317,319	CANADA CANADA	March 14, 2000 August 30, 2000	☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

DECLARATION – Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application(s) are listed on a supplemental priority data sheet PTO/SB/02B attached

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

☐ Customer Number OR ☒ Registered Practitioner(s) name/registration number listed below

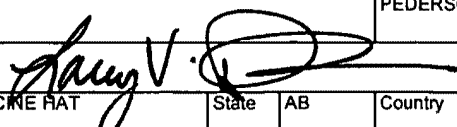
Name	Registration Number	Name	Registration Number
ROSEANN B. CALDWELL	37,077		
JEFFREY T. DAINES	41,540		
EDWARD YOO	41,435		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number or Bar Code Label OR ☒ Correspondence address below

Name	Ms. Roseann B. Caldwell				
Address	BENNETT JONES LLP				
Address	4500, 855 - 2nd STREET S.W.				
City	CALGARY	State	AB	Zip	T2P 4K7
County	CANADA	Telephone	(403) 298-3661	Fax	(403) 269-7219

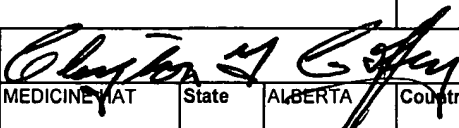
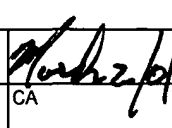
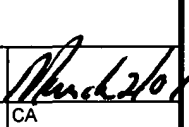
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statement may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:		☐ A petition has been filed for this unsigned inventor			
Given Name (first and middle (if any))			Family Name or Surname		
LARRY V.			PEDERSON		
Inventor's Signature					Date
					02 MAR 01
Residence: City	MEDICINE HAT	State	AB	Country	CANADA
				Citizenship	CA
Post Office Address	Suite 107, 233 - 5th Street SE				
Post Office Address					
City	Medicine Hat	State	AB	Zip	T1A 0M5
				Country	CANADA

☒ Additional inventors are being named on the _1_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto,

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page 1 of 1

Name of Additional Joint Inventor, if Any:					☐ A petition has been filed for this unsigned inventor				
Given Name (first and middle [if any])					Family Name or Surname				
CLAYTON G.					COFFEY				
Inventor's Signature					Date				
Residence: City	MEDICINE HAT	State	ALBERTA	Country	CANADA	Citizenship	CA		
Post Office Address	Suite 107, 233 - 5 th Street SE								
Post Office Address									
City	Medicine Hat	State	Alberta	Zip	T1A 0M5	Country	CANADA		
Name of Additional Joint Inventor, if Any:					☐ A petition has been filed for this unsigned inventor				
Given Name (first and middle [if any])					Family Name or Surname				
HENRY					HUDEMA				
Inventor's Signature					Date				
Residence: City	MEDICINE HAT	State	ALBERTA	Country	CANADA	Citizenship	CA		
Post Office Address	Suite 107, 233 - 5 th Street SE								
Post Office Address									
City	Medicine Hat	State	Alberta	ZIP	T1A 0M5	Country	CANADA		
Name of Additional Joint Inventor, if Any:					☐ A petition has been filed for this unsigned inventor				
Given Name (first and middle [if any])					Family Name or Surname				
Inventor's Signature					Date				
Residence: City		State		Country		Citizenship			
Post Office Address									
Post Office Address									
City		State		Zip		Country			

4 Lofan/C
18-01
#4/IDS

Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

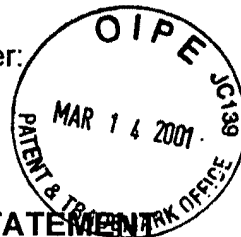
Applicant: PEDERSON, Larry V. et al.

Group Art Unit:

Serial No.: 09/710,782

Examiner:

For: LIGHT THERAPY DEVICE



INFORMATION DISCLOSURE STATEMENT

- ☒ [XX]1 Pursuant to 37 CFR 1.97(b)
[within 3 months of filing or prior to 1st Office Action]
- ☐ [2] Certification Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☐ [3] Fee Payment Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☐ [4] Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d)
[before issue fee payment]

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

The following are submitted in the above-identified application in compliance with
37 CFR 1.97 & 1.98:

- ☒ ~~5~~ A list of documents on form PTO-1449 together with copies of each
identified document and a translation or a concise

explanation of each non-English language document is enclosed herewith.

This paper is submitted in accordance with:

[XX]6 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]

[]7 37 CFR 1.97(c): [before Final Office Action or Allowance, whichever is earlier]; and

[]8 The required certification made in item 11 below; or

[]9 The \$210.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement is authorized in item 14 below.

[]10 37 CFR §1.97(d): [before issue fee payment]; and

(a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$130.00) required by 37 CFR 1.17(i)(1) is authorized in item 14 below. (Direct this letter to: "Attention PETITIONS EXAMINER" and if applicable include batch locator information: e.g. "Allowed Files, Batch _____, Date of Allowance _____"); and

(b) The required Certification is stated in item 11 below.

[XX]11 Certification

[]12 Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or

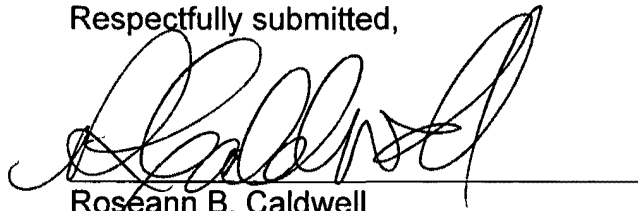
[]13 No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the

knowledge of the person signing this document after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.

[XX]14

Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. 02-2057. An original and two (2) copies of this document are enclosed.

Respectfully submitted,



Roseann B. Caldwell
Reg. No. 37,077

Bennett Jones LLP
Suite 4500
855 - 2nd Street S.W.
Calgary, Alberta
CANADA T2P 4K7

(403) 298-3661

Date: March 12/01



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

7590 02/03/2003

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 02/03/2003

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

Office Action Summary

Application No.

09/710,782

Applicant(s)

PEDERSON ET AL.

Examiner

Daniel I. Robinson

Art Unit

3742

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al.(U.S.Pat.6,350,275) in view of the admitted prior art of Lam (A summary of Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder). Vreman discloses a device for treating circadian rhythm disorders using LEDS that shows many of the features of the claimed invention but does not explicitly claim 2500-7500 LUX. The admitted prior art shows explicitly (page 10 Recommendations) that light intensities greater than 2500 LUX is preferred to treat seasonal disorder.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of the prior art as applied to claims 1-3 above, and further in view of the additional admitted prior art from Daylight Technologies. Vreman in view of the admitted prior art ie. Canadian Guidelines does not show a calculator to modulate light exposure. Daylight Technologies shows a calculator (col. 9)to modulate light exposure. It would have been obvious to one of ordinary skill in the art of to use a calculator as taught by Daylight Technologies so as to prevent Jet Lag.

Art Unit: 3742

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of Canadian Guidelines as applied to claims 1-3 above, and further in view of Whitaker(U.S.Pat.5,197,941). Vreman in view of Canadian Guidelines does not show a first and second parts pivotally connected. Whitaker discloses a portable device for controlling circadian rhythm disorders. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a housing as taught by Whitaker with the device of Vreman in view of Canadian Guidelines because the lid 27 forms a reflective surface.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of Canadian Guidelines as applied to claims 1-3 above and further in view of Gerdt(U.S.Pat.6,235,046). Vreman in view of Canadian Guidelines does not show a car driver using a light emitting device. Gerdt discloses a light source that shows a driver using the device. It would have been obvious to one of ordinary skill in the art to provide a light source to a driver because the device suppresses melatonin and therefore tiredness.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hyman, Hughes, Zarate, Kittelsen, Seki, Campbell, Jalliet, '977, and Hughes'217 are cited to show structure similar to the claimed invention.

Art Unit: 3742

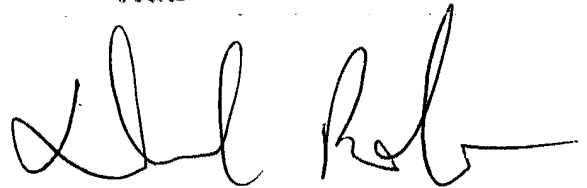
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel I. Robinson whose telephone number is 703 306-9043. The examiner can normally be reached on M-F 5:30am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on 703 308-1327. The fax phone numbers for the organization where this application or proceeding is assigned are 872-9302 for regular communications and 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0861.

dlr
January 30, 2003

DANIEL ROBINSON
PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'D. I. Robinson', written over the printed name and title.

Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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

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

Substitute for form 1449B/PTO		Compl to if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/710,782
		Filing Date	November 13, 2000
		First Named Inventor	Pedersen, Larry V.
		Group Art Unit	3737
		Examiner Name	Unknown
Sheet 2 of 2	Attorney Docket Number	44261-4	



OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
PLA		Morning StarLight Light Therapy System for Seasonal Affective Disorder, SAD, Meditation, Relaxation	
		Bio Brite, Inc., The Practical method to Prevent Jet Lag Based On Breakthrough Research, Jet Lag Calculator	
		CHARLOTTE E. REMÉ ET AL., Bright Light Therapy in Focus: Lamp Emission Spectra and Ocular Safety, 1996, Technology and Health Care 4 (1996) 403-413 IOS Press	
		RAYMOND W. LAM and ANTHONY J. LEVITT, Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder: A Summary of the Report of the Canadian Consensus Group on SAD.	
		DayLight Technologies Inc., UP LIFT Day-Light - Brighten your Day ... UP LIFT your Workspace	
		DR. IRV HECKER, DR. GORDON WALLACE, KIRK RENAUD, DR. MARTIN MOORE-EDD, Preventing Jet Lag, The Practical Anti-Jet Lag Program, Based On Breakthrough Bright Light Research, Bio Brite, Inc. 1995	
		LIGHT: An Essential Part of your Life, DayLight Technologies, Inc.	
		Light Therapy Products, Products: Lamps - Light Therapy Products	
		Info on SAD, Body Clock, Jetlag, Winter Depression and Light, Outside In Home Page	
		The SAE LITE, Northern Lights Technologies	
PLA		Information on (sub-) Seasonal affective Disorder and Bright Light, Phillips	

Examiner Signature		Date Considered	12-24-2003
--------------------	--	-----------------	------------

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

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Notice of References Cited

Application/Control No.

09/710,782

Applicant(s)/Patent Under
Reexamination
PEDERSON ET AL.

Examiner

Daniel I. Robinson

Art Unit

3742

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,235,046	05-2001	Gerd, David W.	607/88
	B	US-5,197,941	03-1993	Whitaker, Barbara	600/27
	C	US-6,350,275	02-2002	Vreman et al.	607/88
	D	US-5,149,184	09-1992	Hughes et al.	362/1
	E	US-6,488,698	12-2002	Hyman, Henry H.	607/91
	F	US-5,782,895	07-1998	Zarate et al.	607/88
	G	US-5,879,155	03-1999	Kittelsen, Jon D.	433/6
	H	US-6,164,787	12-2000	Seki et al.	362/1
	I	US-6,135,117	10-2000	Campbell et al.	128/898
	J	US-6,299,632	10-2001	Jaillet, Peter	607/88
	K	US-6,443,977	09-2002	Jaillet, Peter D.	607/88
	L	US-5,919,217	07-1999	Hughes, Philip C.	607/90
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

RECEIVED

JUL 10 2003

TECHNOLOGY CENTER R3700

Sir:

RESPONSE

In response to the office action dated February 3, 2002, Applicant wishes to amend the application and submit remarks. This response has been prepared in accordance with the notice dated February 13, 2003 and entitled "Amendments may now be submitted in revised format".

*Copies
of # 7*

07/08/2003 DENMANU1 00000003 022057 09710782

01 FC:2201 84.00 DA
02 FC:2202 144.00 DA

In the Claims:

Amend claims 1. Add new claims 9 to 36.

1. (Original) A light therapy device comprising:

an outer housing including an opening;
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.
2. (Original) The light therapy device of claim 1 wherein at least some of the LEDs are capable of emitting white-light.
3. (Original) The light therapy device of claim 1 wherein a diffuser screen of light diffusing sheet material is positioned over the LEDs.
4. (Amended) The light therapy device of claim 1 wherein the housing accommodates a therapy calculator [for determining] programmed to calculate a treatment regime based on an input of information.
5. (Original) The light therapy device of claim 1 wherein the housing includes 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.
6. (Original) The light therapy device of claim 5 wherein the first and second members are pivotally connected.

7. (Original) The light therapy device of claim 6 wherein the light emitting assembly is mounted onto the first member and the second member forms a base for support of the first member.
8. (Original) The light therapy device of claim 1 wherein the housing is mounted into a vehicle passenger compartment so as to provide light treatment to vehicle passengers or operators.
9. (New) The light therapy device of claim 8 wherein the vehicle passenger compartment is in a vehicle selected from the group consisting of a plane, an automobile, a transport truck, a bus and a plane.
10. (New) The light therapy device of claim 1 further comprising an adapter mountable on a support and formed to accept the device.
11. (New) The light therapy device of claim 10 wherein the adapter further comprises an adjustable arm.
12. (New) The light therapy device of claim 10 wherein the adapter further comprises electrical contactors for electrical communication to the device and to a power source in the support.
13. (New) 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.
14. (New) The light therapy device of claim 4 wherein the therapy calculator calculates a treatment regime based on an input of (i) a number of time zones crossed, (ii) a direction of travel and (iii) a normal wake-up time of the patient.
15. (New) The light therapy device of claim 4 wherein the therapy calculator is programmed to determine the number of time zones through which travel will occur and a treatment regime based on an input of (i) a departure city, (ii) an arrival city and (iii) a normal wake-up time of the patient.

16. (New) The light therapy device of claim 4 wherein the therapy calculator is programmed to prompt a user for an input of information.
17. (New) The light therapy device of claim 4 wherein the therapy calculator includes a pause feature for recording a time of treatment interruption and capable of outputting from memory the portion of treatment remaining when treatment is resumed.
18. (New) The light therapy device of claim 4 wherein the therapy calculator includes a memory capable of storing and recalling a previous treatment regime.
19. (New) An ocular light therapy device comprising:

an outer housing including an opening;

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.
20. (New) The light therapy device of claim 19 wherein at least some of the LEDs are capable of emitting white-light.
21. (New) A light therapy device comprising:

an outer housing including an opening, the housing including a base for supporting the housing in a therapy position on a support surface;

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.
22. (New) The light therapy device of claim 21 further comprising a support leg for supporting the housing in propped position for light therapy.

23. (New) The light therapy device of claim 22 wherein the support leg is pivotally connected to the housing and rotatable between a supporting position and a stored position.
24. (New) The light therapy device of claim 21 further comprising a mounting adapter and wherein the base is selected to fit into and be engaged by the mounting adapter.
25. (New) The light therapy device of claim 21 wherein the housing further comprises an upper member pivotally connected to the base, the light emitting assembly being mounted in the upper member.
26. (New) A light therapy device comprising:
- 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;
- an opening in the inner facing surface of the upper member; and
- 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.
27. (New) The light therapy device of claim 26 wherein the light emitting assembly includes at least some white light LEDs.
28. (New) An ocular light therapy device comprising:
- an outer housing including an opening, the housing including a base for supporting the housing in a treatment position on a support surface;

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 white light emitting LEDs.

29. (New) The light therapy device of claim 28 wherein the plurality of LEDs is capable of generating an output of light suitable for ocular light therapy.
30. (New) The light therapy device of claim 28 wherein the plurality of LEDs is capable of generating 2,500 lux to 7,500 lux at 12 inches.
31. (New) The light therapy device of claim 28 wherein the plurality of LEDs has a total output of light of between 50 and 500 candelas.
32. (New) The light therapy device of claim 28 further comprising a mounting adapter and wherein the base is selected to fit into and be engaged by the mounting adapter.
33. (New) The light therapy device of claim 32 wherein the adapter further comprises an adjustable arm.
34. (New) The light therapy device of claim 32 wherein the adapter further comprises electrical contactors for electrical communication to the device and to a power source in the support.
35. (New) The light therapy device of claim 32 further comprising a support leg for supporting the housing in propped position on the base.
36. (New) The light therapy device of claim 35 wherein the support leg is pivotally connected to the housing and rotatable between a supporting position and a stored position.

In the Drawings:

Cancel the drawings presently on file and substitute therefore the enclosed formal drawings.

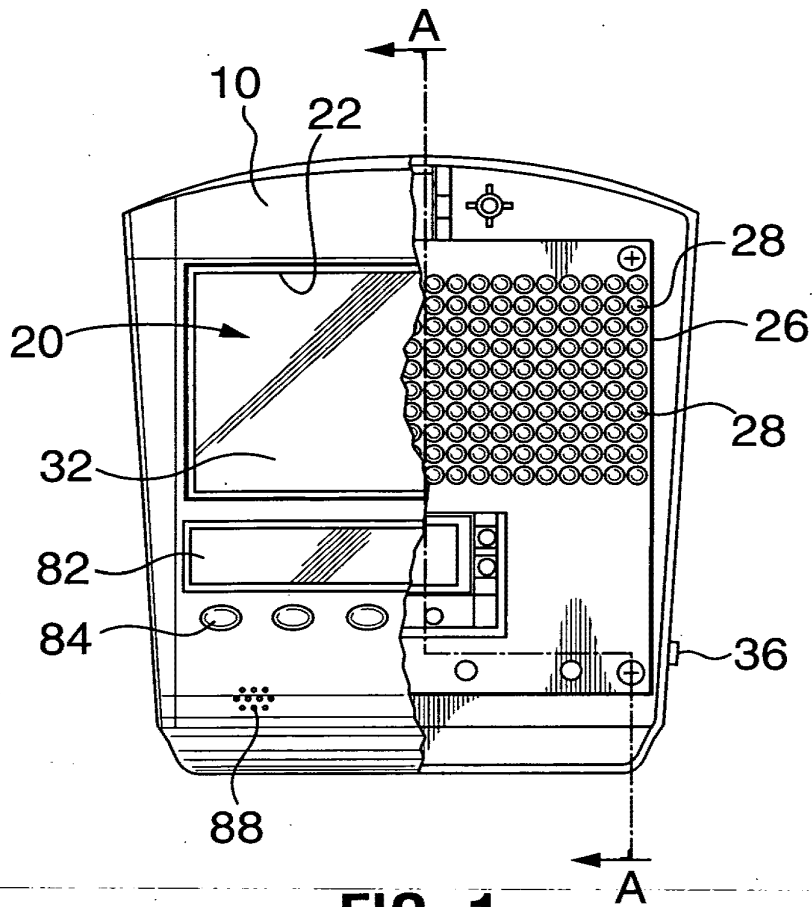


FIG. 1

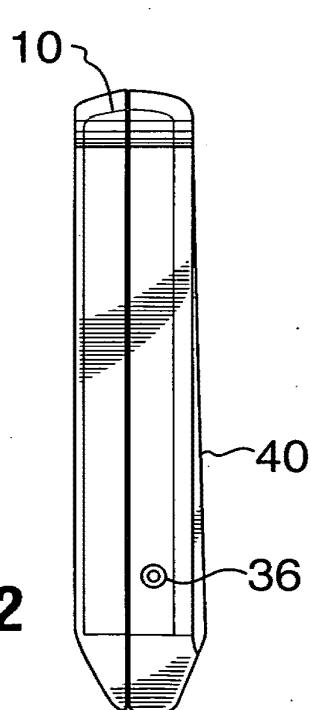


FIG. 2

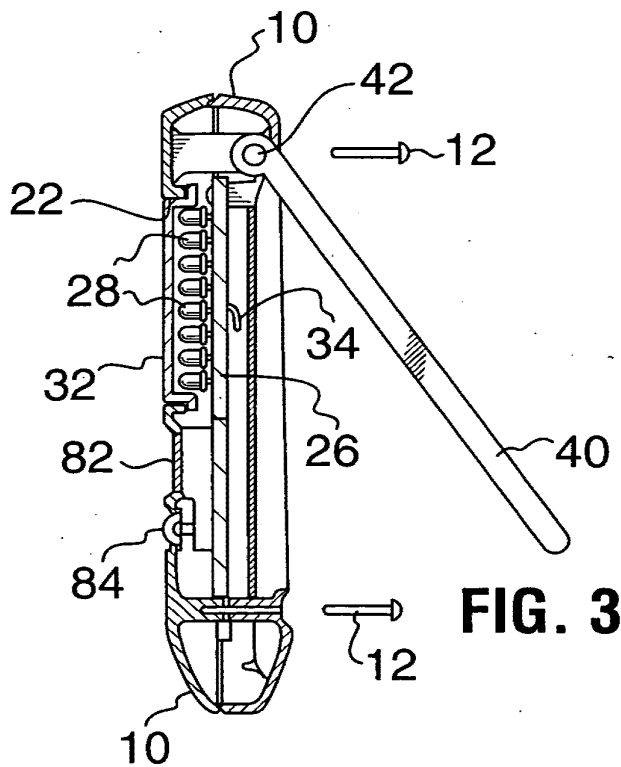
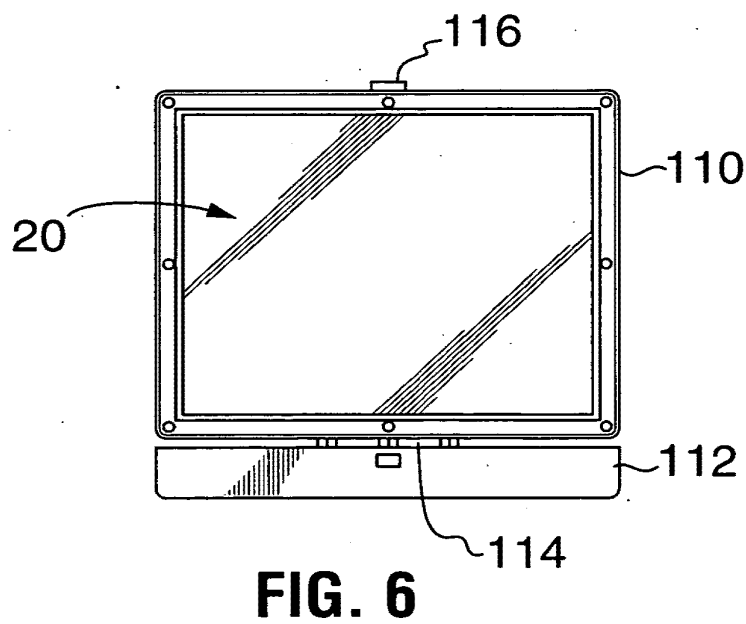
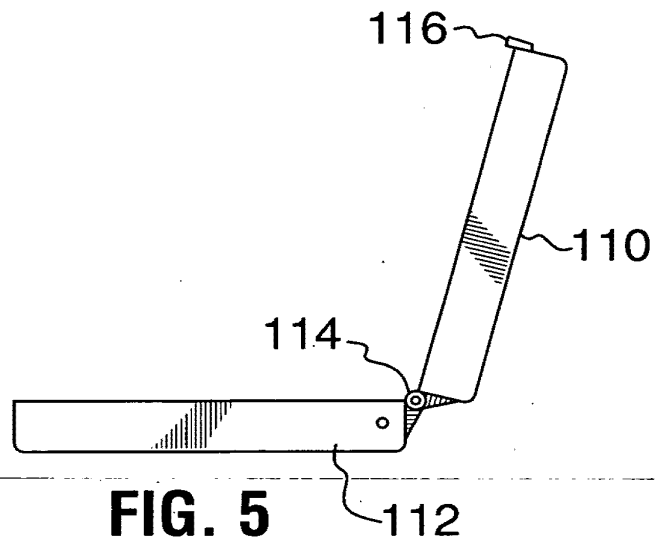
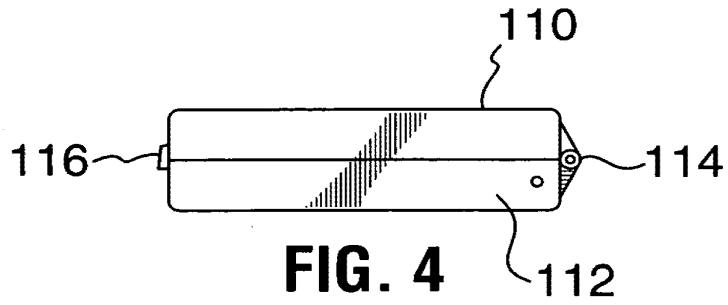


FIG. 3



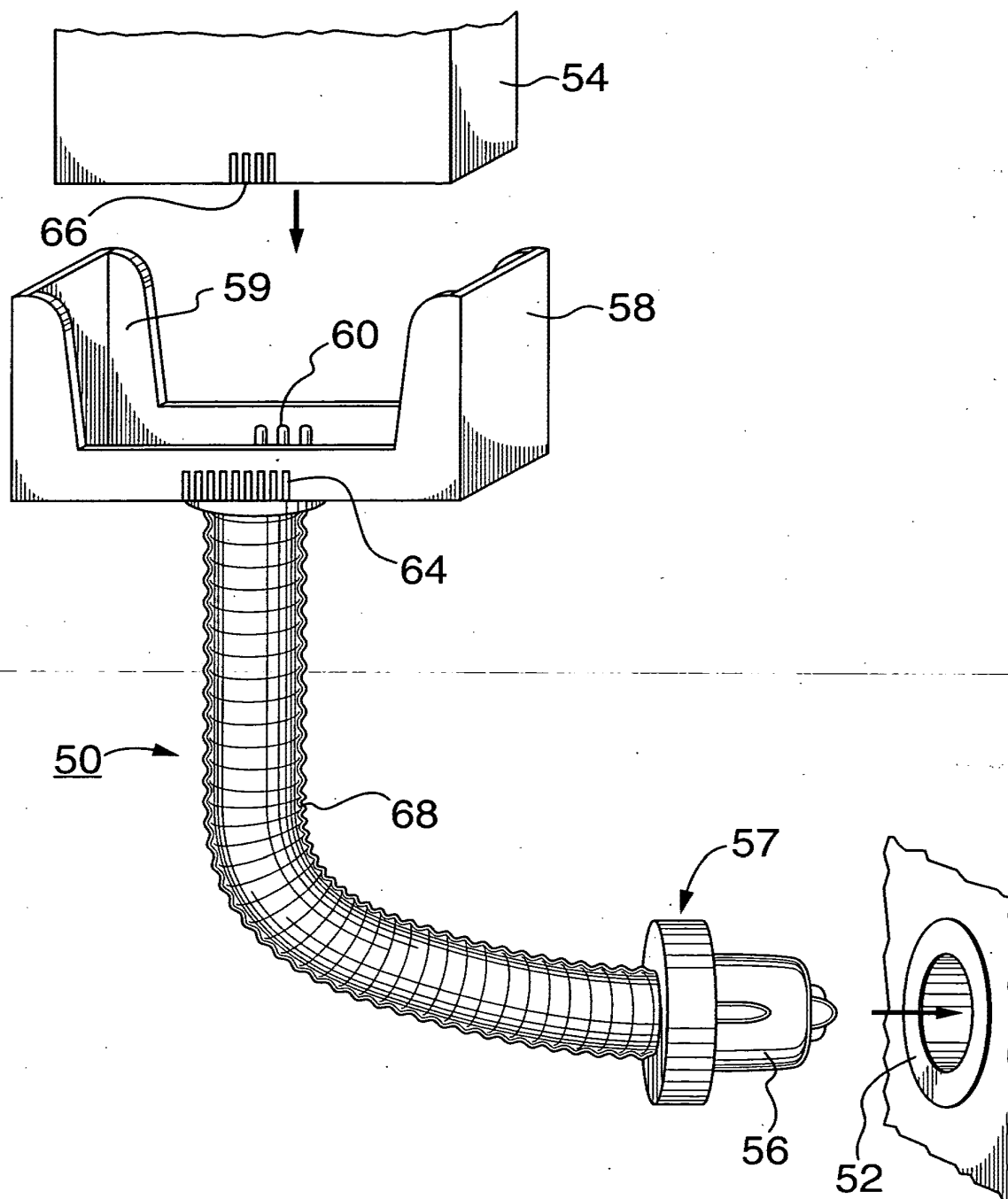


FIG. 7

REMARKS**Drawings**

Formal drawings are enclosed to replace the informal drawings presently on file. No amendments have been made to the content of the drawings.

Copies of these drawings have been forwarded to the Official Draftsman.

Claims

Claims 1 to 8 remain in the application.

Claim 4 has been amended to more clearly define the invention for which protection is sought.

New claims 9 to 36 have been added to define further aspects of the invention for which protection is sought. These newly added claims are fully supported throughout the specification as originally filed.

Claim Rejections – 35 U.S.C. 103

The Examiner has rejected claims 1 to 3 under 35 U.S.C. 103 (a) as being unpatentable over Vreman et al. (US Patent 6,350,275) in view of the document by Lam entitled "A Summary of Canadian Consensus Guidelines".

Applicant submits that claims 1 to 3 define limitations not obvious in view of the cited combination. In particular, Applicant's claim 1 defines a light therapy device including LEDs and capable of generating 2,500 lux to 7,500 lux at 12 inches.

Vreman does not teach a light therapy device as claimed in claim 1 since it does not teach a light emitting assembly capable of generating 2,500 lux to 7,500 lux at 12 inches. The Examiner has noted this deficiency in Vreman, but has cited Lam as teaching this deficiency. However, Applicant submits that Vreman and Lam are not properly combinable and, therefore, do not render the claims obvious. Applicant notes that there is no suggestion in either of these prior art references to combine them and,

further, if combined, the intended purpose and function of Vreman's invention would be destroyed.

In particular, Vreman teaches light therapy devices intended to be worn by a patient and methods of using these devices. The patent teaches (i) eye glasses and body pads for mounting within 3 cm of the patient and (ii) methods for treating disorders by illuminating a subject using a device worn by and positioned within 3 cm of the patient. The patent is not at all concerned with lux values and does not suggest reference to other documents to determine appropriate lux values.

Lam teaches guidelines for light therapy. In the report the paragraph spanning pages 8 and 9, notes the existence of head mounted units and differentiates them from non-worn light boxes. In that paragraph and again in the section entitled "Recommendations" at page 10, points 1 and 2, it is clear that the Lam recommendations relate to light boxes and not to head mounted units which are intended to be worn by a patient. In particular, Lam notes that "Although efficacy has not been established for head mounted units ..., these devices may be helpful for some patients when light boxes are not available..." (emphasis added). Thus, applicant submits that there is no suggestion in Lam to apply the recommendations contained therein to devices such as those taught by Vreman, which are to be worn by the patient.

Thus, since there is no teaching to support combining these prior art documents, it is submitted that this combination does not render claim 1 obvious.

Further, it is submitted that the combination of these references is not proper, as the purpose and/or function of the Vreman device, as disclosed, would be destroyed by combination with Lam. In particular, as noted above, Vreman teaches light therapy devices intended to be worn by a patient and including LED's positioned within 3 cm of the subject. If the lux values taught by Lam were applied to the device taught by Vreman, Vreman's device would be rendered inoperable, since this intensity of light produced by LEDs and positioned within 3 cm of the subject would most certainly cause pain to the eyes and be uncomfortably warm on the skin. In fact, applicant submits that, especially with respect to eye glass mounted devices, it would be impossible for a client

to withstand treatment by the resultant device. Also, the device would be so large that it could not be mounted on eye glasses and likely would not be suitable for use as a body pad. Again, with reference to the document of Lam, there appears to be no suggestion that the recommendations be combined with a patient-worn device such as that by Vreman.

Thus, in view of the foregoing, it is apparent that the obviousness rejection based on Vreman in view of Lam is defective and should be withdrawn with respect to the claims of the present application. Favorable consideration is requested.

It is also noted, that with respect to claim 3, neither Vreman nor Lam appear to teach a diffuser screen of light diffusing material.

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. in view of the document by Lam entitled "A Summary of Canadian Consensus Guidelines", as applied with respect to claims 1 to 3, and further in view of the brochure of DayLight Technologies, Inc. Applicant respectfully disagrees.

Claim 4 further defines light therapy device as including a therapy calculator. The inclusion of a therapy calculator facilitates treatment by facilitating determination of treatment regime and avoids the need to carry another treatment calculator. Claim 4 has been amended to define that the calculator is programmed. The DayLight Technologies brochure does not teach a programmed calculator, but rather a slide rule type device that requires manipulation by the patient to arrive at a result. Furthermore, the brochure does not teach incorporating their slide rule into a light therapy device or any of the benefits to be achieved thereby. Thus, the DayLight Technologies brochure adds nothing to the Vreman/Lam combination that would render claim 4 obvious.

Claims 5 to 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. and Lam, as applied with respect to claims 1 to 3, and further in view of Whitaker (US Patent 5,197,941). Applicant requests reconsideration of this rejection since the claims contain various limitations not taught or suggested.

First, applicant submits, as set out above, that the combination of Vreman and Lam fails to render the claims obvious. Whitaker adds nothing alone or in combination with Vreman and Lam which would make obvious the presently claimed invention. Further, claim 7 defines the light emitting assembly as being mounted on the first member while the second member acts as a base. The Examiner cited Whitaker as teaching a housing as claimed in claim 7. Applicant submits, however, that Whitaker describes a device having a base member and a lid. The lid does not house a light emitting assembly, but includes only a reflective surface. A reflective surface is not a light emitting assembly as a presently claimed. Reconsideration is respectfully requested.

Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. and Lam, as applied with respect to claims 1 to 3, and further in view of Gerdt (US Patent 6,235,046). Applicant requests reconsideration of this rejection since the claims contain many limitations not taught or suggested by this combination.

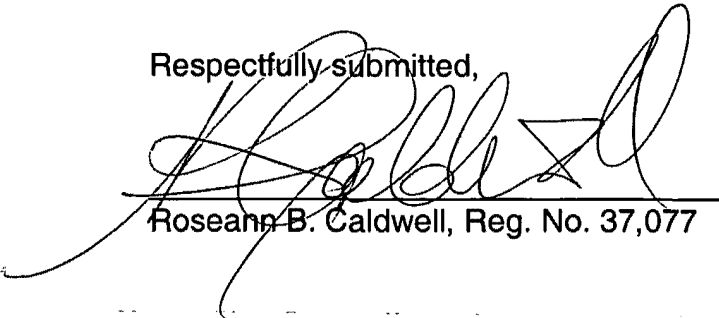
First, applicant submits, as set out above, that the combination of Vreman and Lam fails to render the claims obvious. Gerdt adds nothing alone or in combination with Vreman and Lam which would make obvious the presently claimed invention. Further, claim 8 defines the light therapy device housing as being mounted in a vehicle passenger compartment. Gerdt does not teach or suggest such a limitation. Applicant has been unable to locate the reference in Gerdt identified by the examiner that "shows a driver using the device". At best, applicant notes that Gerdt teaches "suppression of melatonin will also reduce the tiredness encountered in long distance car and truck drivers, pilots ...". While this sentence may teach the benefits of melatonin suppression, it does not teach or even suggest mounting a light therapy in a vehicle passenger compartment. In fact, Gerdt teaches either an eye glasses-mounted device or an elaborate device as shown in Figure 5, neither of which are disclosed as being mounted or even used in a vehicle passenger compartment. Therefore, again, reconsideration is respectfully requested.

Thus, in view of the foregoing, applicant respectfully requests that the Examiner reconsider and withdraw the claim rejections under 35 U.S.C. 103(a) based on the various cited references.

Conclusions

In light of the arguments presented by applicant herein, applicant submits that claims 1 to 36 are in a condition for allowance. Applicant respectfully requests that the Examiner withdraw all rejections with regard to the claims in reliance on one or more of the grounds submitted by the applicant.

Respectfully submitted,


Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA
T2P 4K7

(403) 298-3661

Date: June 30/03



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Attorney Docket 44261-4

Box Patent Application Amendment
Commissioner for Patents
Washington, D.C. 20231

copy of # 6

RECEIVED

JUL 10 2003

Dear Sir/Madam:

Transmitted herewith is an amendment in the above-identified application:

TECHNOLOGY CENTER R3700

PETITION FOR EXTENSION OF TIME

[XX] Applicant hereby petitions the Commissioner of Patents and Trademarks to extend the time for responding to the Office Action, dated February 3, 2003 for a period of two months so that a response can be filed by July 3, 2003. The fee of \$205.00 is dealt with in the section below entitled FEES.

CLAIMS FEES

☐ No additional claims fee is required.

[XX] The claims fee has been calculated as shown below:

				SMALL ENTITY	
	AFTER AMDT.	PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	FEE
TOTAL CLAIMS	36	20	16	Extra x \$9	\$144.00
INDEP. CLAIMS	5	3	2	Extra x \$42	\$84.00
FIRST FILING OF MULTIPLE DEP. CLAIMS	--	--	--	+ \$260.	--
TOTAL					\$228.00

07/08/2003 DEMMANU1 00000003 022057 09710782

03 FC:2252 205.00 DA

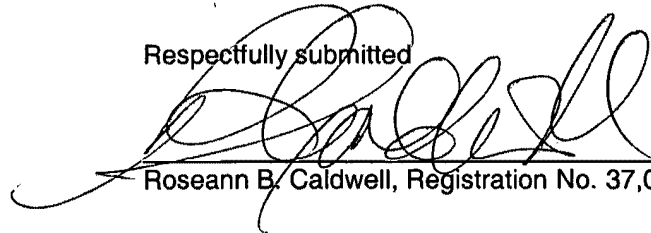
ADDITIONAL ITEMS

none

FEE PAYMENT

The Commissioner is hereby authorized to charge the extension of time fees and extra claims fees totalling **\$433.00** and any further fees that may be required for entry of the amendment to deposit account no. **02-2057**.

Respectfully submitted

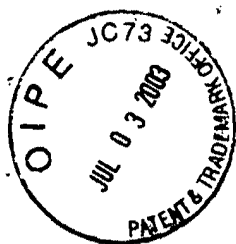


Roseann B. Caldwell, Registration No. 37,077

Bennett Jones LLP
4500 Bankers Hall East,
855 - 2nd Street S.W.
Calgary, Alberta
CANADA T2P 4K7.

June 30, 2003

Tel. (403) 298-3661
Fax. (403) 265-7219



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

*copy of
7*

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

SUBMISSION OF FORMAL DRAWINGS

New formal drawings are enclosed to replace those currently on file.

RECEIVED

JUL 10 2003

TECHNOLOGY CENTER R3700

In the Drawings:

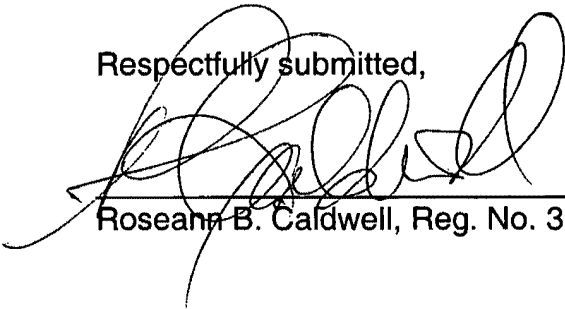
Cancel the drawings presently on file and substitute therefore the enclosed formal drawings.

REMARKS

Formal drawings are enclosed to replace the informal drawings presently on file. No amendments have been made to the content of the drawings.

Copies of these drawings have also been forwarded to the Examiner in the response to an office action.

Respectfully submitted,



Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA
T2P 4K7

(403) 298-3661

Date: June 30/03

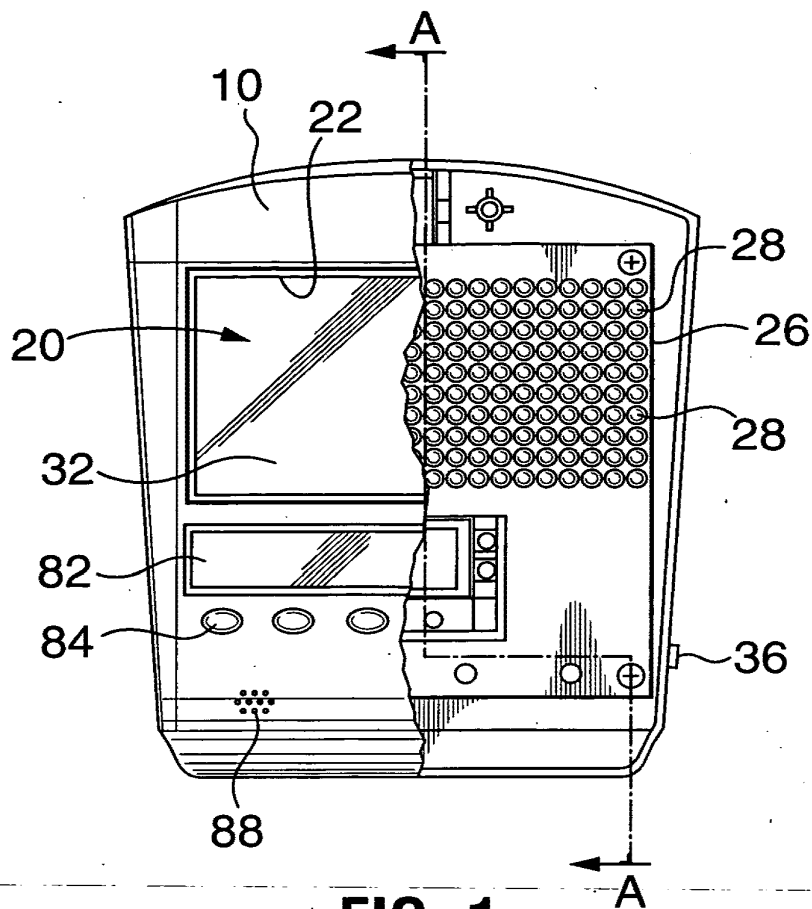


FIG. 1

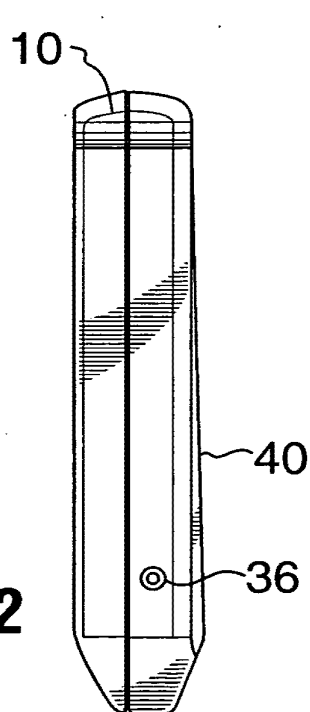


FIG. 2

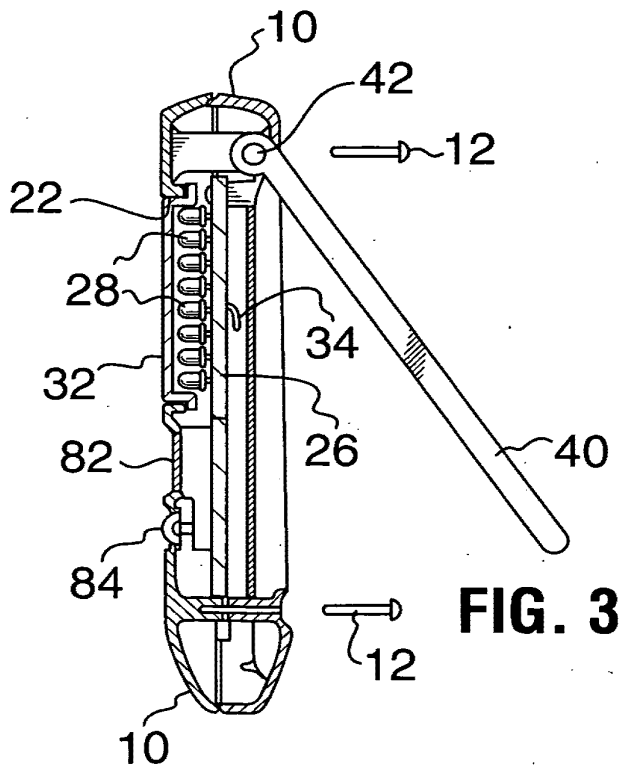
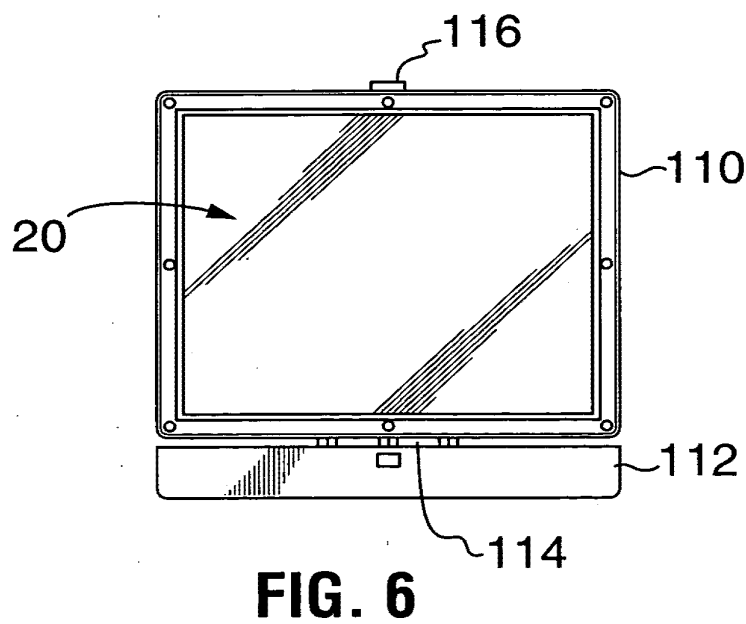
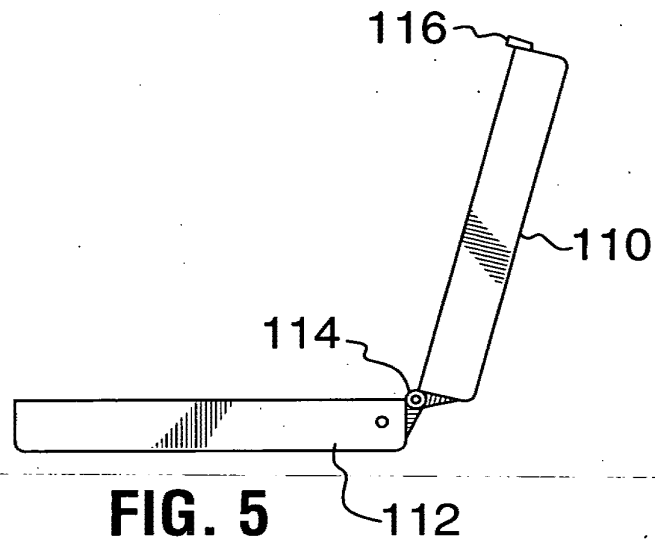
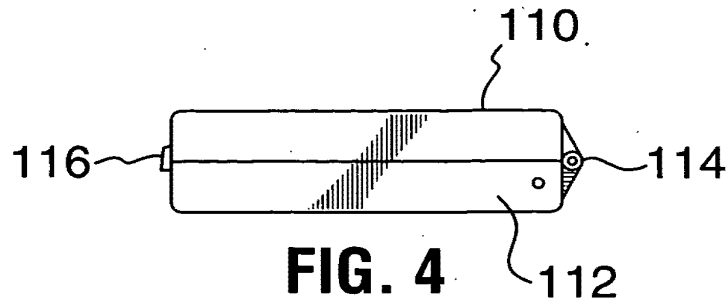
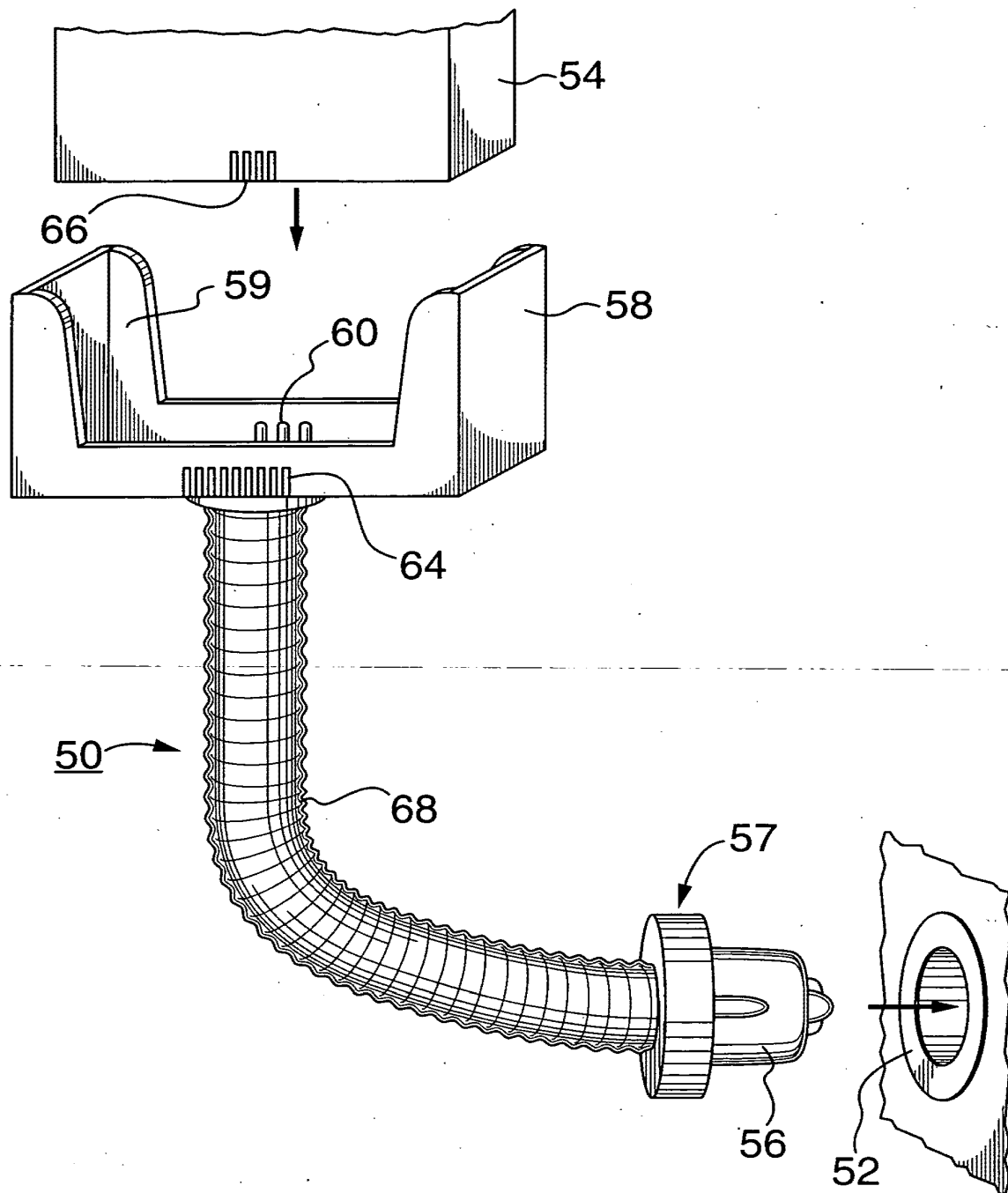
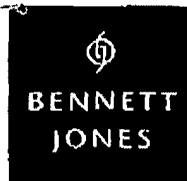


FIG. 3





FAX MESSAGE



Daniel Robinson
USPTO
Washington, DC

Bennett Jones LLP
4500 Bankers Hall East
855 - 2nd Street S.W.
Calgary Alberta
T2P 4K7

09/710 782

FAX RECEIVED

AUG 12 2003

GROUP 3700

Tel 403.298.3661

Fax 403.265.7219

FAX NO.	703-872-9302
PHONE NO.	703-872-9303
DATE	August 11, 2003

FROM	Roseann Caldwell		
LAWYER NO	472	FILE NO	42199-4
Original Status - Retained on File			

This is the first page of 26

If all pages not received, call 403.298.3234 for assistance.

This facsimile was successfully transmitted at:

MESSAGE

Examiner Robinson

Further to my voice message, please find enclosed a copy of the stamped postcard confirming that the response documents were received in the USPTO on July 3, 2003 prior to the end of the second extended month for response. The original response was sent by courier since it contained formal drawings. However, attached is a full copy of the response that was filed and received by the USPTO.

Accordingly, I do not agree that the application should be deemed abandoned.

I look forward to receiving your confirmation in this regard.

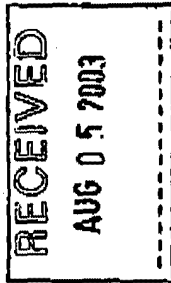
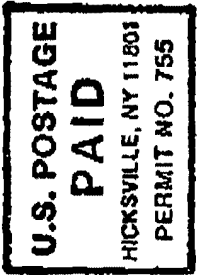
Roseann Caldwell, Regn. no. 37,077

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE ADDRESSEE AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED AND CONFIDENTIAL. IF YOU ARE NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE RESPONSIBLE FOR DELIVERING THE MESSAGE TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE. THANK YOU.

CALGARY • EDMONTON • TORONTO

AUG 11 2003 17:09 FR

11542199*4#91703 P.02



INTERNATIONAL
SURFACE
AIR LIFT

855-222-2222

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary Alberta
Canada T2P 4K7



ROSEANN B. CALDWELL

Received from < > at 8/11/03 7:11:22 PM [Eastern Daylight Time]

Case No.: 44261-4
Serial No.: 09/710,782
Filed: November 13, 2000
Applicant: PEDERSON, Larry V. et al.

Date of Mailing: July 2, 2003

The Patent & Trademark Office acknowledges, and has stamp d
hereon the date of receipt of the items checked below:

- ☒ Acknowledgement Card
- ☐ Affidavit
- ☐ Amendment
- ☐ Application Papers - no Oath/Declaration
 - Total Claims ___ Ind. Claims ___ Fee\$ ___
 - Sheets of drawings ___
- ☐ Appeal Notice
- ☐ Assignment (X2) Fee \$40.00
- ☐ Brief
- ☐ Certificate of Correction
- ☐ Change of Power of Attorney or Correspondence Address
- ☐ Claim of Priority and Certified Copies
- ☐ Declaration
- ☒ Extension of Time Fees
- ☐ Independent Inventor Statement
- ☐ Issue Fee
- ☐ Letter
- ☐ Maintenance Fee Payment
- ☐ Motion Request
- ☐ Petition
- ☐ Power of Attorney
- ☐ Preliminary Statement
- ☐ Information Disclosure Statement
- ☐ Request for Extension of Time
- ☒ Response
- ☐ Small Entity Statement
- ☒ Submission of Formal Drawings
- ☒ Transmittal



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Attorney Docket 44261-4

Box Patent Application Amendment
 Commissioner for Patents
 Washington, D.C. 20231

Dear Sir/Madam:

Transmitted herewith is an amendment in the above-identified application:

PETITION FOR EXTENSION OF TIME

[XX] Applicant hereby petitions the Commissioner of Patents and Trademarks to extend the time for responding to the Office Action, dated February 3, 2003 for a period of two months so that a response can be filed by July 3, 2003. The fee of \$205.00 is dealt with in the section below entitled FEES.

CLAIMS FEES

☐ No additional claims fee is required.

[XX] The claims fee has been calculated as shown below:

				SMALL ENTITY	
	AFTER AMDT.	PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	FEE
TOTAL CLAIMS	38	20	16	Extra x \$9	\$144.00
INDEP. CLAIMS	5	3	2	Extra x \$42	\$84.00
FIRST FILING OF MULTIPLE DEP. CLAIMS	--	--	--	+ \$260.	--
TOTAL					\$228.00

DOCKETED

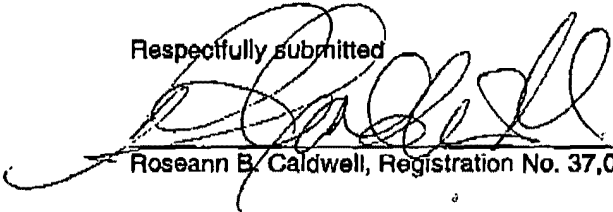
ADDITIONAL ITEMS

none

FEE PAYMENT

The Commissioner is hereby authorized to charge the extension of time fees and extra claims fees totalling \$433.00 and any further fees that may be required for entry of the amendment to deposit account no. 02-2057.

Respectfully submitted


Roseann B. Caldwell, Registration No. 37,077

Bennett Jones LLP
4500 Bankers Hall East,
855 - 2nd Street S.W.,
Calgary, Alberta
CANADA T2P 4K7.

June 30, 2003

Tel. (403) 298-3661
Fax. (403) 265-7219

OFFICIAL

Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

RESPONSE

In response to the office action dated February 3, 2002, Applicant wishes to amend the application and submit remarks. This response has been prepared in accordance with the notice dated February 13, 2003 and entitled "Amendments may now be submitted in revised format".

sn. 09/710,782

page 2

In the Claims:

Amend claims 1. Add new claims 9 to 36.

1. (Original) A light therapy device comprising:

an outer housing including an opening;
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.
2. (Original) The light therapy device of claim 1 wherein at least some of the LEDs are capable of emitting white-light.
3. (Original) The light therapy device of claim 1 wherein a diffuser screen of light diffusing sheet material is positioned over the LEDs.
4. (Amended) The light therapy device of claim 1 wherein the housing accommodates a therapy calculator [for determining] programmed to calculate a treatment regime based on an input of information.
5. (Original) The light therapy device of claim 1 wherein the housing includes 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.
6. (Original) The light therapy device of claim 5 wherein the first and second members are pivotally connected.

sn. 09/710,782

page 3

7. (Original) The light therapy device of claim 6 wherein the light emitting assembly is mounted onto the first member and the second member forms a base for support of the first member.
8. (Original) The light therapy device of claim 1 wherein the housing is mounted into a vehicle passenger compartment so as to provide light treatment to vehicle passengers or operators.
9. (New) The light therapy device of claim 8 wherein the vehicle passenger compartment is in a vehicle selected from the group consisting of a plane, an automobile, a transport truck, a bus and a plane.
10. (New) The light therapy device of claim 1 further comprising an adapter mountable on a support and formed to accept the device.
11. (New) The light therapy device of claim 10 wherein the adapter further comprises an adjustable arm.
12. (New) The light therapy device of claim 10 wherein the adapter further comprises electrical contactors for electrical communication to the device and to a power source in the support.
13. (New) 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.
14. (New) The light therapy device of claim 4 wherein the therapy calculator calculates a treatment regime based on an input of (i) a number of time zones crossed, (ii) a direction of travel and (iii) a normal wake-up time of the patient.
15. (New) The light therapy device of claim 4 wherein the therapy calculator is programmed to determine the number of time zones through which travel will occur and a treatment regime based on an input of (i) a departure city, (ii) an arrival city and (iii) a normal wake-up time of the patient.

sn. 09/710,782

page 4

16. (New) The light therapy device of claim 4 wherein the therapy calculator is programmed to prompt a user for an input of information.
17. (New) The light therapy device of claim 4 wherein the therapy calculator includes a pause feature for recording a time of treatment interruption and capable of outputting from memory the portion of treatment remaining when treatment is resumed.
18. (New) The light therapy device of claim 4 wherein the therapy calculator includes a memory capable of storing and recalling a previous treatment regime.
19. (New) An ocular light therapy device comprising:

an outer housing including an opening;

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.
20. (New) The light therapy device of claim 19 wherein at least some of the LEDs are capable of emitting white-light.
21. (New) A light therapy device comprising:

an outer housing including an opening, the housing including a base for supporting the housing in a therapy position on a support surface;

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.
22. (New) The light therapy device of claim 21 further comprising a support leg for supporting the housing in propped position for light therapy.

sn. 09/710,782

page 5

23. (New) The light therapy device of claim 22 wherein the support leg is pivotally connected to the housing and rotatable between a supporting position and a stored position.
24. (New) The light therapy device of claim 21 further comprising a mounting adapter and wherein the base is selected to fit into and be engaged by the mounting adapter.
25. (New) The light therapy device of claim 21 wherein the housing further comprises an upper member pivotally connected to the base, the light emitting assembly being mounted in the upper member.
26. (New) A light therapy device comprising:
- 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;
- an opening in the inner facing surface of the upper member; and
- 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.
27. (New) The light therapy device of claim 26 wherein the light emitting assembly includes at least some white light LEDs.
28. (New) An ocular light therapy device comprising:
- an outer housing including an opening, the housing including a base for supporting the housing in a treatment position on a support surface;

sn. 09/710,782

page 6

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 white light emitting LEDs.

29. (New) The light therapy device of claim 28 wherein the plurality of LEDs is capable of generating an output of light suitable for ocular light therapy.
30. (New) The light therapy device of claim 28 wherein the plurality of LEDs is capable of generating 2,500 lux to 7,500 lux at 12 inches.
31. (New) The light therapy device of claim 28 wherein the plurality of LEDs has a total output of light of between 50 and 500 candelas.
32. (New) The light therapy device of claim 28 further comprising a mounting adapter and wherein the base is selected to fit into and be engaged by the mounting adapter.
33. (New) The light therapy device of claim 32 wherein the adapter further comprises an adjustable arm.
34. (New) The light therapy device of claim 32 wherein the adapter further comprises electrical contactors for electrical communication to the device and to a power source in the support.
35. (New) The light therapy device of claim 32 further comprising a support leg for supporting the housing in propped position on the base.
36. (New) The light therapy device of claim 35 wherein the support leg is pivotally connected to the housing and rotatable between a supporting position and a stored position.

sn. 09/710,782

page 7

In the Drawings:

Cancel the drawings presently on file and substitute therefore the enclosed formal drawings.

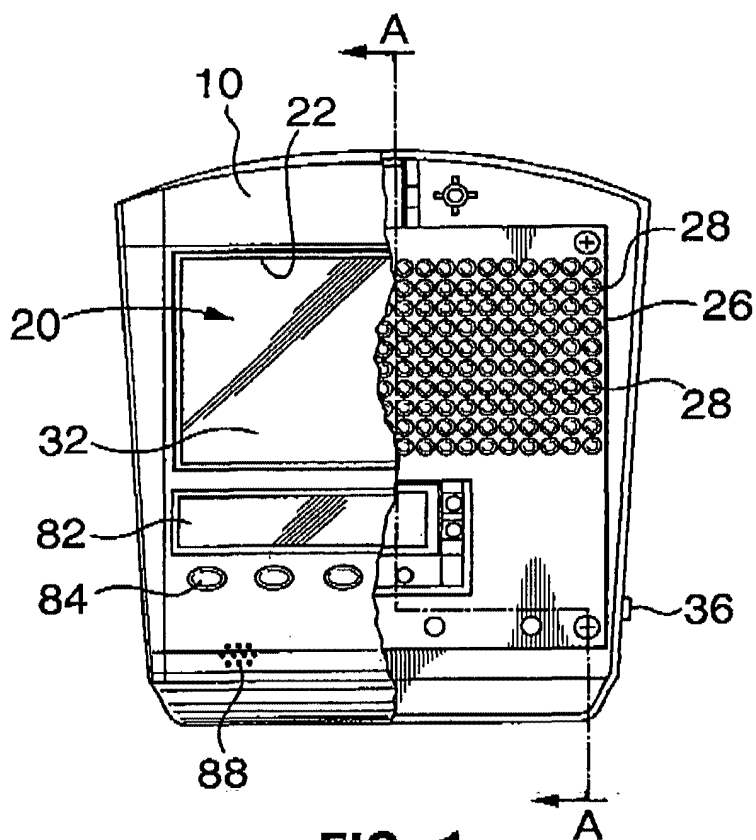


FIG. 1

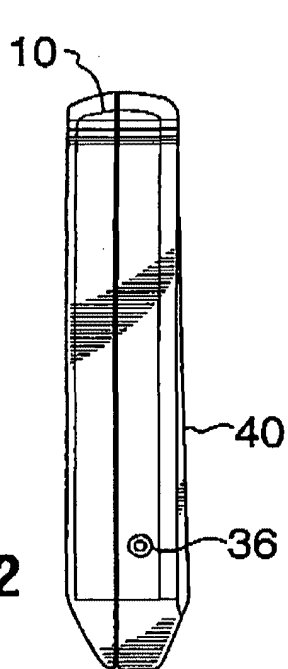


FIG. 2

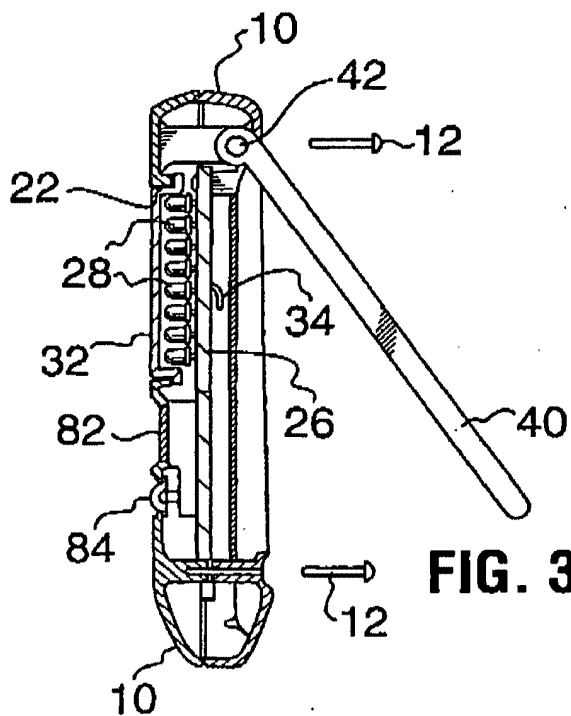
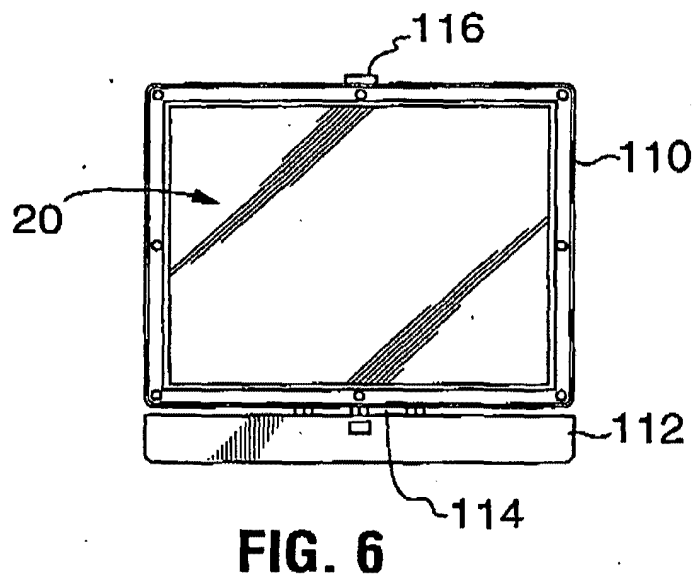
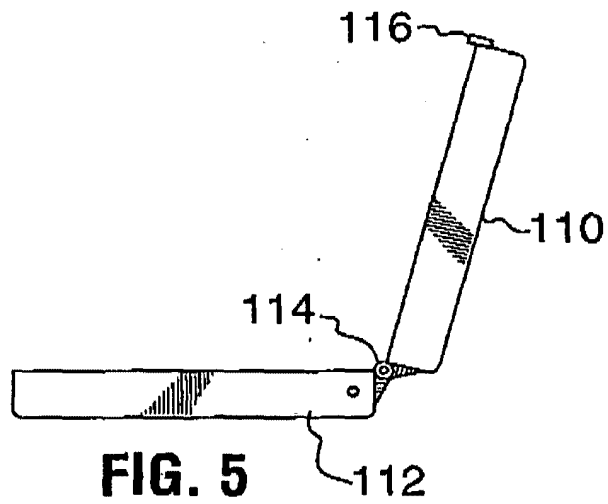
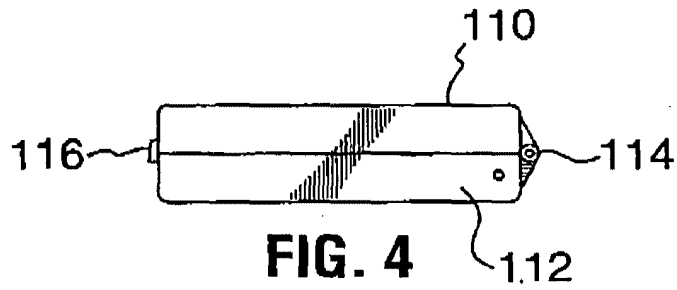


FIG. 3



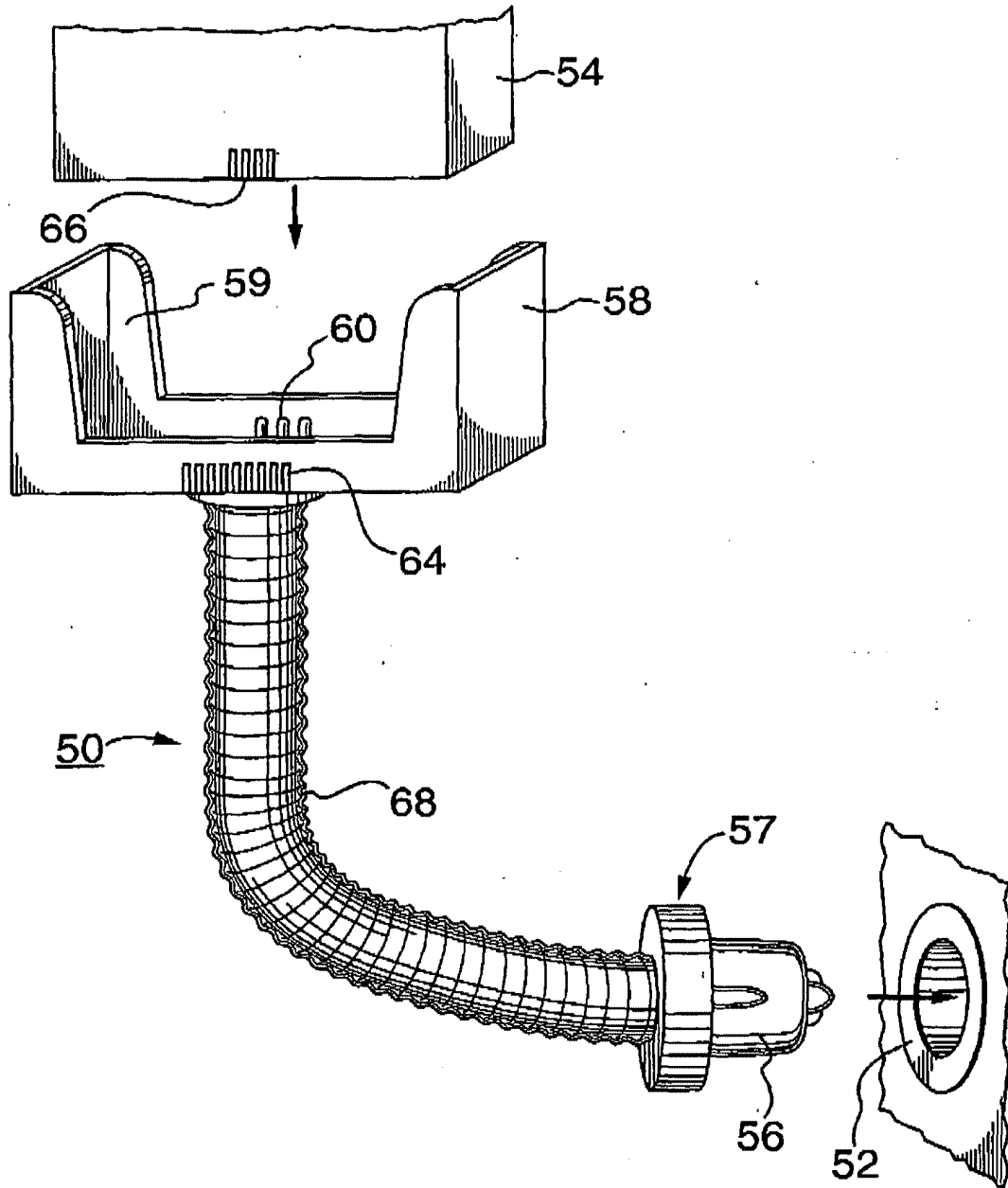


FIG. 7

sn. 09/710,782

page 8

REMARKS**Drawings**

Formal drawings are enclosed to replace the informal drawings presently on file. No amendments have been made to the content of the drawings.

Copies of these drawings have been forwarded to the Official Draftsman.

Claims

Claims 1 to 8 remain in the application.

Claim 4 has been amended to more clearly define the invention for which protection is sought.

New claims 9 to 36 have been added to define further aspects of the invention for which protection is sought. These newly added claims are fully supported throughout the specification as originally filed.

Claim Rejections – 35 U.S.C. 103

The Examiner has rejected claims 1 to 3 under 35 U.S.C. 103 (a) as being unpatentable over Vreman et al. (US Patent 6,350,275) in view of the document by Lam entitled "A Summary of Canadian Consensus Guidelines".

Applicant submits that claims 1 to 3 define limitations not obvious in view of the cited combination. In particular, Applicant's claim 1 defines a light therapy device including LEDs and capable of generating 2,500 lux to 7,500 lux at 12 inches.

Vreman does not teach a light therapy device as claimed in claim 1 since it does not teach a light emitting assembly capable of generating 2,500 lux to 7,500 lux at 12 inches. The Examiner has noted this deficiency in Vreman, but has cited Lam as teaching this deficiency. However, Applicant submits that Vreman and Lam are not properly combinable and, therefore, do not render the claims obvious. Applicant notes that there is no suggestion in either of these prior art references to combine them and,

sn. 09/710,782

page 9

further, if combined, the intended purpose and function of Vreman's invention would be destroyed.

In particular, Vreman teaches light therapy devices intended to be worn by a patient and methods of using these devices. The patent teaches (i) eye glasses and body pads for mounting within 3 cm of the patient and (ii) methods for treating disorders by illuminating a subject using a device worn by and positioned within 3 cm of the patient. The patent is not at all concerned with lux values and does not suggest reference to other documents to determine appropriate lux values.

Lam teaches guidelines for light therapy. In the report the paragraph spanning pages 8 and 9, notes the existence of head mounted units and differentiates them from non-worn light boxes. In that paragraph and again in the section entitled "Recommendations" at page 10, points 1 and 2, it is clear that the Lam recommendations relate to light boxes and not to head mounted units which are intended to be worn by a patient. In particular, Lam notes that "Although efficacy has not been established for head mounted units ..., these devices may be helpful for some patients when light boxes are not available..." (emphasis added). Thus, applicant submits that there is no suggestion in Lam to apply the recommendations contained therein to devices such as those taught by Vreman, which are to be worn by the patient.

Thus, since there is no teaching to support combining these prior art documents, it is submitted that this combination does not render claim 1 obvious.

Further, it is submitted that the combination of these references is not proper, as the purpose and/or function of the Vreman device, as disclosed, would be destroyed by combination with Lam. In particular, as noted above, Vreman teaches light therapy devices intended to be worn by a patient and including LED's positioned within 3 cm of the subject. If the lux values taught by Lam were applied to the device taught by Vreman, Vreman's device would be rendered inoperable, since this intensity of light produced by LEDs and positioned within 3 cm of the subject would most certainly cause pain to the eyes and be uncomfortably warm on the skin. In fact, applicant submits that, especially with respect to eye glass mounted devices, it would be impossible for a client

sn. 09/710,782

page 10

to withstand treatment by the resultant device. Also, the device would be so large that it could not be mounted on eye glasses and likely would not be suitable for use as a body pad. Again, with reference to the document of Lam, there appears to be no suggestion that the recommendations be combined with a patient-worn device such as that by Vreman.

Thus, in view of the foregoing, it is apparent that the obviousness rejection based on Vreman in view of Lam is defective and should be withdrawn with respect to the claims of the present application. Favorable consideration is requested.

It is also noted, that with respect to claim 3, neither Vreman nor Lam appear to teach a diffuser screen of light diffusing material.

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. in view of the document by Lam entitled "A Summary of Canadian Consensus Guidelines", as applied with respect to claims 1 to 3, and further in view of the brochure of DayLight Technologies, Inc. Applicant respectfully disagrees.

Claim 4 further defines light therapy device as including a therapy calculator. The inclusion of a therapy calculator facilitates treatment by facilitating determination of treatment regime and avoids the need to carry another treatment calculator. Claim 4 has been amended to define that the calculator is programmed. The DayLight Technologies brochure does not teach a programmed calculator, but rather a slide rule type device that requires manipulation by the patient to arrive at a result. Furthermore, the brochure does not teach incorporating their slide rule into a light therapy device or any of the benefits to be achieved thereby. Thus, the DayLight Technologies brochure adds nothing to the Vreman/Lam combination that would render claim 4 obvious.

Claims 5 to 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. and Lam, as applied with respect to claims 1 to 3, and further in view of Whitaker (US Patent 5,197,941). Applicant requests reconsideration of this rejection since the claims contain various limitations not taught or suggested.

sn. 09/710,782

page 11

First, applicant submits, as set out above, that the combination of Vreman and Lam fails to render the claims obvious. Whitaker adds nothing alone or in combination with Vreman and Lam which would make obvious the presently claimed invention. Further, claim 7 defines the light emitting assembly as being mounted on the first member while the second member acts as a base. The Examiner cited Whitaker as teaching a housing as claimed in claim 7. Applicant submits, however, that Whitaker describes a device having a base member and a lid. The lid does not house a light emitting assembly, but includes only a reflective surface. A reflective surface is not a light emitting assembly as a presently claimed. Reconsideration is respectfully requested.

Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. and Lam, as applied with respect to claims 1 to 3, and further in view of Gerdt (US Patent 6,235,046). Applicant requests reconsideration of this rejection since the claims contain many limitations not taught or suggested by this combination.

First, applicant submits, as set out above, that the combination of Vreman and Lam fails to render the claims obvious. Gerdt adds nothing alone or in combination with Vreman and Lam which would make obvious the presently claimed invention. Further, claim 8 defines the light therapy device housing as being mounted in a vehicle passenger compartment. Gerdt does not teach or suggest such a limitation. Applicant has been unable to locate the reference in Gerdt identified by the examiner that "shows a driver using the device". At best, applicant notes that Gerdt teaches "suppression of melatonin will also reduce the tiredness encountered in long distance car and truck drivers, pilots ...". While this sentence may teach the benefits of melatonin suppression, it does not teach or even suggest mounting a light therapy in a vehicle passenger compartment. In fact, Gerdt teaches either an eye glasses-mounted device or an elaborate device as shown in Figure 5, neither of which are disclosed as being mounted or even used in a vehicle passenger compartment. Therefore, again, reconsideration is respectfully requested.

sn. 09/710,782

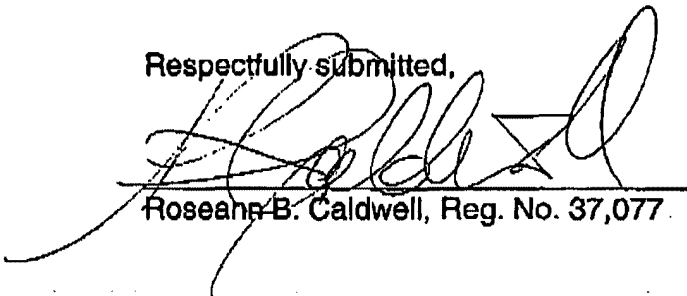
page 12

Thus, in view of the foregoing, applicant respectfully requests that the Examiner reconsider and withdraw the claim rejections under 35 U.S.C. 103(a) based on the various cited references.

Conclusions

In light of the arguments presented by applicant herein, applicant submits that claims 1 to 36 are in a condition for allowance. Applicant respectfully requests that the Examiner withdraw all rejections with regard to the claims in reliance on one or more of the grounds submitted by the applicant.

Respectfully submitted,


Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA
T2P 4K7

(403) 298-3661

Date:

June 30/03

Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

SUBMISSION OF FORMAL DRAWINGS

New formal drawings are enclosed to replace those currently on file.

sn. 09/710,782

page 2

In the Drawings:

Cancel the drawings presently on file and substitute therefore the enclosed formal drawings.

sn. 09/710,782

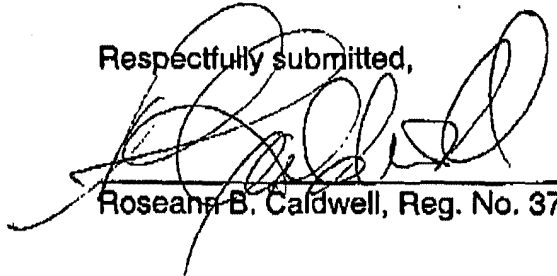
page 3

REMARKS

Formal drawings are enclosed to replace the informal drawings presently on file. No amendments have been made to the content of the drawings.

Copies of these drawings have also been forwarded to the Examiner in the response to an office action.

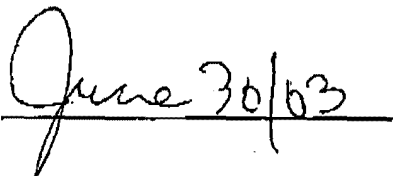
Respectfully submitted,


Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA
T2P 4K7

(403) 298-3661

Date:



OFFICIAL

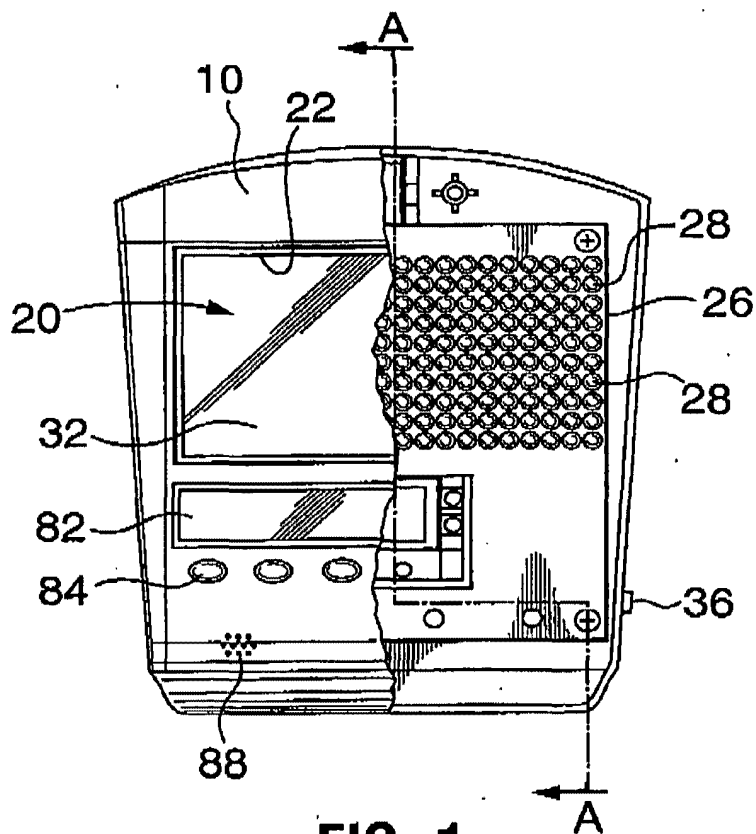


FIG. 1

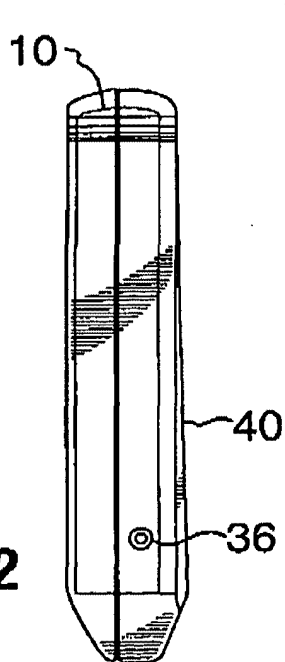


FIG. 2

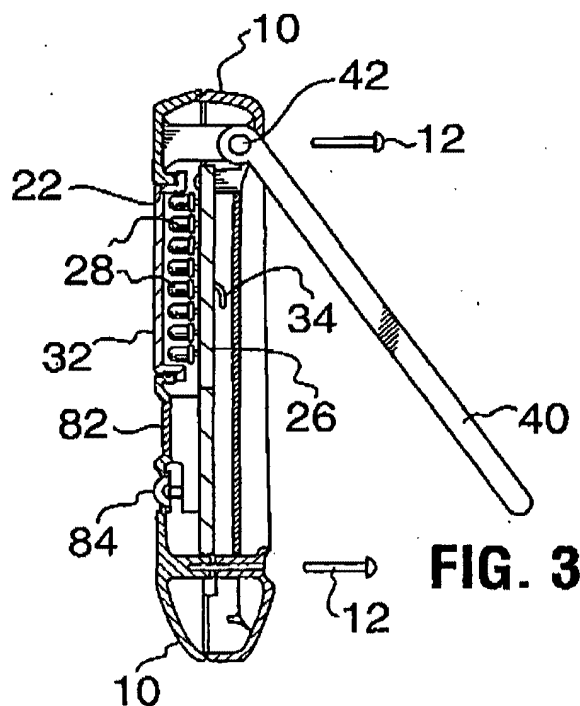
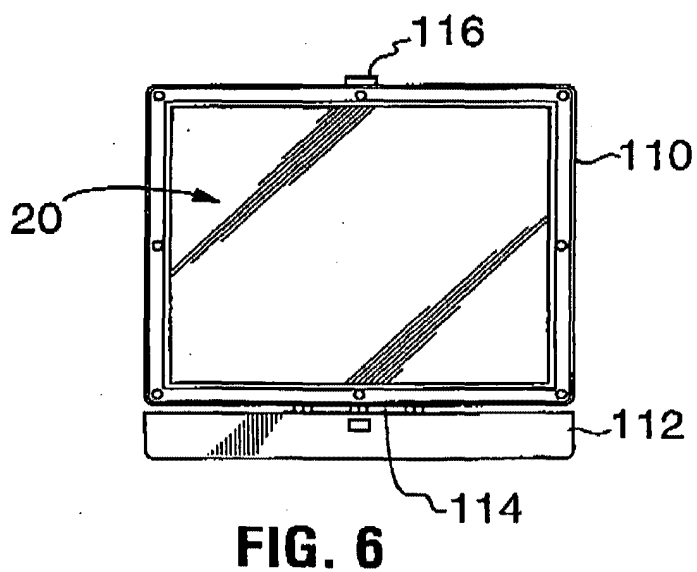
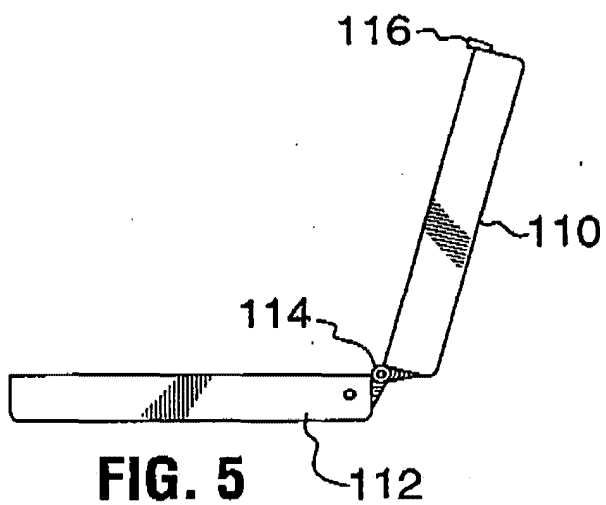
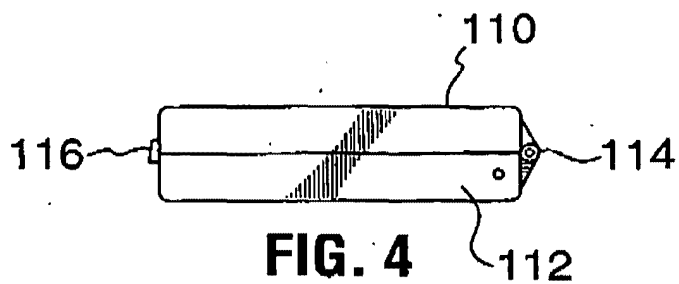


FIG. 3



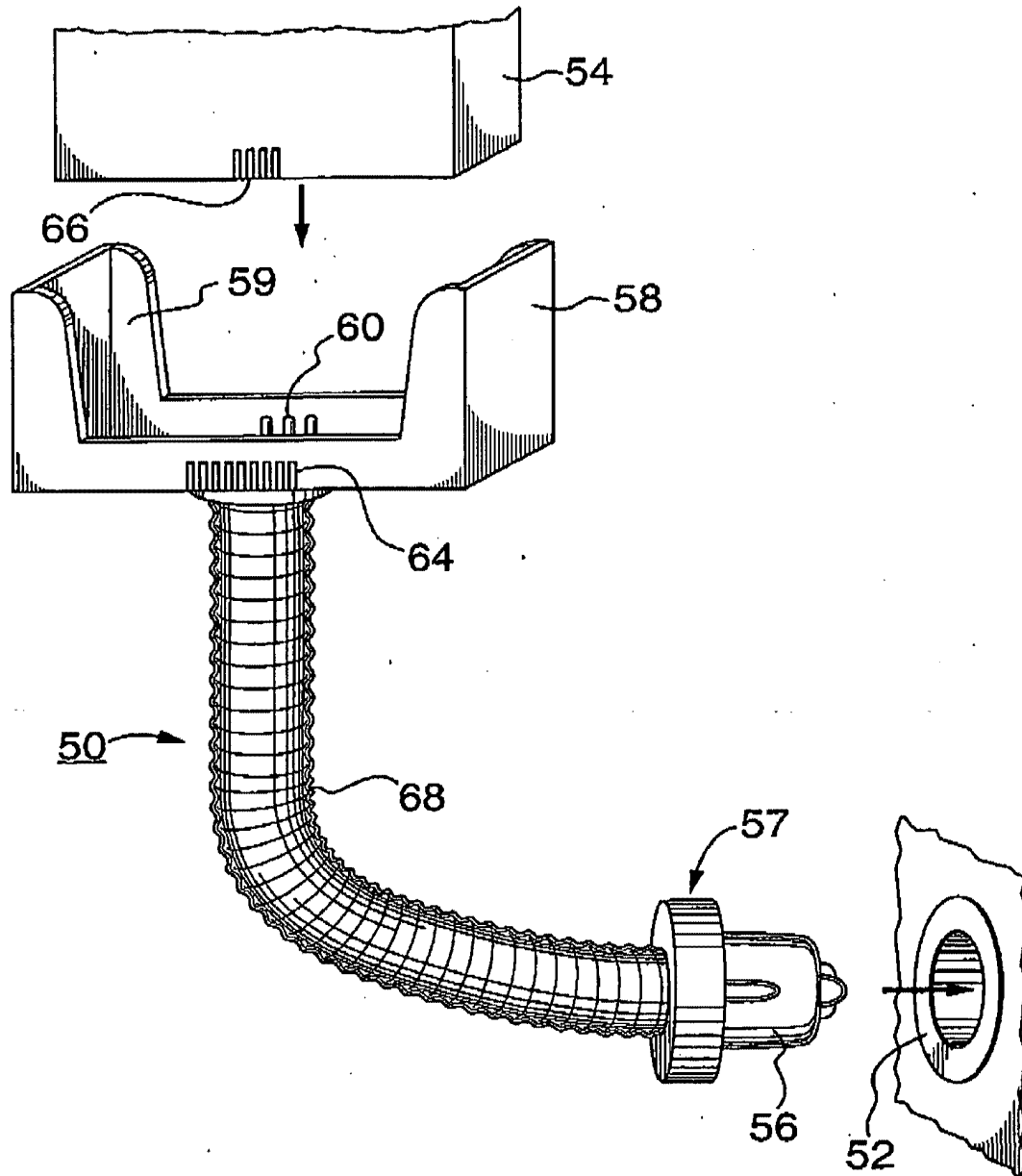


FIG. 7

-	101	("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.	USPAT; EPO; JPO; DERWENT	2003/10/24 10:10
---	-----	--	--------------------------------	------------------

-	0	("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637") .pn.) and lux with inches	USPAT; EPO; JPO; DERWENT	2003/10/24 10:10
---	---	--	--------------------------------	------------------

-	1	(("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.) and lux	USPAT; EPO, JPO; DERWENT	2003/10/24 10:17
-	2	6350275.pn.	USPAT; EPO, JPO; DERWENT	2003/10/24 10:17
-	1	6350275.pn. and lux	USPAT; EPO, JPO; DERWENT	2003/10/24 10:49

-	589	607/88.ccls. or (("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.)	USPAT; EPO, JPO, DERWENT	2003/10/24 10:39
---	-----	--	--------------------------------	------------------

-	1	(607/88.ccls. or (("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.)) and pause with function	USPAT; EPO; JPO; DERWENT	2003/10/24 10:39
---	---	--	--------------------------------	------------------

-	0	(607/88.ccls. or (("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.)) and led with candela	USPAT; EPO; JPO; DERWENT	2003/10/24 10:49
---	---	---	--------------------------------	------------------

-	0	(607/88.ccls. or (("5290280" "5403308" "5530495" "4256966" "5684854" "5634711" "5944748" "5654996" "5698866" "4069823" "4426351" "4611583" "4620791" "4807963" "5024236" "5206893" "5272716" "5303324" "5400425" "5529573" "5622187" "5660461" "5693952" "5702432" "5782896" "5800478" "5909614" "5913883" "6034576" "6050724" "6080160" "6110165" "6113589" "6159236" "6179767" "6210425" "6210425" "6287765" "5210405" "5657125" "4271408" "4825070" "5432359" "5618095" "5818399" "5949198" "6185161" "4309091" "4755807" "4844637").pn.)) and led with candelas led with candelas and lux	USPAT; EPO; JPO; DERWENT	2003/10/24 10:49
-	20		USPAT; EPO; JPO; DERWENT	2003/10/24 10:55
-	81	led with candelas	USPAT; EPO; JPO; DERWENT	2003/10/27 08:40

L Number	Hits	Search Text	DB	Time stamp
1	2	6350275.pn.	USPAT; EPO; JPO; DERWENT	2003/10/27 09:12
2	2	6167648.pn.	USPAT; EPO; JPO; DERWENT	2003/10/27 09:12
-	494	607/88.ccls.	USPAT; EPO; JPO; DERWENT	2003/10/24 09:26
-	0	607/88.ccls. and lux with "12" with inches	USPAT; EPO; JPO; DERWENT	2003/10/24 10:05
-	6	607/88.ccls. and lux with "12"	USPAT; EPO; JPO; DERWENT	2003/10/24 10:09



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

7590 10/30/2003

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 10/30/2003

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

Office Action Summary

Application No.

09/710,782

Applicant(s)

PEDERSON ET AL.

Examiner

Daniel I. Robinson

Art Unit

3742

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Amendment

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 10-12, 19-30 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman et al.(U.S.Pat.6,350,275) in view of the admitted prior art of Lam (A summary of Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder). Vreman discloses a device for treating circadian rhythm disorders using LEDS that shows many of the features of the claimed invention including a mountable adapter Fig. 4), an adjustable arm(24), electrical contactors(40) but does not explicitly claim 2500-7500 LUX. The admitted prior art shows explicitly (page 10 Recommendations) that light intensities greater than 2500 LUX are preferred to treat seasonal disorder. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to adjust the intensity of Vreman to 2500-7500 LUX as taught by Lam because seasonal disorders can be treated.

Claims 4, 13-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of the prior art as applied to claims 1-3, 10-12, 18-30 and 32-36 above, and further in view of the additional admitted prior art from Daylight Technologies. Vreman shows a programmable calculator (col. 6 lines 1-67). Vreman in view of the admitted prior art ie.

Art Unit: 3742

Canadian Guidelines does not show a calculator to modulate light exposure. Daylight Technologies shows a calculator (col. 9) to modulate light exposure. It would have been obvious to one of ordinary skill in the art of to use a calculator as taught by Daylight Technologies so as to prevent Jet Lag.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of Canadian Guidelines as applied to claims 1-3, 10-12, 19-30, and 32-36 above, and further in view of Whitaker(U.S.Pat.5,197,941). Vreman in view of Canadian Guidelines does not show a first and second parts pivotally connected. Whitaker discloses a portable device for controlling circadian rhythm disorders. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a housing as taught by Whitaker with the device of Vreman in view of Canadian Guidelines because the lid 27, (hingedly associated with box 26) forms a reflective surface.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of Canadian Guidelines as applied to claims 1-3, 10-12, 19-30, and 32-36 above and further in view of Gerdt(U.S.Pat.6,235,046). Vreman in view of Canadian Guidelines does not show a car driver using a light emitting device. Gerdt discloses a light source that shows a driver using the device. It would have been obvious to one of ordinary skill in the art to provide a light source to a driver because the device suppresses melatonin and therefore tiredness.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of the prior art as applied to claims 4, 13-16 and 18 above, and further in view of Izawa et al.(U.S.Pat.5,820,625). Vreman in view of the prior art as applied to claims 4, 13-16 and 18 above. Izawa discloses a light depilating apparatus that shows a pause function (col. 3 lines 40-67). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a pause function as taught by Izawa because the pause function allows for efficient use of the LED's.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vreman in view of the prior art as applied to claims 4, 13-16 and 18, and further in view of Dimmick (U.S.Pat.6,167,648). Vreman in view of the prior art as applied to claims 4, 13-16 and 18 above, does not show total light output of the LED's of 50-500 candelas. Dimmick discloses an illuminated modular sign having adjustable quick release modules that shows (figs. 1-2) LED's with an output of 8-9 candelas. These LED's are arranged in an array of 18, for a total output of between 50-500 candelas. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the light output as taught by Dimmick because the power consumption is less than 14 watts.

Applicant's arguments filed 8-11-2003 have been fully considered but they are not persuasive. Regarding applicant's argument that there is no motivation to combine Vreman and

Lam please note that Lam provides the motivation by dictating useable light levels. Regarding applicants argument that the references Vreman and Lam are not combinable since the combination would be large uncomfortable and injurious to the eyes note Lam page 10 "side effects" where Lam shows light 2500-10000 lux is safe for eyes. Regarding applicant's argument that Whitaker does not show a first member and a second member please see fig. 2 and cols. 4-5. Regarding applicant's argument that Gerdt does not show a driver please see cols. 2 and 4-5 show a driver receiving photonic medication, the motivation given is because the therapy is passive and the user may perform other tasks such as driving. As applicant admits Gerdt shows that tiredness will be suppressed in long distance car and truck drivers and that Gerdt teaches an eyeglass mounted device, it is this examiners opinion that a driver using an eye glass mounted device, while driving, constitutes being used or mounted in a vehicle compartment.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel I. Robinson whose telephone number is 703 306-9043. The examiner can normally be reached on M-F 5:30am-2:30pm.

The fax phone numbers for the organization where this application or proceeding is assigned are 872-9302 for regular communications and 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0861.

dlr
October 28, 2003


THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

Notice of References Cited

Application/Control No.

09/710,782

Applicant(s)/Patent Under
Reexamination
PEDERSON ET AL.

Examiner

Daniel I. Robinson

Art Unit

3742

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,820,625	10-1998	Izawa et al.	606/9
	B	US-6,167,648	01-2001	Dimmick, Frederick	40/564
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

RECEIVED

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

MAY 06 2004
TECHNOLOGY CENTER R3700

Sir:

RESPONSE

Filed with a Request for Continued Examination, this is responsive to the office action dated October 30, 2003. Applicants hereby petition the Commissioner of Patents and Trademarks to extend the time for responding to the office action by a period of three months. The fees for such extension of time are indicated in the Fees section of the Request for Continued Examination.

Reconsideration and allowance of all of the claims of the present application are respectfully requested and believed to be appropriate in view of the following submissions:

05/03/2004 CCHAU1 00000013 022057 09710782

02 FC:2253 475.00 DA

REMARKS

The Examiner's reply to our submission of June 30, 2003 has been thoroughly studied and applicants wish to reply, as follows:

Claim Rejections – 35 U.S.C. 103

The Examiner has maintained the rejection of claims 1 to 3 under 35 U.S.C. 103(a) as being unpatentable over Vreman et al. (US Patent 6,350,275) in view of the document by Lam entitled "A Summary of Canadian Consensus Guidelines". In addition, the Examiner has extended this rejection to claims 10 to 12, 19 to 30 and 32 to 36.

Applicants have closely studied the cited references and cannot agree that this combination renders the claims obvious. Applicants have obtained and submit a declaration by Dr. Raymond Lam in this regard.

In particular, in independent claims 1, 19 and 21 applicants are seeking patent protection for at least a light therapy device comprising a light emitting assembly including a plurality of LEDs and capable of generating 2,500 lux to 7,500 lux at 12 inches.

In the office action of October 30, 2003, the Examiner argues that "Vreman discloses a device for treating circadian rhythm disorders using LEDS ... but does not explicitly claim 2500-7500 LUX. ... It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to adjust the intensity of Vreman to 2500-7500 LUX as taught by Lam because seasonal disorders can be treated". Further in response to applicants' submitted arguments, the Examiner argued that "Regarding applicant's argument that there is no motivation to combine Vreman and Lam please note that Lam provides the motivation by dictating useable light levels".

Since the Examiner continues to reject claims 1, 19 and 21 on the basis of obviousness over the combination of Vreman and Lam, applicants have obtained a Declaration by Dr. Raymond Lam, as a person skilled in the art to which the invention pertains. In the Declaration, Dr. Lam clarifies that a person skilled in the art would recognize that a head

mounted unit, as defined in Vreman, does not offer identical therapy results to a fluorescent light box. Furthermore, Dr. Lam submits that in his opinion "efficacy for one type of light therapy device is not automatically applicable to another type of light therapy device without study". Dr. Lam clarifies that his reference, which the Examiner has cited, carefully recommends efficacy only for the fluorescent light box. Dr. Lam also declares that "(t)he light emitted from a fluorescent tube or incandescent bulb is different that the light generated from a light emitting diode." He states that he "would not have assumed that a device using LEDs would be effective for light therapy simply by adjusting it to have the intensity values set out in the Summary".

Therefore, the Declaration of Dr. Lam strongly evidences that a skilled person would not be led to apply the teachings of the Lam reference to either a head mounted therapy device or an LED-based device. Thus, this Declaration supports applicants' assertion that the subject matter of claims 1, 19 and 21 as a whole would not have been obvious to a skilled person. In particular, applicants submit that it would not have been obvious to one of ordinary skill in the art at the time of the claimed invention to adjust the intensity of Vreman to 2500-7500 LUX. As such, it is apparent that the obviousness rejection based on Vreman in view of Lam is defective and should be withdrawn with respect to claims 1, 19 and 21 and their dependent claims 2 to 18, 20 and 22 to 25. Favorable consideration is requested.

As noted above, the Examiner has also rejected claim 26 as being unpatentable over Vreman in view of Lam. Claim 26 defines a light therapy device comprising at least an outer housing including a base and, pivotally connected thereto, an upper member, an opening in the inner facing surface of the upper member; and a light emitting assembly including a plurality of LEDs operable to emit light through the opening.

Since neither Vreman nor Lam teach or even suggest such a light therapy device, it is apparent that this rejection should be withdrawn with respect to claim 26 and its dependent claim 27.

The Examiner has also rejected claim 28 under 35 U.S.C. 103(a) based on the combination of Vreman and Lam. In claim 28, the invention is defined as an ocular light

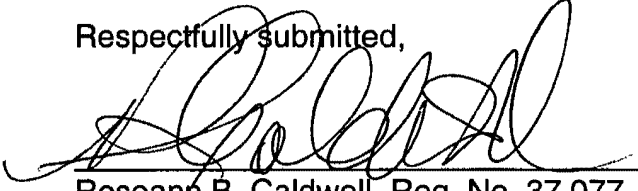
therapy device comprising at least an outer housing including an opening and a base and a light emitting assembly in the housing including a plurality of white light emitting LEDs and operable to emit light through the opening in the housing.

Again, Vreman does not teach or suggest such an ocular light therapy device and Lam adds nothing to Vreman that would render this claim obvious. In view of the foregoing, applicant respectfully submits that the obviousness rejection of claim 28 and its dependent claims 29 to 36, should be withdrawn. Reconsideration is respectfully requested.

Conclusions

In view of the foregoing, applicants respectfully request that the Examiner withdraw all rejections with regard to the claims in reliance on the grounds submitted by the applicants.

Respectfully submitted,


Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA
T2P 4K7

(403) 298-3661

Date: April 29, 2004



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	PEDERSON et al	Examiner:	Robinson
Serial No.:	09/710,782	Group Art Unit:	3742
Filed:	November 13, 2000	Docket:	44261-4
Title:	LIGHT THERAPY DEVICE		

DECLARATION UNDER 37 CFR Section 1.132

I, Raymond W. Lam, declare and say that:

I am a Professor of Psychiatry and Head of the Division of Clinical Neuroscience in the Department of Psychiatry, Faculty of Medicine, at the University of British Columbia. I am also the Medical Director of the Mood Disorders Centre at the UBC Hospital. I have authored over 170 scientific articles and book chapters and have edited two books, both of which relate to the treatment of SAD (Seasonal Affective Disorder). My research and interests include the area of light therapy;

In addition to the above-noted activities, I act as technical advisor to a number of organizations including The Litebook Company Ltd. of Medicine Hat, Alberta, Canada. As remuneration for such involvement I have become a minority shareholder in The Litebook Company Ltd.;

I was involved in the preparation of a publication entitled "Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder" a summary of which is attached as Exhibit A (hereinafter "the Summary"). The Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder were prepared by consensus of a 14 member panel based on a review of over 650 scientific articles relating to SAD and light therapy. I was a panel member and was involved in the review of the evidence as presented in the articles, in formulating the guidelines and as an author. In addition, as co-editor, I oversaw the preparation of the Summary and of the Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder;

In 1999/2000, to the best of my knowledge commercially available light therapy devices for the ocular treatment of SAD included (i) fluorescent light boxes, (ii) head mounted units and (iii) dawn simulators. At that time, the fluorescent light box was considered the "gold standard" for ocular light therapy. Head mounted units did not offer identical therapy results to those offered using fluorescent light boxes. Because of this, I felt that it was important to specify in the Summary that while "the light box has proven effective in almost every study, regardless of sample size... Studies of the head mounter units have shown good clinical response rates (comparable to light box studies) but the bright light conditions were no better than dim light, putting into question whether visors are superior to placebo".

At the time of preparing the Summary, I was not aware of any efficacy established for head mounted units. In my opinion, efficacy for one type of light therapy device is not automatically applicable to another type of light therapy

RECEIVED

MAY 06 2004

TECHNOLOGY CENTER R3700

device without study. Thus, as co-editor I ensured that many of the recommendations set out in the Summary were carefully framed to be applied only to fluorescent light boxes. In particular, the Summary contains the following recommendations: "The fluorescent light box, with intensities of greater than 2,500 lux, is the preferred device for light therapy"; "The starting "dose" for light therapy using a fluorescent light box is 10,000 lux for 30 minutes per day", "Light boxes should use white, fluorescent light with the ultraviolet wavelengths filtered out", etc. (emphasis added)

In 1999 useful intensity (lux) values for light therapy had been determined based on the use of fluorescent or incandescent light. The recommendations in the Summary concerning lux values for light therapy were specifically worded to link them with fluorescent light. The light emitted from a fluorescent tube or incandescent bulb is different than the light generated from a light emitting diode (LED), for example, with respect to wavelengths and color spectrum, characteristics which may play a role in the therapeutic benefit of light. Thus, the recommended intensities for fluorescent-based light therapy may not have been the same as the useful intensities for LED-based light therapy. Although the Summary considered various types of light (incandescent, fluorescent), I would not have assumed that a device using LEDs would be effective for light therapy simply by adjusting it to have the intensity values set out in the Summary.

That the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon;

Further declarant saith not.

Apr 14/04.
Date


Raymond W. Lam

Exhibit A
of the Declaration under 37 CFR Section 1.132
by Raymond W. Lam

Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder:

A Summary of the Report of the Canadian Consensus Group on SAD

Editors - Raymond W. Lam, MD, FRCPC and Anthony J. Levitt, MD, FRCPC



from Pfizer Canada.

The following text has been reproduced from the "Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder". It appears on the DIRECT web site with permission from the publisher and the editors. The publication copyright is held by The Canadian Journal of Diagnosis and the guidelines were produced through an unrestricted education grant

Introduction to This Document

Seasonal affective disorder (SAD) is a subtype of major depression that is characterized by onset at a certain time of year, usually the winter. These guidelines were arrived at by consensus, and have undergone both internal review by the 14 members of the consensus group and by external, international consultants. The executive summary format was chosen to provide a quick reference for the clinician and this journal was chosen to ensure the widest distribution of this information to physicians across Canada. We hope that the information presented in this executive summary will assist clinicians to better identify patients with SAD and to manage the disorder more effectively in their practice. We also hope the guidelines will help physicians to explain some of the many questions that patients and family members ask about SAD.

This document represents a summary of Consensus Guidelines for the Treatment of Seasonal Affective Disorder (SAD) developed by a group of Canadian researchers and clinicians. The purpose of the consensus guidelines was to systematically review all available evidence regarding the diagnosis, clinical features, epidemiology, pathophysiology and treatment of SAD, and to produce a series of recommendations that were clinically and scientifically meaningful. The levels of evidence on which the recommendations are based appear after each recommendation. These levels of evidence are defined below. Level 1 describes the highest level of evidence and level 5 describes the lowest level.

Guideline Panel Members

- Carl Blashko, University of Alberta;
- Rudradeo C. Bowen, University of Saskatchewan;
- Murray Enns, University of Manitoba;
- A-Missagh Ghadirian, McGill University;
- Christopher P. Gorman, University of Calgary;
- Gary Hasey, McMaster University;
- Robert P. Kraus, University of Western Ontario;
- Raymond Lam, University of British Columbia
- Robert D. Levitan, University of Toronto;
- Anthony Levitt, University of Toronto;
- Rachel L. Morehouse, Dalhousie University;
- Adam Moscovitch, Canadian Sleep Institute, Calgary;
- Edwin M. Tam, University of British Columbia.

External Consultant:

- Dan Oren, Yale University.

External Reviewers:

- Michael Terman, Columbia University;
- Anna Wirz-Justice, Psychiatric University Clinic, Basel, Switzerland.

Levels of Evidence for Data

Level 1: Randomized controlled trials (RCT's) with sufficient numbers or good quality meta-analyses based on RCT's.

Level 2: RCT's with smaller numbers (therefore insufficient power).

Level 3: Non-randomized, controlled or cohort studies, case series, case-controlled or cohort studies, cross sectional or high quality retrospective studies.

Level 4: Evidence based on the published opinion of expert committees, for example consensus / guidelines committees.

Level 5: Evidence which expresses the opinion of the committee member(s) who have reviewed the literature and guidelines, following discussion with peers.

Diagnosis and Epidemiology

How is a "seasonal pattern" of depression defined?

Seasonal affective disorder (SAD), first described in 1984, is also referred to as seasonal depression, winter depression or major depression with a seasonal pattern. Each of these terms refers to a subtype of major depressive disorder. SAD is characterized by the following four central features:

1. Recurrent major depressive episodes that start around the same time each year (e.g., September-October) and end around the same time each year (e.g., March-April).
2. Full remission of symptoms during the unaffected period of the year (e.g., May-August).
3. Over the lifetime course of the illness there are relatively more seasonal depressive episodes than non-seasonal episodes.
4. Seasonal depressive episodes occur in at least 2 consecutive years.

The DSM IV criteria for SAD are shown below. There is some argument about the definition for "the same time each year", but most investigators and clinicians allow for a 60-90 day "window" for the timing episode onset and timing of remission. In general, the patient should have an "absence of symptoms" for at least two months to be considered in remission from the seasonal episode. The most common type of SAD is winter depression. "Summer" SAD is uncommon in northern latitudes and much less is known about it.

DSM IV Criteria for "Seasonal Pattern" Specifier (SAD)

With Seasonal Pattern can be applied to the pattern of Major Depressive Episodes in Bipolar I Disorder, Bipolar II Disorder, or Major Depressive Disorder, Recurrent.

1. There has been a regular temporal relationship between the onset of major depressive episodes in bipolar I or bipolar II disorder or major depressive disorder,

recurrent, and a particular time of the year (e.g., regular appearance of the major depressive episode in the fall or winter). Note: Do not include cases in which there is an obvious effect of seasonal related psychosocial stressors (e.g., regularly being unemployed every winter).

2. Full remissions (or a change from depression to mania or hypomania) also occur at a characteristic time of the year (e.g., depression disappears in the spring).
3. In the last 2 years, two major depressive episodes have occurred that demonstrate the temporal seasonal relationships defined in Criteria A and B, and no nonseasonal major depressive episodes have occurred during that same period.
4. Seasonal major depressive episodes (as described above) substantially outnumber the non-seasonal major depressive episodes that may have occurred over the individual's lifetime.

Summary Diagnostic Criteria For Seasonal Affective Disorder

1. Recurrent major depressive episodes that start around the same time each year (e.g., September-October) and end around the same time each year (e.g., March-April)
2. Full remission of symptoms during the unaffected period of the year (e.g., May-August)
3. Over the lifetime course of the illness, there are relatively more seasonal depressive episodes than non-seasonal episodes
4. Seasonal depressive episodes occur in at least 2 consecutive years

What are the symptoms of depression in SAD?

SAD patients have the usual symptoms of depression, including low mood, reduced interest, decreased concentration, low energy and fatigue. SAD patients also tend to have a specific symptom cluster consisting of the so-called "reverse" or "atypical" vegetative symptoms of depression. These symptoms include increased sleep (70-90% of SAD patients), increased appetite (70-80% of SAD patients), unacceptable weight gain (70-80% and carbohydrate/sweets craving (80-90%).

Is the diagnosis of SAD stable over time?

Most long-term follow-up studies of SAD demonstrate that over 60% of patients diagnosed with the disorder continue to demonstrate a seasonal disturbance of mood and/or

behaviour over time. However, only about half of these patients continue to have discrete seasonal depressive episodes. Approximately 20% of SAD patients can have complete remission within several years of first diagnosis. The stability of the diagnosis of SAD appears to be similar to the long-term stability of the diagnosis of major depression itself (i.e., 44-76% of patients with major depression retain the diagnosis over several years of follow-up), and similar to the stability of other subtypes of recurrent depression, such as melancholic and atypical depression.

What instruments are useful for the diagnosis and measurement of SAD?

The only widely used instrument to detect SAD is the Seasonal Pattern Assessment Questionnaire (SPAQ), a self-report questionnaire that retrospectively assesses the magnitude of seasonal change in sleep, social activity, mood, weight, appetite and energy. The SPAQ is a very simple, brief and useful screening questionnaire, but a careful clinical evaluation is still necessary to confirm the diagnosis. Instruments used to measure the severity of SAD include the Structured Clinical Interview Guide for the Hamilton Depression Rating Scale, SAD version (SIGH-SAD), a 29-item interviewer-rated scale that is widely used in studies of SAD. There are also self report measures of severity of depression, such as the Beck Depression Inventory (version II), and a self-report version of the SIGH-SAD.

Do SAD patients frequently have bipolar illnesses?

The majority of patients with SAD have unipolar depression, but as many as 20% may have or go on to develop a bipolar course. Typically the manic or hypomanic episodes occur in the spring and summer, and these must be carefully distinguished from the improved mood that is associated with recovery from the winter depression. There are important treatment differences for patients with bipolar as compared with unipolar illness.

Are there other diagnoses to consider in a patient presenting with winter difficulties?

Many people will complain of seasonal difficulties, but clinicians need to consider a variety of conditions in the differential diagnosis of SAD. Seasonally recurrent psychosocial stressors (e.g., fall/winter unemployment, anniversary grief reactions during the fall-winter) may produce some of the symptoms of depression. Some people experience marked changes in sleep, appetite, weight and energy during the winter but do not meet criteria for a major depressive episode - such patients are generally considered to have "subsyndromal" SAD. Preliminary studies suggest that such patients may also have a good response to light therapy. Finally, a number of reports indicate that conditions other than major mood disorders may be subject to significant seasonal influences. These conditions include eating disorders, premenstrual syndromes and anxiety disorders (panic disorder, obsessive-compulsive disorder).

What is the prevalence of SAD?

There have been more than 15 studies that have examined the prevalence of SAD in various population groups. Community-based surveys in North America have reported the prevalence of SAD between 0.8% and 9.7%. European community-based studies have estimated the prevalence of SAD between 1.3% and 3% of the population and studies in Asia report rates of 0 to 0.9%. The discrepancy in these findings may be attributed to a variety of methodologic differences between the studies. However, the most important factor that appears to account for the relatively wide range of prevalence estimates is the diagnostic instrument that was employed in each study. Most studies use the SPAQ (see section on diagnosis), which tends to over-estimate the prevalence. Studies that have used a more accurate structured diagnostic interview and standard diagnostic criteria suggest that the prevalence of SAD in Canada is between 2% to 3%, and that the rate in the US is less than 1%. By comparison, bipolar disorder or manic depression occurs in just over 1% of the population.

What is the female to male ratio?

Virtually all studies of the prevalence of SAD report that women are more likely to suffer from SAD. In some studies the female to male ratio is close to 4 to 1, but the average ratio across all studies is approximately 1.8 to 1.

What is the prevalence with respect to age?

Epidemiological studies report that the lifetime prevalence of SAD increases with age until the sixth decade. After the age of 50-54 the prevalence declines dramatically, such that the prevalence of SAD over 65 is very low. Nonetheless, patients over 65 may still present to clinics for treatment and clinical experience suggests their response to treatment does not differ from that of younger patients with SAD.

Does latitude impact on prevalence?

Some earlier studies in the United States that used the SPAQ reported a significant effect of latitude on prevalence, with an increase in prevalence with increasing latitude. However, more recent studies using structured interviews have shown that the latitude effect is not as robust as previously suggested.

Do other factors impact on the prevalence of SAD?

The recall of lifetime episodes of seasonal depression is affected by the time of year the
<http://www-ths.mcmaster.ca/direct/sad2.html> 19/08/99

interview takes place; that is, patients interviewed during the fall or winter are more likely to report lifetime seasonal difficulties as compared to patients interviewed in the summer. One USA study, which used a structured diagnostic interview, reported that SAD patients were more educated than non-SAD patients were and that it was more common in rural settings. However, a Canadian study, which used a similar diagnostic interview, found no urban-rural or educational effects.

PATHOPHYSIOLOGY OF SAD

Research has focused on the relationships between light and SAD, but the etiology and pathophysiology of SAD remain unknown. When SAD was first described in 1984, the obvious link between SAD, seasonal changes in photoperiod and the response to bright light inspired hope that an underlying photoperiodic mechanism would soon be found. Subsequent research has shown that SAD is likely a heterogeneous condition, since no one factor has been found to account for SAD. Several promising theories, not necessarily mutually exclusive, have emerged, including disturbances in circadian rhythm and serotonin regulation.

What is the role of circadian rhythm disturbance in SAD

The original model of SAD as a simple disturbance in photoperiodic regulation has not been confirmed. Another hypothesis considers that SAD results from phase-delayed circadian rhythms that are corrected by appropriately timed light therapy. Several studies have supported these findings, and bright light clearly has effects on the human circadian system. Not all studies, however, have shown circadian rhythm disturbances in SAD or that light-induced changes in circadian rhythms are necessary for an antidepressant effect. Melatonin was of interest in SAD because it mediates many seasonal animal behaviours and bright light has direct suppressive effects on nocturnal melatonin secretion. It is unlikely that melatonin is directly involved as a cause of SAD, because studies have not shown consistent changes in melatonin levels and melatonin suppression is not always required for the antidepressant effect of light.

What neurotransmitters are involved in SAD?

Various neurotransmitters (e.g., dopamine, noradrenaline) have been implicated in the etiology of SAD. The strongest evidence involves serotonin. Of all of the neurotransmitters of interest in depression, only serotonin has a distinct seasonal pattern of metabolism in normal humans, with the lowest levels of serotonin generally occurring in the winter and spring, and the highest levels in the summer and fall. Many neuroendocrine studies have shown abnormal hormonal responses to serotonergic drugs in SAD, suggesting

dysregulation at the level of the post-synaptic serotonin receptor. Rapid depletion of plasma tryptophan, the amino acid precursor of serotonin, has been shown to reverse the antidepressant effect of light therapy in SAD, which suggests that bright light acts through serotonergic mechanisms. Drugs that affect serotonin via different mechanisms, including serotonin synthesis (L-tryptophan), neuronal serotonin release (d-fenfluramine), and serotonin reuptake blockade (sertraline, fluoxetine), are beneficial in SAD. Twin studies shown that a genetic factor accounts for between 29% and 65% of the variance in seasonality scores. Recent studies show that changes in genes affecting serotonin metabolism (e.g., the serotonin transporter gene and the tyrosine hydroxylase gene) may differentiate SAD patients from normal subjects.

What other abnormalities are found in SAD?

Other hypotheses for SAD, with preliminary supporting evidence, include other hormonal dysregulation (cortisol, thyroid), reduced retinal sensitivity to light, psychological mechanisms and personality factors.

LIGHT TREATMENT

Light therapy, also called light treatment or phototherapy, involves daily scheduled exposure to bright artificial light. The therapeutic use of light in SAD arose from basic research showing that exposure to room light (less than 500 lux, a unit of illumination intensity) could alter circadian and seasonal rhythms in animals. Some circadian effects of light are mediated via suppression of nocturnal melatonin secretion. In 1980, it was shown that higher intensity light (>2,000 lux) was required to suppress human melatonin secretion. This observation led to the first controlled study of light therapy in SAD in 1984.

Is light therapy an effective treatment for SAD?

More than 60 controlled studies of light therapy have been conducted by researchers around the world. Although there are general limitations to each study (e.g., small sample size, brief treatment periods), several qualitative reviews have concluded that light therapy is an effective treatment for SAD, with response rates of 60% to 90% in controlled studies. Two meta-analyses also confirm the efficacy of light therapy against plausible placebo controls. In large series, the clinical response rate for light therapy is approximately 65%.

The most studied light device is the fluorescent light box. The fact that the light box has proven effective in almost every study, regardless of sample size, has placed the light box as the "gold standard" light device. Other light devices include head mounted units, or incandescent light visors. Studies of the head mounter units have shown good clinical

response rates (comparable to those of light box studies) but the bright light conditions were no better than dim light, putting into question whether visors are superior to placebo. Dawn simulators are devices that slowly increase the room illumination while subjects are sleeping, to simulate a "summer dawn" during the winter. Early results suggest a beneficial effect of dawn simulators in SAD, but other studies show superiority of light boxes over dawn simulators. Although efficacy has not been established for head mounter units and dawn simulators, these devices may be helpful for some patients when light boxes are not available or not convenient.

What are the relevant parameters of light therapy?

Parameters for light therapy generally include intensity, wavelength, duration of daily exposure and timing of light exposure during the day. Intensity is usually expressed in "lux", a photometric unit of illuminance that corrects for the visual spectral responsiveness of the eye. As reference, indoor lighting is usually less than 500 lux, outdoor light on a cloudy day ranges from 1,000 lux to 5,000 lux, and midday summer sunlight can reach 50,000 lux or higher. The antidepressant effects of light therapy are thought to be mediated through the eyes, not through skin exposure.

The usual "dose" of light therapy used in studies was 2,500 lux for at least one to two hours per day, but recent studies showed similar efficacy for 30 minutes of 10,000 lux exposure. Because of the convenience of briefer daily treatments, the 10,000 fluorescent light box has become the clinical standard. Although there has been controversy about the importance of timing of light exposure, new studies have confirmed that, on average, morning light therapy is superior to evening light exposure. The wavelength or type of light (incandescent, fluorescent) is not as important as intensity, but white light may be superior to narrow band wavelengths. Ultraviolet wavelengths are not necessary for the antidepressant response, and should be avoided because of long term toxicity.

What is an adequate length of time for a trial of light therapy?

Response to light therapy generally occurs within two to four days, and measurable improvement is often seen in one week. Most patients (but not all) experience rapid recurrence of symptoms after discontinuing light therapy. Longer trials have shown increasing response after two weeks, and incremental improvement response at three or four weeks. The atypical depressive symptoms (hypersomnia, increased appetite, carbohydrate craving, and weight gain) are associated with favorable response to light therapy, while the presence of melancholic symptoms or a personality disorder is associated with poor response.

What practical tips are there for using light therapy?

Commercial light devices are now widely available in medical supply stores or via mail

order. A light device should meet government electrical safety standards, have a filter for the ultraviolet wavelengths and have been tested in reputable clinical trials. Patients must maintain proper distance and positioning to ensure the correct dose of light exposure. Because of the rapid response and relapse with light therapy, patients can become involved as active participants in determining their optimal dosing of light. For example, if patients respond to early morning light exposure, but the time is inconvenient for them, they can try shifting the exposure time to afternoon or early evening. Alternatively, they can try to reduce the duration of exposure to 15 minutes for maintenance.

What are the side effects of light therapy?

The common side effects of light therapy reported by patients in clinical trials include eye strain or visual disturbances (19%-27%), headache (13%-21%), agitation or feeling "wired" (6%-13%), nausea (7%), sweating (7%) and sedation (6%-7%). These side effects are generally mild and subside with time or by reducing the dose of light. Hypomania and mania have also been reported as uncommon but serious side effects of light therapy.

Fluorescent light therapy using 2,500 lux to 10,000 lux is considered relatively safe on the eyes. Two follow-up studies did not show any eye or retinal damage after five years of light therapy. Ophthalmologic monitoring is not considered necessary unless there are risk factors for light toxicity (Table 3).

Can light therapy be used in other populations and conditions?

Some studies have shown benefit of light therapy in children and adolescents with SAD, in adults who have "subsyndromal" symptoms of SAD and in adults with nonseasonal depression. There are also studies of light therapy in other psychiatric disorders, including bulimia nervosa and premenstrual dysphoric disorder. The circadian effects of bright light have been exploited to treat jet lag, shift work, circadian sleep disorders and behavioural disorders in dementia. These results are considered preliminary and beyond the scope of this summary.

Recommendations: Light Therapy

1. Light therapy is an effective first line treatment for seasonal disorder (Level 1 evidence).
2. The fluorescent light box, with light intensities of greater than 2,500 lux, is the preferred device for light therapy (Level 1 evidence).

3. Some patients may respond to other light devices, such as head mounter units and

dawn simulators (Level 5 evidence).

4. The starting "dose" for light therapy using a fluorescent light box is 10,000 lux for 30 minutes per day (Level 1 evidence).
5. Alternatively, light boxes emitting 2,500 lux require two hours of exposure per day (Level 1 evidence).
6. Correct positioning is important (e.g., sitting close enough to the light box) to obtain the correct illumination (Level 3 evidence).
7. Light boxes should use white, fluorescent light with the ultraviolet wavelengths filtered out (Level 3 evidence, Level 2 evidence).
8. Light therapy should be started in the early morning, upon awakening, to maximize treatment response, but exposure at other times of the day may be helpful for some patients (Level 1 evidence).
9. Response to light therapy often occurs within one week, but some patients require two to four weeks to show a response (Level 2 evidence).
10. Patients can be encouraged to become active participants in establishing an optimal light protocol (Level 5 evidence).
11. Common side effects of light therapy include headache, eyestrain, nausea and agitation, but these effects are generally mild and transient, or resolve with reducing the dose of light (Level 2 evidence).
12. There are no absolute contraindications to light therapy and no evidence that light therapy is associated with ocular or retinal damage (Level 3 evidence).
13. Patients with ocular risk factors should have a baseline ophthalmologic consultation prior to starting light therapy, and periodic monitoring (Level 5 evidence)

Recommendations For Ophthalmologic Consultation

Ophthalmologic consultation recommended for patients with the following risk factors for retinal toxicity to bright light exposure:

1. Pre-existing retinal or eye disease (e.g., retinal detachments, retinitis pigmentosa, glaucoma).
2. Systemic illnesses that affect the retina (e.g., diabetes mellitus).
3. Previous cataract surgery and lens removal.

4. Taking medications that have photosensitizing effects in humans.*
 - o lithium
 - o phenothiazines, such as thioridazine (antipsychotics, antiemetics)
 - o chloroquine (antimalarial)
 - o hematoporphyrins (used in photodynamic therapy for cancer)
 - o 8-methoxypsoralens (used in ultraviolet treatment for psoriasis)
 - o melatonin
 - o hypericum (St. John's Wort)

5. Older age, because of greater risk of age-related degeneration.

*Animal studies show retinal changes with drugs including beta blockers, tricyclic antidepressants, and tryptophan. The panel consensus opinion was that ophthalmological monitoring for patients on these drugs is not required unless patients have other risk factors.

MEDICATION TREATMENT

Are antidepressants effective in the treatment of SAD?

The best evidence for efficacy of antidepressants in SAD involve the selective serotonin reuptake inhibitors (SSRIs). Two multicentre, double-blind, randomized, placebo-controlled studies of sertraline (187 patients) and fluoxetine (68 patients) confirm that these medications are effective in the treatment of SAD. In the fluoxetine study, there was significant superiority of fluoxetine over placebo in the clinical response rates (59% versus 34%, respectively), but there were no significant differences between the two conditions in the actual depression scores. In the other study, sertraline was significantly superior to placebo in both the clinical response rates (62% versus 46% respectively) and the depression scores. The sertraline study had the advantages of a larger sample size, longer treatment duration (eight weeks versus five weeks) and flexible dosing design.

What about other antidepressants?

One small study compared fluoxetine with moclobemide and found similar response rates between the two drugs, but another study found no differences between moclobemide and

placebo. Other antidepressant studies (including bupropion, tranylcypromine, citalopram and desipramine) are limited by small sample size and/or open design. Therefore, efficacy for these medications is not yet proven in SAD. Clinical experience suggests that patients with SAD better tolerate the newer, selective antidepressants, but it is possible that all antidepressants will be effective.

What is the usual effective dose of antidepressants in SAD?

The starting dose of the antidepressant depends on several factors. The clinician should start at a lower dose (e.g., sertraline 25 mg) and increase the dose cautiously (e.g., every two weeks) in: 1) patients with previous sensitivities to antidepressants; 2) adolescent or elderly patients; 3) patients with a concurrent medical illness; 4) patients who are taking other medications that interact and increase the blood levels of the antidepressant. The sertraline study was a flexible dosing study using doses of 50 mg or 200 mg per day. Most patients took 50 mg or 100 mg per day, and the average dose of sertraline was 111 mg per day. The fluoxetine study used a fixed dose of 20 mg per day. These doses are similar to the doses that are effective in nonseasonal major depression.

What are the side effects of antidepressants?

The only antidepressant studies to systematically report on side effects are the two double-blind studies involving the SSRIs sertraline and fluoxetine. Generally, these medications were well tolerated by the SAD patients. The most frequently reported side effects in the fluoxetine-treated patients were headache, flu-like syndrome, rhinitis, and pharyngitis, but less than 6% of patients terminated the study because of side effects. The most common side effects in the sertraline-treated patients were nausea, insomnia and diarrhea, and there was also a low rate of termination due to side effects. Antidepressant-induced mania or hypomania can occur, but is infrequent in patients with a unipolar depressive disorder. Although there are no direct comparisons, the side-effect profiles of these medications for SAD are similar to those reported in nonseasonal depression.

How long should an acute trial of antidepressant last?

Patients in the fluoxetine study were treated for five weeks, but the differences in depression scores between fluoxetine and placebo did not reach statistical significance during that time. The sertraline study treated patients for eight weeks and showed clear superiority of sertraline over placebo. Therefore, an adequate trial of antidepressants should last six to eight weeks, similar to that recommended for nonseasonal depression.

Have other medications been studied in the treatment of SAD?

Several controlled studies have examined non-antidepressant medications in the treatment of SAD, but these studies are limited by very small sample sizes. Preliminary positive results have been reported with drugs that affect melatonin secretion (e.g., melatonin, propranolol) or serotonin metabolism (e.g., d-fenfluramine, 1-tryptophan). A small study also found that hypericum (St. John's Wort) plus a dim light box had a similar positive effect compared to a pill placebo plus a bright light box. These results are too preliminary to recommend any of the drugs for the treatment of SAD.

Recommendations: Medication Therapy

1. Sertraline and fluoxetine are effective, well tolerated, first-line treatments for SAD (Level 1 evidence).
2. The effective antidepressant dose ranges are likely similar to those recommended for the treatment of nonseasonal major depressive disorder (Level 2 evidence).
3. Other antidepressants may also be effective in the treatment of SAD, using doses similar to those recommended for non-seasonal depression (Level 3 evidence).
4. An adequate trial of antidepressants involves at least 6 weeks of treatment (Level 2 evidence).
5. Other medications (propranolol, 1-tryptophan, hypericum) require further study before they can be recommended for treatment of SAD.

MANAGEMENT ISSUES

How do you choose between light therapy and medications?

Some experts have suggested that light therapy is the treatment of choice for SAD, given that the response is rapid, that side effects are minimal, and that the effect sizes in light therapy studies have been greater than in antidepressant studies. However, it is difficult to compare these studies because of methodological differences. Since there is very little information comparing light therapy and medications, the selection of treatment relies on individual assessment of benefits and risks. Factors to consider are listed in Table 4. Note that none of these factors is absolute. For a given patient, the relative importance of each factor should be considered.

For patients with less severe depression and good compliance, light therapy can be considered as the first choice treatment. Patients with atypical symptoms of depression may have better responses to light therapy. For more severe depressions, antidepressants

alone or combined antidepressants and light therapy, is recommended.

Patient preference and compliance are also very important factors. Many patients prefer a non-pharmacologic treatment. Women of child bearing age are particularly interested in non-drug treatments, even though there are no data on effects of light therapy during pregnancy, or on the fetus, or with breast feeding. Other patients find that even 30 minutes a day required for light therapy is too inconvenient, and medications are a better choice for them.

Side effects are another consideration. Although the newer medications are well tolerated by most patients, the side effects of light therapy are generally milder than those of antidepressants. Some patients have risk factors for using light therapy, such as retinal disease or use of photosensitizing medications, while others have risk factors for use of antidepressants, such as liver disease or potential drug-drug interactions.

Finally, cost is an issue for many patients, commercial light boxes that have been tested in reputable clinical trials cost between CDN\$300 and CDN\$500, about the cost of one season's treatment with antidepressants. Light boxes have a higher initial cost, but fewer ongoing costs, make them cost-effective over several seasons. Medications have less initial cost, but more ongoing costs. However, light boxes may not be covered under health insurance plans, while costs of medications are often reimbursed.

When should you combine medications and light therapy?

A clinical aphorism is to use one treatment at a time. Starting both treatments together leads to clinical confusion when trying to determine which treatment is beneficial, or which treatment is producing side effects. Combination treatment may be considered when there is only partial response to one treatment, or when side effects limit pushing the dose of a treatment.

How long should SAD patients be treated?

A trial of light therapy should last at least two to four weeks. A trial of antidepressants should last at least six weeks. Relapse generally occurs rapidly when light therapy is discontinued, and less rapidly when antidepressants are stopped. Most patients are treated only during the symptomatic winter months, and then discontinue their treatments during the spring and summer. The treatments are then restarted in the autumn. Some patients can wait until they have mild symptoms before restarting treatment, while others will opt to start treatment well ahead of their usual onset time (at least two weeks ahead for light therapy and four weeks ahead for antidepressants) to prevent an episode. Since the onset of action of light is rapid, continuous light therapy throughout the summer is not necessary, although some patients occasionally use light therapy for transient, mild symptoms during the summer. Continuous antidepressant treatment (i.e., throughout the summer) is indicated in patients who have problems with compliance, who take a long time to taper on and off medications, who have difficulty dating onset of symptoms in the fall, or who have

occasional, transient symptoms in the summer.

Factors To Consider In The Choice Between Light Therapy And Antidepressant Medications

(note: none of these factors are absolute)

Consider light therapy as first-line when:

- Less severe depression
- Good compliance for light therapy
- Warrants non-pharmacologic treatment (e.g., pregnancy, breast feeding)
- Able and willing to make time commitment for light therapy
- Relative contraindications to drug therapy (e.g., hepatic disease, allergies)
- Intolerant to medication side effects
- Assessing costs: greater initial cost but less expensive on-going costs
- Assessing costs: light box covered by insurance?

Consider medications as first-line therapy when:

- More severe depression
- Low interest or motivation for light therapy
- Light therapy too inconvenient
- Unable to make time commitment for light therapy
- Relative contraindications to light therapy (e.g., retinal disease, photosensitizing drug)
- Intolerant to light therapy side effects
- Assessing costs: less initial cost but greater on-going costs
- Assessing costs: medications covered by insurance?

How do you manage patients who do not respond to light therapy or antidepressants?

The clinician usually differentiates between partial response and non-response. When patients are not responding, it is important to consider contributing factors such as patient compliance and unrecognized co-morbidity. In pursuing strategies for limited response, a stepwise approach with clear documentation of treatments and effects is essential.

For partial response to light therapy after two weeks of adequate treatment, there are several options to consider:

1. increasing the dose, by increasing the duration of daily light exposure to 45 minutes or one hour, or by raising the intensity of light;
2. changing the timing of light from morning to evening; or
3. adding another treatment such as L-tryptophan or antidepressants.

In patients who have no response after 2 weeks of adequate light therapy, many clinicians would switch to another treatment (e.g., antidepressants) instead of pursuing these options. For partial response to antidepressant medications after two to four weeks, the clinician can:

- 1) increase the dose of medication, or 2) add light therapy.

If these are unsuccessful then the usual pharmacologic approaches to drug-refractory depression should be considered, including adding an augmentation drug, switching to an antidepressant in a different therapeutic class, adding another antidepressant or using electroconvulsive therapy. Because of the (relatively) short winter season, these alternative strategies may need to be continued over to the next seasonal depressive episode.

Is psychotherapy effective in SAD?

Although many studies document the efficacy of short-term psychotherapies for nonseasonal depression (cognitive behavioural therapy, interpersonal therapy), there are no studies of psychotherapy in SAD. It is reasonable to assume that these treatments may also benefit those with SAD.

Recommendations: Management Issues

Recommendations: Light Therapy Or Antidepressants Or Both?

(Because of the lack of data, recommendations are based on clinical experience and panel consensus: i.e., Level 5 evidence).

1. Factors to consider when deciding on a first-line treatment include: severity of depression, side effects, safety, patient preference, patient compliance and cost.
2. Generally, one treatment should be used at a time to minimize clinical confusion about the therapeutic effects and the side effects of treatment.
3. Situations in which combined light therapy and antidepressants would be considered include: a) partial response to light therapy alone, b) partial response to antidepressants alone, c) partial response to light therapy or antidepressants in past episodes, and d) severe or treatment-refractory depression that is associated with prolonged dysfunction.

Recommendations: Length of Treatment

1. A therapeutic trial of light therapy should be at least 2 weeks in length (Level 2 evidence).
2. A therapeutic trial of antidepressants should be at least 6 weeks in length (Level 2 evidence).
3. Because of risk of relapse, patients should continue with treatment for the entire winter season, until the time of their natural spring or summer remission. Treatment is not generally recommended during the summer (Level 2 evidence).
4. When possible, antidepressants should be tapered instead of abruptly discontinued (Level 5 evidence).
5. Treatment should be restarted in the autumn, either with onset of mild symptoms, or in advance of the usual onset of symptoms (Level 5 evidence).
6. Light therapy may be helpful during the summer for occasional transient symptoms (Level 5 evidence).
7. Preventative year-round antidepressant treatment (including the summer) should be considered in situations where: a) patients are poorly compliant or motivated, b) they take a long time to taper off and on medications, c) they are unable to recognize early signs and symptoms of depression, d) they have very early onset or very late offset of symptoms, and e) they experience symptoms during the summer (Level 5 evidence).

Recommendations: Managing Limited Treatment Response

(Because of the lack of data, recommendations are based on clinical experience and panel consensus, i.e., Level 5 evidence).

1. Patients showing limited response to treatment should first be evaluated to ensure they have adequate dosing of treatment (light therapy or medications), they are compliant with treatment and they do not have unrecognized comorbid conditions.
2. Strategies for dealing with partial responses to light therapy include: increasing the dose, changing the timing and trying alternative therapies, such as 1-tryptophan augmentation or combining with antidepressants.
3. Strategies for dealing with partial responses to antidepressant medications include: increasing the dose, combining with light therapy, switching to another antidepressant, augmenting with another agent, combining other antidepressants and electroconvulsive therapy.
4. In dealing with patients with refractory illness, it is important to take a methodical, stepwise approach with clear documentation of treatments.
5. Psychological treatments, such as cognitive therapy, may be of benefit as adjunctive treatment in SAD.

Selected References

1. Bauer MS, Dunner DL: Validity of seasonal pattern as a modifier for recurrent mood disorders for DSM-IV. *Compr Psychiatry* 1993;34:159-70.
2. Eastman CI, Young MA, Fogg LF, et al: A placebo-controlled trial of bright light treatment for winter seasonal affective disorder. *Arch Gen Psychiatry* 1998; 883-9.
3. Gallin PF, Terman M, Reme CE, et al: Ophthalmologic examination of patients with seasonal affective disorder, before and after bright light therapy. *Am J Ophthalmol* 1995; 119:202-10.
4. Kasper S, Wehr TA, Bartko JJ, et al: Epidemiological findings of seasonal changes in mood and behavior. A telephone survey of Montgomery County, Maryland. *Arch Gen Psychiatry* 1989; 46:823-33.
5. Kogan AO, Guilford PM: Side effects of short-term 10,000-lux light therapy. *Am J Psychiatry* 1998; 155:293-294.

6. Lam RW (ed.): Seasonal Affective Disorder and Beyond: Light Treatment for SAD and Non-SAD Conditions. Washington DC, American Psychiatric Press, 1998.
7. Lam RW, Gorman CP, Michalon M, et al: Multicenter, placebo-controlled study of fluoxetine in seasonal affective disorder. *Am J Psychiatry* 1995; 152:1765-70.
8. Lewy AJ, Bauer VK, Cutler NL, et al: Morning vs. evening light treatment of patients with winter depression. *Arch Gen Psychiatry* 1998;55:890-6.
9. Moscovitch A, Blashko C, Wiseman R, et al: A double-blind, placebo-controlled study of sertraline in patients with seasonal affective disorder. *New Research Abstracts*, 151st Meeting of the American Psychiatric Association, 1995.
10. Rosenthal NE, Sack DA, Gillin JC, et al: Seasonal affective disorder: a description of the syndrome and preliminary findings with light therapy. *Arch Gen Psychiatry* 1984; 41:72-80.
11. Tam EM, Lam RW, Levitt AJ: Treatment of seasonal affective disorder: a review. *Can J. Psychiatry* 1995; 40:457-66.
12. Terman M, Terman JS, Ross DC: A controlled trial of timed bright light and negative air ionization for treatment of seasonal affective disorder, *Arch Gen Psychiatry* 1998; 55:875-82.
13. Terman M, Terman JS, Quitkin FM, McGrath PJ, Stewart JW, Rafferty B: Light therapy for seasonal affective disorder. A review of efficacy. *Neuropsychopharmacology* 1989; 2: 1-22.

Information Resources for SAD

Society for Light Treatment and Biological Rhythms (SLTBR).

SLTBR is an international, not-for-profit society dedicated to fostering research, professional development and clinical applications in the fields of light therapy and biological rhythms.

Contact: Stephanie Argraves, Executive Director, SLTBR
 842 Howard Avenue, New Haven, CT, USA 06519
 e-mail: sltbr@yale.edu

web site: <http://www.websciences.org/sltbr/>

(includes a list of Corporate Members that manufacture and distribute light devices)

Web Site Links

Dr. Lam's SAD Page at the University of B.C.
http://www.psychiatry.ubc.ca/mood/md_sad.html

Dr. Terman's Winter Depression Research Program at Columbia University
Includes a FAQ (Frequently Asked Questions) about SAD.
<http://www.columbia.edu/~mt12/>

Center for Environmental Therapeutics
Includes info on recent research of treatment for SAD
<http://www.cet.org/cet2000/>



67

RCE/3742 \$

PTO/SB/30 (09-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	09/710,782
Filing Date	11/13/2000
First Named Inventor	Larry V. Pederson
Art Unit	3742
Examiner Name	Daniel Leon Robinson
Attorney Docket Number	44261-4

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Rely Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☒ Affidavit(s)/ Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☐ Other _____

2. Miscellaneous

- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____

3. Fees

- The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- The Director is hereby authorized to charge the following fees, or credit any overpayments, to
- a. ☒ Deposit Account No. 02-2057
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☒ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

RECEIVED

MAY 06 2004

TECHNOLOGY CENTER R3700

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Roseann B. Caldwell	Registration No. (Attorney/Agent)	37,077
Signature		Date	April 21, 2004

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Name (Print/Type)	Roseann B. Caldwell	Date	April, 2004
Signature			

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

05/03/2004 CCHAU1 00000013 022057 09710782

01 FC:2801

385.00 DA



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: PEDERSON, Larry V. et al. Group Art Unit: 3737
Serial No.: 09/710,782 Examiner: Daniel Robertson
For: LIGHT THERAPY DEVICE

INFORMATION DISCLOSURE STATEMENT

- ☐1 Pursuant to 37 CFR 1.97(b)
 [within 3 months of filing or prior to 1st Office Action]
- ☐2 Certification Pursuant to 37 CFR 1.97(c)
 [before Final Office Action or Allowance]
- ☒3 Fee Payment Pursuant to 37 CFR 1.97(c)
 [before Final Office Action or Allowance]
- ☐4 Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d)
 [before issue fee payment]

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231,
U.S.A.

RECEIVED

Sir:

MAY 06 2004

TECHNOLOGY CENTER R3700

The following are submitted in the above-identified application in compliance with
37 CFR 1.97 & 1.98:

05/03/2004 CCHAU1 00000014 022057 09710782
01 FC:1806 180.00 DA

- ☒5 A list of documents on form PTO-1449 together with copies of each identified document and a translation or a concise explanation of each non-English language document is enclosed herewith.

This paper is submitted in accordance with:

- ☐6 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]

- ☒7 37 CFR 1.97(c): [before Final Office Action or Allowance, whichever is earlier]; and

- ☐8 The required certification made in item 11 below; or

- ☒9 The \$180.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement is authorized in item 14 below.

- ☐10 37 CFR §1.97(d): [before issue fee payment]; and

- (a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$130.00) required by 37 CFR 1.17(i)(1) is authorized in item 14 below. (Direct this letter to: "Attention PETITIONS EXAMINER" and if applicable include batch locator information: e.g. "Allowed Files, Batch _____, Date of Allowance _____"); and

- (b) The required Certification is stated in item 11 below.

- ☐11 Certification

- ☐12 Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or

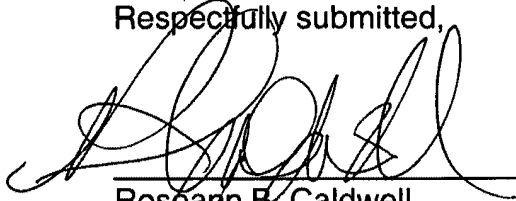
☐13

No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this document after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.

☒14

Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. 02-2057. An original and two (2) copies of this document are enclosed.

Respectfully submitted,



Roseann B. Caldwell
Reg. No. 37,077

Bennett Jones LLP
Suite 4500
855 - 2nd Street S.W.
Calgary, Alberta
CANADA T2P 4K7

(403) 298-3661

Date: April 28/04



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: PEDERSON, Larry V. et al. Group Art Unit: 3737
Serial No.: 09/710,782 Examiner: Daniel Robertson
For: LIGHT THERAPY DEVICE

INFORMATION DISCLOSURE STATEMENT

- ☐1 Pursuant to 37 CFR 1.97(b)
[within 3 months of filing or prior to 1st Office Action]
- ☐2 Certification Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☒3 Fee Payment Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☐4 Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d)
[before issue fee payment]

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231,
U.S.A.

RECEIVED

MAY 06 2004

Sir:

TECHNOLOGY CENTER R3700

The following are submitted in the above-identified application in compliance with
37 CFR 1.97 & 1.98:

- ☒5 A list of documents on form PTO-1449 together with copies of each identified document and a translation or a concise explanation of each non-English language document is enclosed herewith.

This paper is submitted in accordance with:

- ☐6 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]

- ☒7 37 CFR 1.97(c): [before Final Office Action or Allowance, whichever is earlier]; and

- ☐8 The required certification made in item 11 below; or

- ☒9 The \$180.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement is authorized in item 14 below.

- ☐10 37 CFR §1.97(d): [before issue fee payment]; and

- (a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$130.00) required by 37 CFR 1.17(i)(1) is authorized in item 14 below. (Direct this letter to: "Attention PETITIONS EXAMINER" and if applicable include batch locator information: e.g. "Allowed Files, Batch _____, Date of Allowance _____"); and

- (b) The required Certification is stated in item 11 below.

- ☐11 Certification

- ☐12 Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or

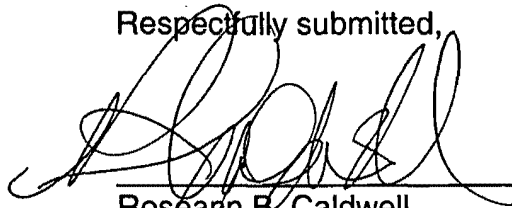
☐13

No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this document after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.

☒14

Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. 02-2057. An original and two (2) copies of this document are enclosed.

Respectfully submitted,



Roseann B. Caldwell
Reg. No. 37,077

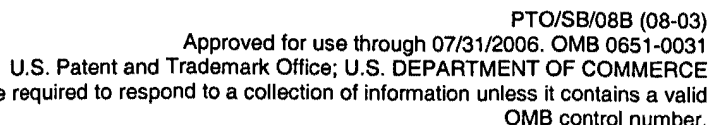
COPY

Bennett Jones LLP
Suite 4500
855 - 2nd Street S.W.
Calgary, Alberta
CANADA T2P 4K7

(403) 298-3661

Date:

April 28/04

[illegible]

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
 1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: C mmissioner for Pat nts, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). The first artifact folder for an artifact type receives the letter A, the second B, etc..

Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

09710782 ZB

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

☐

CD(s) containing:

computer program listing

Doc Code: Computer

pages of specification

and/or sequence listing

and/or table

Doc Code: Artifact

content unspecified or combined

Doc Code: Artifact

☐

Artifact Type Code: P

☐

Artifact Type Code: S

☐

Artifact Type Code: U

☐

Stapled Set(s) Color Documents or B/W Photographs

Doc Code: Artifact Artifact Type Code: C

☐

Microfilm(s)

Doc Code: Artifact Artifact Type Code: F

☐

Video tape(s)

Doc Code: Artifact Artifact Type Code: V

☐

Model(s)

Doc Code: Artifact Artifact Type Code: M

☐

Bound Document(s)

Doc Code: Artifact Artifact Type Code: B

☐

Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.

Doc Code: Artifact Artifact Type Code: X

☒

Other, description:

A BOOK

Doc Code: Artifact Artifact Type Code: Z



UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

08/24/2004

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 08/24/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

TITLE OF INVENTION: LIGHT THERAPY DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$665	\$0	\$665	11/24/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (703) 746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 08/24/2004

Bennett Jones LLP
 4500 Bankers Hall East
 855 2nd Street SW
 Calgary, AB T2P 4K7
 CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

TITLE OF INVENTION: LIGHT THERAPY DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$665	\$0	\$665	11/24/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
ROBINSON, DANIEL LEON	3742	607-088000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. _____
 2. _____
 3. _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

7590

08/24/2004

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 08/24/2004

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 286 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 286 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

7590

08/24/2004

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 08/24/2004

Notice of Fee Increase on October 1, 2004

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after October 1, 2004, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" because an increase in fees effective on October 1, 2004 is anticipated. See Revision of Patent Fees for Fiscal Year 2005; Proposed Rule, 69 Fed. Reg. 25861, 25863, 25864 (May 10, 2004).

The current fee schedule is accessible from WEB site (<http://www.uspto.gov/main/howtofees.htm>).

If the fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due" but not the correct amount in view of the fee increase, a "Notice of Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice of Pay Balance of Issue Fee," if the response to the Notice of Allowance is to be filed on or after October 1, 2004 (or mailed with a certificate of mailing on or after October 1, 2004), the issue fee paid should be the fee that is required at the time the fee is paid. See Manual of Patent Examining Procedure (MPEP), Section 1306 (Eighth Edition, Rev. 2, May 2004). If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously-paid issue fee should be paid. See MPEP Section 1308.01.

Effective October 1, 2004, 37 CFR 1.18 is proposed to be amended by revising paragraphs (a) through (c) to read as set forth below. As stated above, the final fee may be a different amount, and applicant should check the WEB site given above when paying the fee.

Section 1.18 Patent post allowance (including issue) fees.

- (a) Issue fee for issuing each original or reissue patent, except a design or plant patent:
- By a small entity (Sec. 1.27(a))..... \$670.00
 - By other than a small entity..... \$1,340.00
- (b) Issue fee for issuing a design patent:
- By a small entity (Sec. 1.27(a))..... \$245.00
 - By other than a small entity..... \$490.00
- (c) Issue fee for issuing a plant patent:
- By a small entity (Sec. 1.27(a))..... \$325.00
 - By other than a small entity..... \$650.00

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

09/710,782

Examiner

Daniel I. Robinson

Applicant(s)

PEDERSON ET AL

Art Unit

3742

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

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

1. ☒ This communication is responsive to interview of 8-17-2004.
2. ☒ The allowed claim(s) is/are 1-4, 6-24 and 26-36.
3. ☒ The drawings filed on 03 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

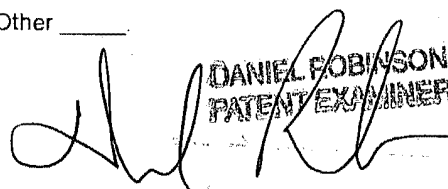
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4-30-2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


DANIEL ROBINSON
PATENT EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Roseanne Caldwell on 8-18-2004.

The application has been amended as follows:

Claim 1 line 2 after "opening" insert ---a first member and a second member, the first member and the second member being releasably locked together and ---

Claim 1 line 5 after "12 inches" insert ---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 line 2 after "opening" insert ---, a base and an upper member pivotally connected to the base; and---

Claim 19 line 3 after "assembly" insert ---mounted---

Claim 19 line 3 after "'in" insert ---the upper member of the---

Art Unit: 3742

Claim 28 line 2 after “including”(first appearance) insert ---a first member with---
line 2 after “opening” insert ---and a second member releasably
lockable to the first member---

line 2 delete “including”(second appearance) and insert therein ---
forming---

line 4 after “assembly in the” insert ---first member of the housing---

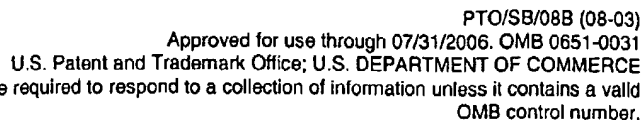
Claims 5 and 25 are cancelled.

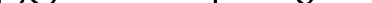
Allowable Subject Matter

Claims 1-36 are allowed.

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

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

[illegible]

Examiner Signature		Date Considered	8-18-2004
-----------------------	---	--------------------	-----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: C ommissioner for Pat nts, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Interview Summary	Application No.		Applicant(s)	
	09/710,782		PEDERSON ET AL.	
	Examiner		Art Unit	
	Daniel I. Robinson		3742	

All participants (applicant, applicant's representative, PTO personnel):

(1) Daniel I. Robinson. (3)_____.

(2) Roseann Caldwell. (4)_____.

Date of Interview: 8-17-2004.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.
If Yes, brief description: _____.

Claim(s) discussed: 1 and 19.

Identification of prior art discussed: _____.

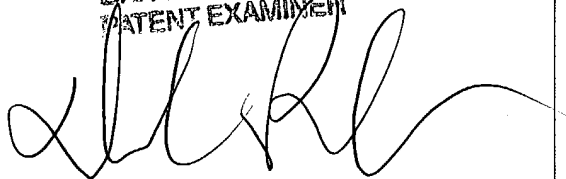
Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Insertion of subject matter from claims 5 and 25 into independent claims 1, 19 and 28.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

DANIEL ROBINSON
PATENT EXAMINER



Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

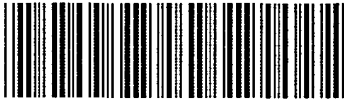
A complete and proper recordation of the substance of any interview should include at least the following applicable items:

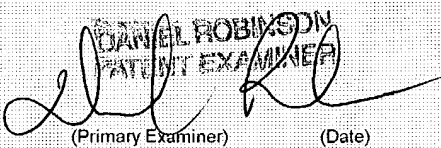
- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Issue Classification 	Application No.	Applicant(s)	
	09/710,782	PEDERSON ET AL.	
	Examiner	Art Unit	
	Daniel I. Robinson	3742	

ISSUE CLASSIFICATION									
ORIGINAL				CROSS REFERENCE(S)					
CLASS	SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
607	88			607	90				
INTERNATIONAL CLASSIFICATION									
A61N	/								
	/								
	/								
	/								
	/								
(Assistant Examiner) (Date)				 DANIEL ROBINSON PATENT EXAMINER (Primary Examiner) (Date)				Total Claims Allowed: 34	
(Legal Instruments Examiner) (Date)								O.G. Print Claim(s) 1,19	

☒ Claims renumbered in the same order as presented by applicant										☐ CPA		☐ T.D.		☐ R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181		
	2		32		62		92		122		152		182		
	3		33		63		93		123		153		183		
	4		34		64		94		124		154		184		
	5		35		65		95		125		155		185		
	6		36		66		96		126		156		186		
	7		37		67		97		127		157		187		
	8		38		68		98		128		158		188		
	9		39		69		99		129		159		189		
	10		40		70		100		130		160		190		
	11		41		71		101		131		161		191		
	12		42		72		102		132		162		192		
	13		43		73		103		133		163		193		
	14		44		74		104		134		164		194		
	15		45		75		105		135		165		195		
	16		46		76		106		136		166		196		
	17		47		77		107		137		167		197		
	18		48		78		108		138		168		198		
	19		49		79		109		139		169		199		
	20		50		80		110		140		170		200		
	21		51		81		111		141		171		201		
	22		52		82		112		142		172		202		
	23		53		83		113		143		173		203		
	24		54		84		114		144		174		204		
	25		55		85		115		145		175		205		
	26		56		86		116		146		176		206		
	27		57		87		117		147		177		207		
	28		58		88		118		148		178		208		
	29		59		89		119		149		179		209		
	30		60		90		120		150		180		210		

SEARCHED			
Class	Sub.	Date	Exmr.
607	88 89 90 91 92 93 94 95		
602	2	1-24-2003 PCL	
	Searches done 1-2-2003 F-18-2004		

INTERFERENCE SEARCHED			
Class	Sub.	Date	Exmr.
	Searches done 11-24-2000 F-18-2004		

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	Date	Exmr.
Consulted with Lt. Col. Dionne + Lee Cohen + Dionne Bates		
Plus results East		
JPO, EPO Perman USPTO/East		
Foreign Priority to 3/14/2000 Canada 2,300,569		

BEST AVAILABLE COPY

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

PA-1DC

QUERY CONTROL FORM		RTIS USE ONLY	
Application No. <u>09/710782</u>	Prepared by <u>BJU</u>	Tracking Number <u>6004944</u>	
Examiner-GAU <u>ROBINSON-3742</u>	Date <u>9/10/04</u>	Week Date <u>8/30/04</u>	
	No. of queries <u>1</u>	IFW	

JACKET			
a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449
b. Applicant(s)	g. Disclaimer	l. Print Fig.	q. PTOL-85b
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other

SPECIFICATION	MESSAGE
a. Page Missing	<u>Claims - Improper Dependency:</u> <u>Original Claim 6 (now Claim 5)</u> <u>depends on original Claim 5</u> <u>which is cancelled. Please Advise</u>
b. Text Continuity	
c. Holes through Data	
d. Other Missing Text	
e. Illegible Text	
f. Duplicate Text	
g. Brief Description	
h. Sequence Listing	
i. Appendix	
j. Amendments	
k. Other	
CLAIMS	
a. Claim(s) Missing	
<u>b. Improper Dependency</u>	
c. Duplicate Numbers	
d. Incorrect Numbering	
e. Index Disagrees	
f. Punctuation	
g. Amendments	
h. Bracketing	
i. Missing Text	
j. Duplicate Text	
k. Other	
	Thank You initials <u>BJ</u>
	RESPONSE
	initials



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

7590

09/28/2004

Bennett Jones LLP
4500 Bankers Hall East
855 2nd Street SW
Calgary, AB T2P 4K7
CANADA

EXAMINER

ROBINSON, DANIEL LEON

ART UNIT PAPER NUMBER

3742

DATE MAILED: 09/28/2004

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

Supplemental Notice of Allowability

Application No.	Applicant(s)	
09/710,782	PEDERSON ET AL.	
Examiner	Art Unit	
Daniel I. Robinson	3742	

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

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

1. ☒ This communication is ~~responsive to~~ supplemental to The Notice of allowability.
2. ☒ The allowed claim(s) is/are 1-4, 6-24 and 26-36.
3. ☒ The drawings filed on 7-3-2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

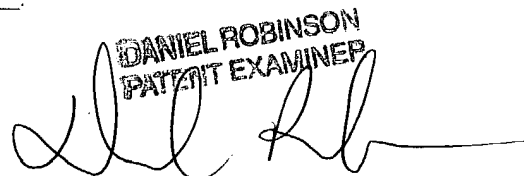
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Notice of Informal Patent Application (PTO-152) |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. ☐ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☐ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other _____ |

DANIEL ROBINSON
PATENT EXAMINER



Art Unit: 3742

EXAMINER'S AMENDMENT

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In original claim 6 line 1, delete "claim 5" and insert ---claim 1---

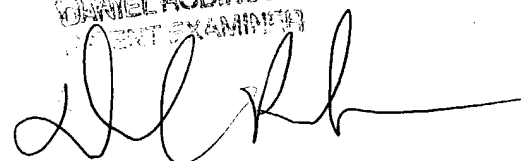
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel I. Robinson whose telephone number is 703 306-9043.

The examiner can normally be reached on M-F 5:30am-2:30pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dlr

DANIEL ROBINSON
PATENT EXAMINER


PA-1DC

QUERY CONTROL FORM		RTIS USE ONLY	
Application No. <u>09/710782</u>	Prepared by <u>Bju</u>	Tracking Number <u>6004944</u>	
Examiner-GAU <u>ROBINSON-3742</u>	Date <u>9/10/04</u>	Week Date <u>8/30/04</u>	
	No. of queries <u>1</u>	IFW	

JACKET			
a. Serial No.	f. Foreign Priority	k. Print Claim(s)	p. PTO-1449
b. Applicant(s)	g. Disclaimer	l. Print Fig.	q. PTOL-85b
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other

SPECIFICATION	MESSAGE	
a. Page Missing	<u>Claims - Improper Dependency:</u> <u>Original Claim 6 (now Claim 5)</u> <u>depends on original Claim 5</u> <u>which is cancelled. Please Advise</u>	
b. Text Continuity		
c. Holes through Data		
d. Other Missing Text		
e. Illegible Text		
f. Duplicate Text		
g. Brief Description		
h. Sequence Listing		
i. Appendix		
j. Amendments		
k. Other		
CLAIMS a. Claim(s) Missing b. Improper Dependency c. Duplicate Numbers d. Incorrect Numbering e. Index Disagrees f. Punctuation g. Amendments h. Bracketing i. Missing Text j. Duplicate Text k. Other		
RESPONSE Thank You initials <u>BG</u>		
initials		



3737
IFW/92
Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: PEDERSON, Larry V. et al. Group Art Unit: 3737
Serial No.: 09/710,782 Examiner: Daniel Robertson
For: LIGHT THERAPY DEVICE

INFORMATION DISCLOSURE STATEMENT

- ☐1 Pursuant to 37 CFR 1.97(b)
[within 3 months of filing or prior to 1st Office Action]
- ☐2 Certification Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☐3 Fee Payment Pursuant to 37 CFR 1.97(c)
[before Final Office Action or Allowance]
- ☒4 Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d)
[before issue fee payment]

Honorable Commissioner of Patents and Trademarks,
Washington, D.C. 20231,
U.S.A.

Attention: Petitions Examiner

Sir:

The following are submitted in the above-identified application in compliance with
37 CFR 1.97 & 1.98:

[XX]5 A list of documents on form PTO-1449 together with copies of each identified document and a translation or a concise explanation of each non-English language document is enclosed herewith.

This paper is submitted in accordance with:

[]6 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]

[]7 37 CFR 1.97(c): [before Final Office Action or Allowance, whichever is earlier]; and

[]8 The required certification made in item 11 below; or

[]9 The \$180.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement is authorized in item 14 below.

[XX]10 37 CFR §1.97(d): [before issue fee payment]; and

(a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$130.00) required by 37 CFR 1.17(i)(1) is authorized in item 14 below; and

(b) The required Certification is stated in item 11 below.

[XX]11 Certification

[XX]12 Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or

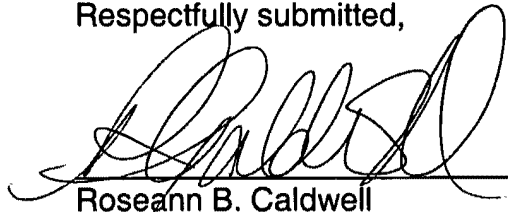
[]13 No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this document after

making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.

[XX]14

Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. 02-2057. An original and two (2) copies of this document are enclosed.

Respectfully submitted,



Roseann B. Caldwell
Reg. No. 37,077

Bennett Jones LLP
Suite 4500
855 - 2nd Street S.W.
Calgary, Alberta
CANADA T2P 4K7

(403) 298-3661

Date: Oct 5/04

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

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1
-------	---	----	---

Complete if Known

Application Number	09/710,782
Filing Date	11/13/2000
First Named Inventor	Pederson
Art Unit	3742
Examiner Name	Robinson
Attorney Docket Number	44261-4

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Summary paragraph of German DE 296 00 470

A face mask is described in the document. In Figure 2 the inside of the face mask is depicted (that is, the side of the mask facing the user's face when the device is being used). The face-mask is covered with a multitude of high-powered LEDs (2) that can produce variable colours of light. The lighting elements (2) are positioned in columns, with the distance between the columns being greater than the distance between individual lighting elements between the columns. However, the lighting elements can be organized/grouped in other formations or patterns.



①9 BUNDESREPUBLIK
DEUTSCHLAND



DEUTSCHES
PATENTAMT

⑫ **Gebrauchsmuster**
⑩ **DE 296 00 470 U 1**

⑪ Aktenzeichen: 296 00 470.7
⑫ Anmeldetag: 12. 1. 96
⑬ Eintragungstag: 4. 4. 96
⑭ Bekanntmachung
im Patentblatt: 15. 5. 96

⑮ Int. Cl. 6:
A 61 N 5/06
A 61 N 7/00
H 01 T 23/00
A 63 J 17/00
H 05 K 1/02
A 41 G 7/02

DE 296 00 470 U 1

⑰ Inhaber:
Lenke, Michael, 94469 Deggendorf, DE; Bradl,
Ingrid, 94469 Deggendorf, DE

⑱ Vertreter:
Kuhnen, Wacker & Partner, Patent- und
Rechtsanwälte, 85354 Freising

⑳ Farblichtbehandlungsgerät

DE 296 00 470 U 1



Beschreibung

Farblichtbehandlungsgerät

5

Die Erfindung bezieht sich auf ein Farblichtbehandlungsgerät, insbesondere in Form einer Gesichtsmaske.

Farblichtbehandlungsgeräte sind bekannt, bei denen eine
10 Mehrzahl von Leuchtelementen, die vorzugsweise unterschiedliche Farben erzeugen können, vorgesehen sind. Mit diesen Farblichtbehandlungsgeräten lassen sich aufgrund der Wechselwirkung zwischen dem Farblicht und dem Organismus sowie der Psyche des Benutzers positive Wirkungen erzielen, z.B.
15 eine psychische Entspannung oder Erhöhung der Konzentrationsfähigkeit oder auch positive körperliche Reaktionen wie etwa Schmerzverringering, Heilungsförderung und dgl.

Der Erfindung liegt die Aufgabe zugrunde, ein
20 Farblichtbehandlungsgerät zu schaffen, mit dem sich eine Verbreiterung des Wirkungsspektrums und/ oder eine Erhöhung der Gebrauchsfähigkeit erzielen läßt.

Diese Aufgabe wird mit in den Ansprüchen angegebenen
25 Merkmalen gelöst.

Gemäß Anspruch 1 ist das Farblichtbehandlungsgerät mit mindestens einem Lautsprecher versehen. Zusätzlich zur optischen Wirkung läßt sich somit eine akustische Beeinflussung hervorrufen, durch die die psychische und/oder körperliche Wirkung noch weiter erhöht werden kann, insbesondere der erzielbare Entspannungsgrad noch weiter verstärkt werden kann.
30

Vorzugsweise sind zwei Lautsprecher in den seitlichen Bereichen des Farblichtbehandlungsgeräts angebracht, so daß sie bei Ausgestaltung als Gesichtsmaske in direkter Nähe zu
35



den Ohren des Anwenders liegen und damit direkt auf diesen einwirken können. Zugleich wird hierdurch auch eine gewisse Abschirmung der Umgebungsgeräusche erzielt, was die Tiefe der Entspannung noch weiter positiv fördert.

5

Zum Anschluß des Farblichtbehandlungsgeräts an einen externen Tongenerator, z.B. ein CD-Abspielgerät, einen Kassettenrecorder oder dgl., ist in bevorzugter Ausgestaltung eine Audioeingangsbuchse am Farblichtbehandlungsgerät vorgesehen, über die die Ton- oder Geräuschsignale zuführbar sind.

Zusätzlich oder alternativ kann das Farblichtbehandlungsgerät aber auch mit einem eingebauten Tongenerator versehen sein, durch den gewünschte Tonfolgen oder Geräusche wiedergebar sind. Der Tongenerator kann durch ein oder mehrere Mikrochip gebildet sein, in denen gewünschte Tonfolgen gespeichert sind. Diese Tonfolgen oder Geräusche lassen sich vorzugsweise schleifenförmig endlos auslesen, so daß keine störenden Pausen auftreten und dennoch der Speicherplatzbedarf beschränkt sein kann.

Alternativ oder zusätzlich kann das Farblichtbehandlungsgerät auch mit einer Ionisationseinrichtung versehen sein, so daß die Luft ionisiert werden kann. Hierdurch läßt sich zugleich auch eine gewisse Luftreinigung erreichen, so daß die eingeatmete Luft etwas sauberer wird. In bevorzugter Ausgestaltung ist die Ionisationseinrichtung mit mindestens einer, vorzugsweise zwei beabstandeten, Nadeln versehen, an die eine Ionisationsspannung angelegt wird und die somit aufgrund ihrer nadelförmigen Gestalt wirksam das Ionisationsfeld aufbauen. Bevorzugt sind diese Ionisationsnadeln in der Nähe der Nase des Anwenders angeordnet, so daß der Effekt auf die Atemluft maximal ist. Der Ionisationsgenerator kann extern vorgesehen sein, ist aber bevorzugt in dem Farblichtbehandlungsgerät angeordnet, so daß das Farblichtbehandlungsgerät in einfacher Weise mit einer han-



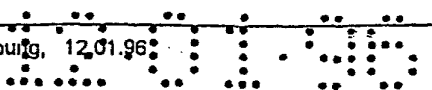
delsüblichen Stromversorgung, beispielsweise einem handelsüblichen Netztransformator, verbunden werden kann.

Zum mechanischen Schutz der Nadeln sind diese vorzugsweise in Vertiefungen des Farblichtbehandlungsgeräts angeordnet, was zugleich die Beschädigungsgefahr der Nadeln verringert als auch die Verletzungsgefahr durch unbeabsichtigtes Berühren der Nadelspitzen drastisch verkleinert. Alternativ können die Nadeln auch von Schutzringen umgeben sein, die auf dem Farblichtbehandlungsgerät aufgebracht sind. Durch Anordnung der Ionisationsnadeln im mittleren Bereich läßt sich gewährleisten, daß die Ionisationswirkung automatisch in den Nasenbereich des Anwenders eingebracht wird, wenn das Farblichtbehandlungsgerät aufgesetzt wird.

Alternativ oder vorzugsweise zusätzlich ist ein Aromastoffhalter für die Aufnahme von Aromastoffen bzw. Duftstoffen vorgesehen. Es läßt sich somit bei gemeinsamer Anordnung aller vier Komponenten eine vierfache Wirkung erzielen, nämlich eine Lichtbehandlung, eine akustische Beeinflussung, eine Luftionisierung und eine Aromabeeinflussung. Dadurch lassen sich optimale Effekte hinsichtlich Konzentrationsverbesserung, Leistungssteigerung, Allergiebekämpfung, Entspannungswirkung usw. erzielen.

In bevorzugter Ausgestaltung ist der Aromastoffhalter mit einer Heizeinrichtung versehen, so daß eine gezielte Erwärmung möglich ist, was die Verflüchtigung des Aromastoffs und damit den Wirkungsgrad der Aromabehandlung fördert. Der Aromastoffhalter kann topfförmig ausgestaltet sein, wobei es möglich ist, ihn entweder fest und dauerhaft zu installieren oder z.B. durch Klemmen austauschbar zu halten.

Das Farblichtbehandlungsgerät weist vorzugsweise langgestreckte Gestalt auf und ist insbesondere in der Form einer Gesichtsmaske ausgebildet. Hierdurch läßt sich das



Farblichtbehandlungsgerät direkt auf das Gesicht des Anwen-
ders aufbringen, so daß die optische, akustische, ionisie-
rende und/ oder aromatische Beeinflussung in nächster Nähe
zu den jeweiligen Sinnesorganen und Rezeptoren stattfindet.

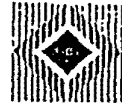
5 Hierdurch läßt sich die Wirksamkeit stark heraufsetzen. Zu-
gleich werden störende Umgebungseinflüsse wirksam ausge-
blendet.

10 Wenn die Gesichtsmaske im Liegen angewendet wird, ist
sie selbsthaltend. Um eine Benutzung auch im Sitzen oder
Stehen zu ermöglichen, kann die Gesichtsmaske mit einer zu-
sätzlichen Halterung zur Halterung am Kopf, z.B. in Form
eines die Kopfrückseite überspannenden, an den beiden Sei-
tenbereichen der Maske befestigten Halteriemens versehen
15 sein.

Die Gesichtsmaske besitzt vorzugsweise eine der durch-
schnittlichen Gesichtskontur angepaßte Form, d. h. ist ge-
krümmt ausgestaltet. Vorzugsweise ist der mittlere Bereich
20 der Gesichtsmaske steif ausgebildet. Alternativ ist es auch
möglich, die seitlichen Bereiche der Maske gleichfalls,
oder auch lediglich allein diese, steif auszubilden.

25 Zur Einstellung der Gesichtsmaske auf unterschiedliche
Gesichtsbreiten ist die Gesichtsmaske vorzugsweise in sich
beweglich, was dadurch erreicht werden kann, daß der mitt-
lere Bereich beweglich mit den Seitenbereichen verbunden
ist und/ oder plastisch verformbare Bereiche vorhanden
sind. Diese Bereiche können als Gelenkbereiche ausgestaltet
30 sein und/ oder als Sollbiegebereiche ausgelegt sein.

Vorzugsweise ist die Innenseite der Maske zumindest
partiell mit einer transparenten Abdeckung versehen, die
einerseits den Lichtdurchtritt ermöglicht und andererseits
35 einen Schutz der Leuchtelemente bewirkt.



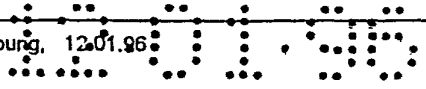
Weiterhin kann im Innern der Gesichtsmaske ein Elektroniksubstrat zur Aufnahme aller oder eines Teils der notwendigen Schaltungselemente zur Ansteuerung der elektrisch betriebenen Komponenten vorgesehen sein. Das Elektroniksubstrat kann insbesondere flexibel ausgestaltet sein, so daß es eine beabsichtigte Verformung der Gesichtsmaske nicht übermäßig hemmt.

Zur stabilen Halterung der Lautsprecher können diese von einem eigenen Trägersubstrat gehalten werden, das seinerseits in der Gesichtsmaske untergebracht ist und vorzugsweise separat vom Elektroniksubstrat vorgesehen ist. Hierdurch wird das Elektroniksubstrat von der Funktion der Halterung der Lautsprecher entlastet. Es ist jedoch ebenfalls möglich, ein einheitliches Substrat vorzusehen, das sowohl die elektrischen und/oder elektronischen Bauteile als auch die Lautsprecher und die sonstigen Komponenten trägt.

Zur Bedienung der einzelnen Funktionen der Gesichtsmaske sind vorzugsweise Betätigungselemente vorhanden, die insbesondere auf der Vorderseite der Gesichtsmaske angebracht sind und ggf. zusätzlich oder alternativ auch eine Auswahl der Betriebsparameter, z.B. der Licht-Impulsfrequenz, der Ionisationsstärke, der Lautstärke und/ oder der Aromaintensität ermöglichen.

Die Gesichtsmaske kann auch insgesamt starr ausgebildet sein, was die Herstellbarkeit vereinfacht und die Herstellungskosten verringert.

Zur zuverlässigen Halterung der Maske am Kopf kann an der Gesichtsmaske ein Haltebügel, vorzugsweise einrastbar, angebracht sein.



Die Erfindung wird nachstehend anhand von Ausführungsbeispielen unter Bezugnahme auf die Zeichnungen näher erläutert.

5 Fig. 1 zeigt eine schematische Darstellung eines Ausführungsbeispiels des Farblichtbehandlungsgeräts in Form einer Gesichtsmaske, die von einer Anwenderin während der Behandlung getragen wird,

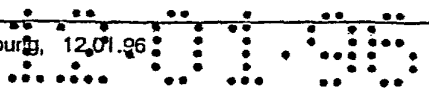
10 Fig. 2 zeigt eine Ansicht der Innenseite des Farblichtbehandlungsgeräts, d.h. der während der Behandlung auf den Anwender gerichteten Seite,

15 Fig. 3 zeigt einen schematischen Längsquerschnitt durch das Farblichtbehandlungsgerät und

Fig. 4 zeigt eine Draufsicht auf die Vorderseite des Ausführungsbeispiels, d.h. auf die der Ansicht gemäß Fig. 2 gegenüberliegende Seite.

20 In Fig. 1 ist schematisch ein Ausführungsbeispiel des Farblichtbehandlungsgeräts 1 in Form einer Gesichtsmaske in aufgesetztem Zustand gezeigt. Wie aus Fig. 1 ersichtlich ist, besitzt das Farblichtbehandlungsgerät eine langgestreckte, gebogene Gestalt, die auf den Augenbereich der Trägerin/ des Trägers aufgesetzt wird und bis zu den Ohren reicht. Bei dem dargestellten Ausführungsbeispiel besitzt die Gesichtsmaske die Form eines gebogenen, langgestreckten Rechtecks mit einer Breite zwischen 5 und 15 cm, vorzugsweise zwischen 7 und 10 cm, und einer Länge von 20 bis 40 cm, vorzugsweise ungefähr 30 bis 35 cm. Selbstverständlich können die Eckbereiche der Gesichtsmaske auch abgerundet sein und es kann die Gesichtsmaske im mittleren unteren Bereich, d.h. im Nasenbereich etwas nach außen gewölbt sein, um Raum für die Aufnahme der Nase bereitzustellen.

25
30
35



Die Krümmung der Gesichtsmaske ist dergestalt, daß die Seitenbereiche im engen Abstand zu den Ohren liegen, während der mittlere Bereich direkt über den Augen verläuft. Vorzugsweise ist die Gesichtsmaske zumindest teilweise flexibel plastisch verformbar und kann damit an die Gesichtsf

5 form des jeweiligen Trägers angepaßt werden.

In Fig. 2 ist die Innenseite der Gesichtsmaske 1 dargestellt, d.h. diejenige Seite, die im aufgesetzten Zustand dem Anwender zugewandt ist. Die Gesichtsmaske 1 ist mit einer Vielzahl von Leuchtelementen 2 in Form von Hochleistungs-LEDs oder Laserdioden versehen, die vorzugsweise Licht unterschiedlicher Farbe erzeugen, d.h. rotes Licht, grünes Licht, blaues Licht und/oder gelbes Licht. Bei dem

10 gezeigten Ausführungsbeispiel sind die Leuchtelemente 2 in Spalten und Zeilen angeordnet, wobei zwischen den Spalten größerer Abstand vorliegt als zwischen den einzelnen Leuchtelementen 2 innerhalb einer Spalte. Allerdings können die Leuchtelemente auch in anderer Form, z.B. wabenförmig

15 oder rautenförmig angeordnet sein.

20

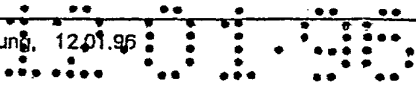
An den seitlichen Bereichen der Gesichtsmaske 1 sind zwei Lautsprecher 3 angeordnet, deren Abstrahlungsrichtung nach innen, d.h. bei aufgesetzter Gesichtsmaske 1 auf die

25 Ohren des Trägers orientiert ist.

In Fig. 3 ist ein Längsquerschnitt durch das Farblichtbehandlungsgerät 1 gezeigt. Wie ersichtlich ist, ist die Gesichtsmaske in Anpassung an die durchschnittliche Kopfwölbung gekrümmt ausgelegt und besitzt auf der im Benutzungszustand auf den Anwender gerichteten Seite eine transparente Abdeckung 4 in Form einer gebogenen, durchsichtigen, vorzugsweise aus Kunststoff bestehenden Schicht, die das von den Leuchtelementen 2 erzeugte Licht zu den Augen

30 und/oder der Haut des Anwenders durchläßt. Die transparente Abdeckung 4 befindet sich zumindest teilweise mit den Hautbereichen des Anwenders in Berührung und besteht daher aus

35



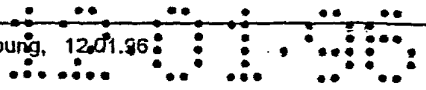
hautverträglichem Material. Die Dicke der transparenten Abdeckung 4 liegt zwischen Bruchteilen von Millimetern und mehreren Millimetern, vorzugsweise zwischen 1 bis 5 mm und kann somit der Gesichtsmaske 1 eine gewisse Festigkeit verleihen, die aber die zur Anpassung an die jeweilige Gesichtsförm erforderliche Flexibilität nicht beeinträchtigt.

Die Gesichtsmaske 3 ist auch auf der der transparenten Abdeckung 4 gegenüberliegenden Seite mit einer Überzugsschicht 5 versehen.

Im Innern der Gesichtsmaske ist weiterhin eine gebogene, steife oder vorzugsweise auch flexible Elektronikplatine 6 vorgesehen, auf der die notwendigen elektrischen/elektronischen Schaltungsbauelemente montiert sind. Zugleich kann die Platine 6 auch als Träger und Halterung für die Leuchtdioden 2 dienen und die für deren Ansteuerung erforderliche Stromzuleitungen tragen. Die Platine 6 kann ferner als mechanische Halterung für die in den Seitenbereichen angeordneten Lautsprecher 3 dienen. Alternativ können die Lautsprecher 3 auch unabhängig von der Elektronikplatine in der Gesichtsmaske eingebettet sein oder durch in der Gesichtsmaske eingelagerte Lautsprecher-Halterungssubstrate abgestützt sein.

Auf der Vorderseite, d.h. auf der Seite der Überzugsschicht 5, ist weiterhin eine Mehrzahl von Funktionsschaltern 7 vorgesehen, die in Fig. 4 in Draufsicht gezeigt sind.

Ferner ist das Farblichtbehandlungsgerät 1 mit einem integrierten Ionisationsgerät versehen und weist zwei Ionisationsnadeln 8 auf, die auf der Seite der Überzugsschicht nach außen vorstehen oder auch versenkt angeordnet sind. Die Ionisationsnadeln 8 können ebenfalls an der Platine 6 gehalten sein oder durch ein eigenes Trägersubstrat abgestützt sein. Die Ionisationsnadeln 8 sind derart angeord-



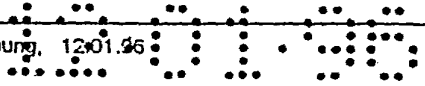
net, daß sie im Benutzungszustand nahe bei den Nasenöffnungen der Anwenderin/ des Anwenders positioniert sind, wie dies aus Fig. 1 ersichtlich ist. Die bringt den Vorteil, daß die Ionisationswirkung direkt im Nasenbereich der die
5 Gesichtsmaske tragenden Person wirksam ist.

In Fig. 4 ist die Gesichtsmaske in Draufsicht, d.h. von der Seite der Überzugsschicht 5 her gesehen, dargestellt. Wie aus der Draufsicht ersichtlich ist, sind die Funktions-
10 schalter 7 zur Ein/ Ausschaltung der Gesamtfunktion der Gesichtsmaske, zur Auswahl eines Lichtimpulsbetriebs, ggf. einer Pulsfrequenzwahl, zur Ein/ Ausschaltung des Tongenerators und/ oder der Lautsprecher und zur Einschaltung des Ionisationsgeräts vorgesehen. Weiterhin kann auch die Laut-
15 stärke gewählt werden.

Darüber hinaus ist die Gesichtsmaske mit einem Audioeingang 9 versehen, in dem ein üblicher Audiostecker zur Einspeisung eines Tonsignals einsteckbar ist. Ferner ist
20 zur Stromversorgung eine Spannungsbuchse 10 vorhanden, in die beispielsweise der Spannungsstecker des Ausgangs eines Netztransformators mit einer Gleichspannung von 6 bis 9 V oder einem anderen geeigneten Wert einsteckbar ist.

25 Im folgenden werden weitere Einzelheiten und alternative Ausgestaltungen des erfindungsgemäßen Farblichtbehandlungsgeräts 1 erläutert.

Die Bedienelemente 7 enthalten zur Steuerung der Licht-
30 bestrahlung neben dem Ein/ Aus-Schalter, durch den die gesamte Ansteuerung der Leuchtelemente 2 insgesamt ein- und ausschaltbar ist, einen Impulswählschalter zur Wahl einer gewünschten festen Frequenz ("pulse"-Schalter) und auch einen "bioPulse"-Schalter zur Steuerung des Rhythmus des
35 Blinkbetriebs der Leuchtelemente 2 entsprechend dem Körper-
rhythmus. Hierzu kann z.B. ein Herzschlagsensor vorgesehen sein, der beispielsweise in Form eines Ohrläppchensensors



zur Erfassung der Durchblutung des Ohrläppchens und damit des Herzschlags ausgebildet ist. Dieser Sensor ist an die Gesichtsmaske 1 anschließbar, die die von ihm empfangenen Signale auswertet und zur Steuerung des Blinkbetriebs der Leuchtelemente 2 umsetzt.

Alle Bedienelemente (Tasten) 7 sind auch im Betrieb gut fühlbar, d.h. setzten sich von den umgebenden Oberflächenbereichen der Gesichtsmaske 1 ab, und stehen insbesondere etwas über diese hervor. Die Bedienelemente 7 sind auch voneinander gut unterscheidbar, indem ausreichender Zwischenraum vorgesehen ist und vorzugsweise auch die Positionierungshöhe unterschiedlich ist, wie dies insbesondere aus Fig. 4 deutlich ersichtlich ist. Die Bedienelemente 7 sind damit auch haptisch voneinander unterscheidbar. In bevorzugter Ausgestaltung können die Bedienelemente auch in der Nähe des Wirkorts der jeweils gesteuerten Komponente angeordnet sein, beispielsweise der Ein/ Ausschalter für die Lautsprecher 3 und/oder der Lautstärkenregler in der Nähe des Ohrbereichs, d.h. im seitlichen Bereich, und der Ein/ Ausschalter für das Ionisiergerät nahe bei dem Nasenbereich, d.h. im mittleren Bereich der Gesichtsmaske 1. Weiterhin kann auch eine Leuchtdiode zur Anzeige des Schaltzustands (Einschaltung/ Ausschaltung) des Ionisiergeräts vorgesehen sein, was ggf. aber nicht unbedingt erforderlich ist.

Die Nadeln 8 des Ionisationsgeräts sind mechanisch geschützt, indem sie tiefergelegt sind, d.h. nicht über die Oberfläche der Gesichtsmaske 1 hinausragen. Alternativ können auch Ringe, vorzugsweise aus elektrisch nicht leitendem Material, vorgesehen sein, die die Nadeln umgeben und bis zur Spitze der Nadeln von der Oberfläche der Gesichtsmaske 1 vorstehen.

Die Bedienelemente zur Steuerung der Tonerzeugung können neben dem Ein/ Ausschalter und dem Lautstärkeregler



auch noch einen Umschalter "Intern/ Aux" enthalten, so daß zwischen der Wahl des internen Musikgenerators (ein oder mehrere Musikchips) und einer externen Tonquelle umgeschaltet werden kann. Vorzugsweise ist auch mindestens ein Auswahl-
5 wahlsschalter zur Auswahl der gewünschten internen Geräuschkulisse, z.B. Meeresrauschen, Wald, Wiese, Regen, Urwald usw., vorgesehen, durch dessen Betätigung der interne Ton-generator (Mikrochip mit gespeicherter Ton- oder Geräusch-
folge) zur Erzeugung der ausgewählten Geräuschkulisse ange-
10 steuert wird.

Die Audioeingangsbuchse 9 besitzt übliche Gestaltung und kann z.B. als 3,5 mm-Buchse ausgelegt sein.

15 Auch wenn dies in der Zeichnung nicht dargestellt ist, ist das Farblichtbehandlungsgerät 1 mit einem Dufterzeuger versehen, der als Aromastoffhalter in Form eines Fachs, eines Einschubs usw. ausgestaltet sein kann. Der Duftträger (Aromastoffhalter) kann ggf. auch durch Materialelastizität
20 geklemmt werden, d.h. wird elastisch durch Presspassung gehalten und ist damit bei Bedarf für eine Reinigung oder einen Austausch herausnehmbar. Der Duftträger oder der hierfür vorgesehene Aufnahmebereich der Gesichtsmaske 1 ist mit einem Heizwiderstand zur elektrischen Aufheizung versehen.
25 Vorzugsweise wird die Temperatur auf für das Kunststoffmaterial der Gesichtsmaske 1 unkritische Werte beschränkt, (z.B. ca. 45° bis 50°), so daß vorteilhafterweise kein separates metallisches Bauteil für die Heizung des Duftträgers erforderlich ist. Für die Ein/ Ausschaltung des Duft-
30 trägers kann ein separater Schalter vorgesehen sein. Alternativ kann zur Vereinfachung der Struktur auf diesen separaten Ein/ Ausschalter verzichtet sein, so daß die Heizung des Duftträgers bei Anschluß an die Stromversorgung ständig eingeschaltet ist. Aufgrund der geringen Leistung der Hei-
35 zung begründet dies keine Probleme.

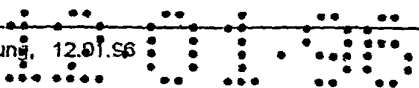


Der Duftträger (Aromastoffhalter) kann z.B. einen Durchmesser von 20 mm und eine Höhe von 6 mm haben.

Das Gehäuse des Farblichtbehandlungsgeräts 1 ist im wesentlichen durch die transparente Abdeckung 4 und die Schicht 5 gebildet. Zur Anpassung an verschiedene Kopfgrößen ist die Gerätebreite variabel. Die Gesichtsmaske 1 kann insgesamt flexibel ausgebildet sein. Vorzugsweise sind jedoch nur bestimmte Gehäuseteile, insbesondere die Seitenteile (Ohren-Flügel) flexibel und lassen sich aufbiegen oder enger zusammenklappen, so daß die Gesichtsmaske 1 an den jeweiligen Träger anpaßbar ist. Damit läßt sich die Druckbeanspruchung im Gesichts- und Ohrenbereich minimieren. Bevorzugt ist der mittlere Bereich der Gesichtsmaske 1 im Bereich der Stirn, der Augen, der Wangen bis hin zur Nasenspitze, starr. Dies umfaßt somit den größeren Bereich der Gesichtsmaske 1. An diesen starren mittleren Bereich schließen sich die flexiblen Ohrenteile an, die zugleich auch die Träger für die Lautsprecher 3 darstellen und ggf. auch keine Leuchtelemente 2 mehr tragen.

Die Variationsbreite der Gesichtsmaske 1 liegt je Seite zwischen ca. 10 bis 30 mm, vorzugsweise bei ungefähr ca. 20 mm. Damit kann die übliche Variation der Gesichtsbreiten von ungefähr 130 mm bis 175 mm problemlos abgedeckt werden.

Die transparente Abdeckung 4 für die Leuchtelemente 2 kann im starren (mittleren) Gehäusebereich fest mit diesem verbunden sein, so daß sich hohe Steifigkeit ergibt. Im flexiblen seitlichen Bereich (Ohrenteile) ist die transparente Abdeckung 4 vorzugsweise derart gehalten, daß ein Längenausgleich beim Aufspreizen und Zusammenklappen der Ohrenteile stattfinden kann. Vorzugsweise ist die transparente Abdeckung 4 in diesem seitlichen Bereich mit Spiel zum Gleiten eingebaut.



Alternativ ragt die transparente Abdeckung 4 nicht bis in die seitlichen Ohrentteile hinein, sondern befindet sich nur auf der Innenseite des starren Gehäuseteils. Die seitlichen, flexiblen Bereiche sind in diesem Fall von separaten Teilen abgedeckt, die z.B. opak sein können, um die Lautsprecher 3 zu verdecken. Alternativ kann in diesem Bereich eine Abdeckung auch vollständig entfallen.

Aus wenn dies nicht dargestellt ist, verfügt das Gehäuse 4, 5 über Lüftungsöffnungen, die an den Gehäuseseiten und/oder auf der bei Benutzung nach außen weisenden Seite (Schicht 5) austreten können und eine Wärmeabfuhr der von den Leuchtelementen 2 im Betrieb erzeugten Wärme ermöglichen.

Die Schicht 5 kann zudem als graphisch gestaltete, die entsprechenden Bedienungsinformationen tragende, ggf. farbliche variierte Folie ausgestaltet sein oder auch mit einer solchen Folie überzogen sein, um dem Anwender die notwendigen Bedieninformationen direkt zu vermitteln.

Wie aus den Zeichnungen ersichtlich ist, ist die Gesichtsmaske 1 auch im mittleren, starren Bereich gekrümmt. Als Elektronikplatine 6 wird daher vorzugsweise keine starre Platine verwendet, sondern eine flexible Platine. Auf der dem Anwender zugewandten Seite dieser flexiblen Platine sind die Leuchtdioden 2 gehalten. Vorzugsweise ist die flexible Platine zumindest in dem Bereich der Leuchtdioden lackiert oder bedruckt, um undurchsichtig zu sein. Alle anderen Bauteile und auch die Leiterbahnen liegen auf der den Leuchtdioden 2 gegenüberliegenden, anderen Platinenseite. Die flexible Platine ist vorzugsweise fest eingebaut, damit sie gegenüber Ermüdungserscheinungen und Bruchgefahr bei ständiger Biegebeanspruchung sicher geschützt ist.

An flexiblen Übergangsstellen, insbesondere zu den Ohrentteilen und den in diesen befindlichen Lautsprechern, ist



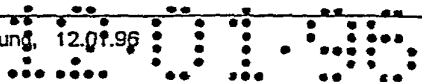
vorzugsweise eine Leiterfolie eingesetzt, da dort die mechanische Belastung höher ist. Die Leiterfolie ist vorzugsweise nicht mit Bauteilen bestückt.

5 Größere und damit schwerere oder auch stärker beanspruchte Bauteile wie etwa die Lautsprecher 3, die Audioeingangsbuchse 9 und ggf. auch der Übertrager des Ionisators (Ionisationsgerät) sind vorzugsweise separat im Gehäuse gehalten und werden nicht durch die flexible Platine
10 6 abgestützt. Damit ist die Belastung der flexiblen Platine 6 verhältnismäßig gering, so daß keine Zerstörungsgefahr besteht.

 Wie aus Fig. 2 ersichtlich ist, sind achtundvierzig
15 Leuchtdioden in Form von acht Spalten und sechs Zeilen matrixförmig angeordnet. Diese Leuchtdioden können unterschiedliche Farben haben, wobei dann vorzugsweise eine gezielte Auswahl der gewünschten Farbe/ Farben möglich ist. Die Anzahl der Leuchtdioden kann aber auch erhöht oder auch
20 verringert sein.

 Zur Stromversorgung ist ein nicht dargestelltes Netzteil vorgesehen, dessen Gleichspannungs-Ausgangsstecker in die Buchse 10 eingesteckt werden kann. Hierdurch bereitet
25 die Stromversorgung keine Probleme und auch keine Sicherheitsrisiken, da die im Bereich der Gesichtsmaske 1 vorhandenen Spannungswerte unkritisch niedrig sind.

 Für mobilen Einsatz ist weiterhin vorzugsweise ein separat handhabbarer Akku/Batteriepack vorhanden, der gleichfalls in die Buchse 10 eingesteckt werden kann. Die Buchse 10 kann an jeder geeigneten Position der Gesichtsmaske 1 vorgesehen sein, befindet sich aber vorzugsweise gemäß der Darstellung im Bereich eines der Lautsprecher, nämlich im
30 rechten unteren Gehäusebereich, wie in Fig. 4 gezeigt ist. Auch die Audioeingangsbuchse 9 befindet sich in diesem Bereich in der Nähe der Buchse 10, so daß eventuelle An-



schlußkabel (Tonkabel, Stromkabel) an lediglich einer Seite der Gesichtsmaske 1 angeordnet sind. Dies erleichtert die Handhabbarkeit und den Tragekomfort.

5 Zur Erzeugung der für die Ansteuerung der Ionisationsnadeln 8 erforderlichen Spannung des Ionisators ist vorzugsweise eine Dioden/Kondensator-Kaskade vorhanden. Bevorzugt sind diese Schaltungskomponenten mit einer Abschirmung versehen, die das elektrische Feld zumindest weitgehend gegenüber dem Anwender abschirmt. Der Anwender wird somit
10 keinen elektrischen Impulsfeldern ausgesetzt.

Die Bedienelemente 7, d.h. die Funktionsschalter, können als Mikrohubtaster ausgestaltet sein oder auch in Form
15 einer Folientastatur ausgelegt sein.

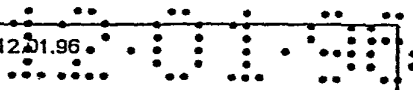
Durch das erfindungsgemäße Farblichtbehandlungsgerät lassen sich die gewünschten Wirkungen selektiv zuschalten/ausschalten, wobei bei gleichzeitigem Betrieb aller
20 Komponenten eine Vierfach-Wirkung mit optischer, akustischer, olfaktorischer und Ionisations-Beeinflussung erzielbar ist. Hierdurch läßt sich eine Konzentrationsverbesserung, Leistungssteigerung, Allergiebekämpfung, Entspannung usw. wirksam erreichen. Zum Beispiel können zur Heuschnupfen-Bekämpfung der Ionisator 8 und grüne Leuchtdioden 2
25 gleichzeitig betrieben werden.

Das Farblichtbehandlungsgerät 1 ist als selbsthaltende Maske ausgelegt, d.h. muß nicht in der Hand getragen werden, sondern kann auf das Gesicht des Anwenders selbsthaltend aufgesetzt werden. Dies erleichtert die Handhabung und fördert auch die Tiefe der Entspannung, da die Beanspruchung durch den manuellen Haltevorgang entfällt.
30



Schutzansprüche

- 5 1. Farblichtbehandlungsgerät mit einer Mehrzahl von
Leuchtelementen (2), insbesondere in Form von Leuchtdioden,
gekennzeichnet durch mindestens einen Lautsprecher (3).
- 10 2. Farblichtbehandlungsgerät nach Anspruch 1, dadurch ge-
kennzeichnet, daß zwei Lautsprecher (3) in den seitlichen
Bereichen des Farblichtbehandlungsgeräts (1) angebracht
sind.
- 15 3. Farblichtbehandlungsgerät nach Anspruch 1 oder 2, ge-
kennzeichnet durch eine Audio-Eingangsbuchse (9).
- 20 4. Farblichtbehandlungsgerät nach einem der vorhergehen-
den Ansprüche, gekennzeichnet durch mindestens einen in dem
Farblichtbehandlungsgerät eingebauten Tongenerator zur Er-
zeugung von über den mindestens einen Lautsprecher (3) wie-
dergebbaren Tonfolgen oder Geräuschen.
- 25 5. Farblichtbehandlungsgerät nach Anspruch 4, dadurch ge-
kennzeichnet, daß der Tongenerator durch mindestens einen
Mikrochip gebildet ist.
- 30 6. Farblichtbehandlungsgerät, insbesondere nach einem der
vorhergehenden Ansprüche, dadurch gekennzeichnet, daß eine
Ionisationseinrichtung (8) vorgesehen ist.
- 35



7. Farblichtbehandlungsgerät nach Anspruch 6, dadurch gekennzeichnet, daß die Ionisationseinrichtung mindestens eine, vorzugsweise zwei beabstandete, Nadel(n) (8) aufweist, die mit einem Generator zur Erzeugung einer Ionisationsspannung verbunden sind.

8. Farblichtbehandlungsgerät nach Anspruch 7, dadurch gekennzeichnet, daß der Generator in dem Farblichtbehandlungsgerät eingebaut ist.

9. Farblichtbehandlungsgerät nach Anspruch 7 oder 8, dadurch gekennzeichnet, daß die Nadel(n) in Vertiefungen auf der Oberfläche des Farblichtbehandlungsgeräts angeordnet ist/sind.

10. Farblichtbehandlungsgerät nach Anspruch 7 oder 8, dadurch gekennzeichnet, daß die Nadel(n) von Schutzringen umgeben ist/sind.

11. Farblichtbehandlungsgerät nach einem der Ansprüche 7 bis 10, dadurch gekennzeichnet, daß die Nadel(n) im mittleren Bereich des Farblichtbehandlungsgeräts angeordnet ist/sind.

12. Farblichtbehandlungsgerät, insbesondere nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß ein Aromastoffhalter für die Aufnahme von Aromastoffen vorgesehen ist.



13. Farblichtbehandlungsgerät nach Anspruch 12, dadurch gekennzeichnet, daß der Aromastoffhalter mit einer Heizeinrichtung versehen ist.

5

14. Farblichtbehandlungsgerät nach Anspruch 12 oder 13, dadurch gekennzeichnet, daß der Aromastoffhalter topfförmig ausgestaltet ist.

10

15. Farblichtbehandlungsgerät, insbesondere nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß es in Form eines langgestreckten, Elements, insbesondere in Form einer Gesichtsmaske, ausgebildet ist.

15

16. Farblichtbehandlungsgerät nach Anspruch 15, dadurch gekennzeichnet, daß die Gesichtsmaske eine einer durchschnittlichen Gesichtskontur angepaßte, insbesondere gebogene, Form besitzt.

20

17. Farblichtbehandlungsgerät nach Anspruch 15 oder 16, dadurch gekennzeichnet, daß der mittlere Bereich und/oder die seitlichen Bereiche der Maske steif ausgebildet sind.

25

18. Farblichtbehandlungsgerät nach einem der Ansprüche 15 bis 17, dadurch gekennzeichnet, daß der mittlere Bereich beweglich mit den Seitenbereichen verbunden ist.

30

19. Farblichtbehandlungsgerät nach einem der Ansprüche 15 bis 18, dadurch gekennzeichnet, daß die Gesichtsmaske plastisch verformbar- und rückverformbare Bereiche zur Anpassung an den jeweiligen Anwender aufweist.

35



20. Farblichtbehandlungsgerät nach Anspruch 19, dadurch gekennzeichnet, daß die verform- und rückverformbaren Bereiche als Gelenkbereiche ausgestaltet sind.

5

21. Farblichtbehandlungsgerät nach Anspruch 19 oder 20, dadurch gekennzeichnet, daß die plastisch verform- und rückverformbaren Bereiche als Sollbiegebereiche mit verringerter Dicke ausgebildet sind.

10

22. Farblichtbehandlungsgerät nach einem der Ansprüche 15 bis 21, dadurch gekennzeichnet, daß auf der Innenseite der Gesichtsmaske eine transparente Abdeckung (4) vorhanden ist.

15

23. Farblichtbehandlungsgerät nach einem der Ansprüche 15 bis 22, dadurch gekennzeichnet, daß im Innern der Gesichtsmaske zumindest ein, vorzugsweise flexibles, Elektroniksubstrat vorgesehen ist, das Schaltungselemente zur Ansteuerung von elektrisch betriebenen Komponenten trägt.

20

25

24. Farblichtbehandlungsgerät nach Anspruch 23, dadurch gekennzeichnet, daß der oder die Lautsprecher (3) an einem eigenen Trägersubstrat, insbesondere separat von dem Elektroniksubstrat (6), angebracht oder in die Gesichtsmaske eingebettet sind.

30

25. Farblichtbehandlungsgerät nach einem der Ansprüche 15 bis 24, dadurch gekennzeichnet, daß an der Gesichtsmaske, insbesondere auf deren Vorderseite, Betätigungselemente (7) zur Ein- und Ausschaltung von Komponenten und/oder zur Auswahl von Betriebsparametern vorhanden sind.

35



26. Farblichtbehandlungsgerät nach einem der Ansprüche 15
bis 17, dadurch gekennzeichnet, daß die Gesichtsmaske ins-
5 gesamt starr ausgebildet ist.

27. Farblichtbehandlungsgerät nach einem der Ansprüche 15
bis 26, dadurch gekennzeichnet, daß an der Gesichtsmaske
10 ein Haltebügel angebracht ist.

28. Farblichtbehandlungsgerät nach Anspruch 27, dadurch
gekennzeichnet, daß der Haltebügel sich von der Gesichts-
15 maske winklig, vorzugsweise im wesentlichen rechtwinklig
erstreckt.

29. Farblichtbehandlungsgerät nach Anspruch 27 oder 28,
20 dadurch gekennzeichnet, daß der Haltebügel gekrümmt, insbe-
sondere nach hinten gekrümmt ist.

30. Farblichtbehandlungsgerät nach einem der Ansprüche 27
25 bis 29, dadurch gekennzeichnet, daß der Haltebügel
abnehmbar, insbesondere verrastbar an der Gesichtsmaske
angebracht ist.

1/2 12.01.98

BEST AVAILABLE COPY

Fig. 1

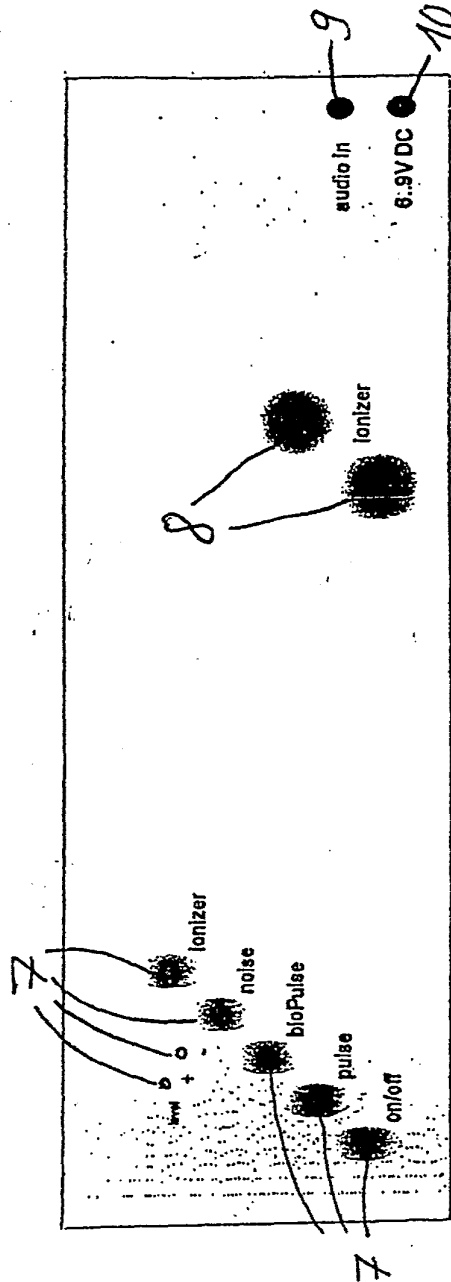
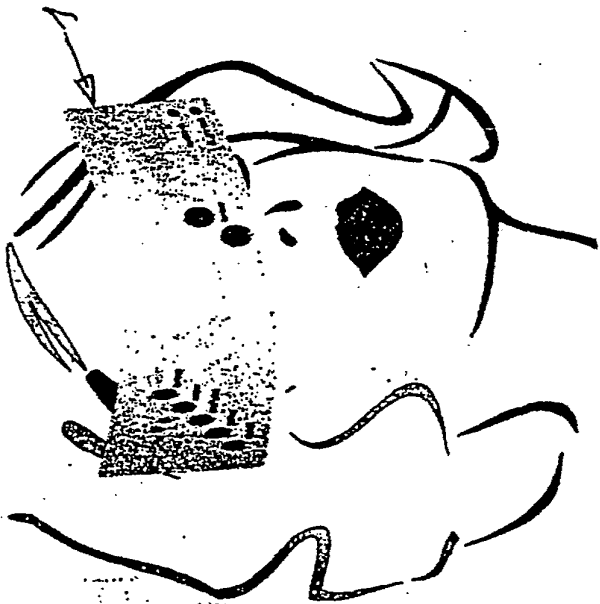


Fig. 4

12.01.98

12.01.98
2/2

BEST AVAILABLE COPY

Fig. 2

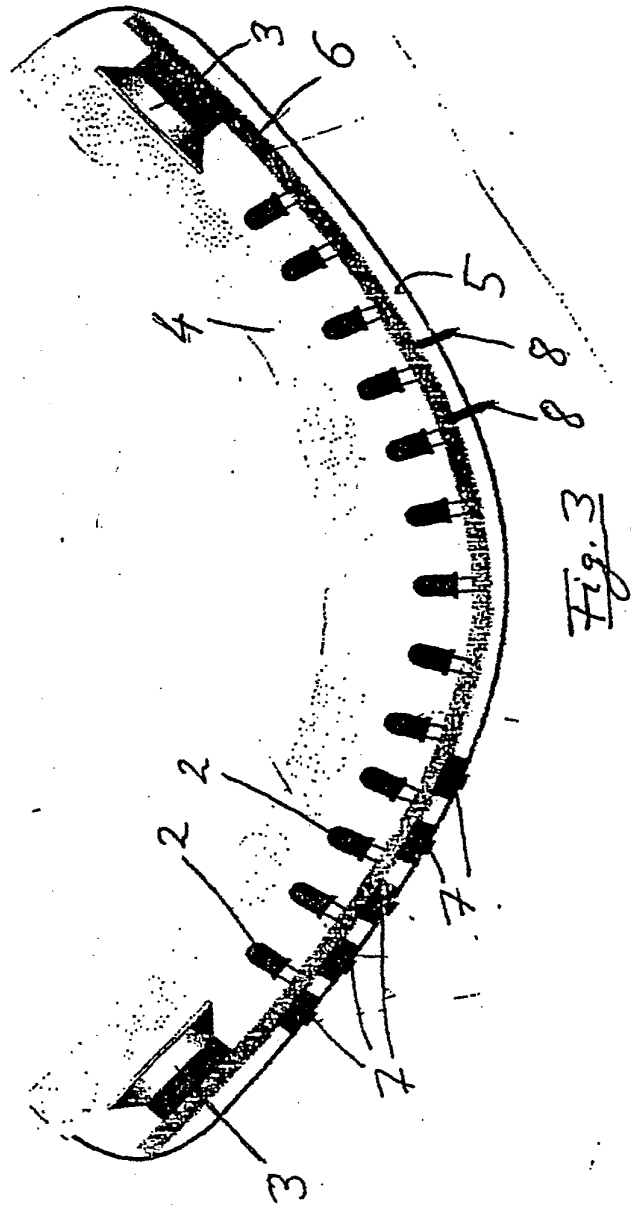
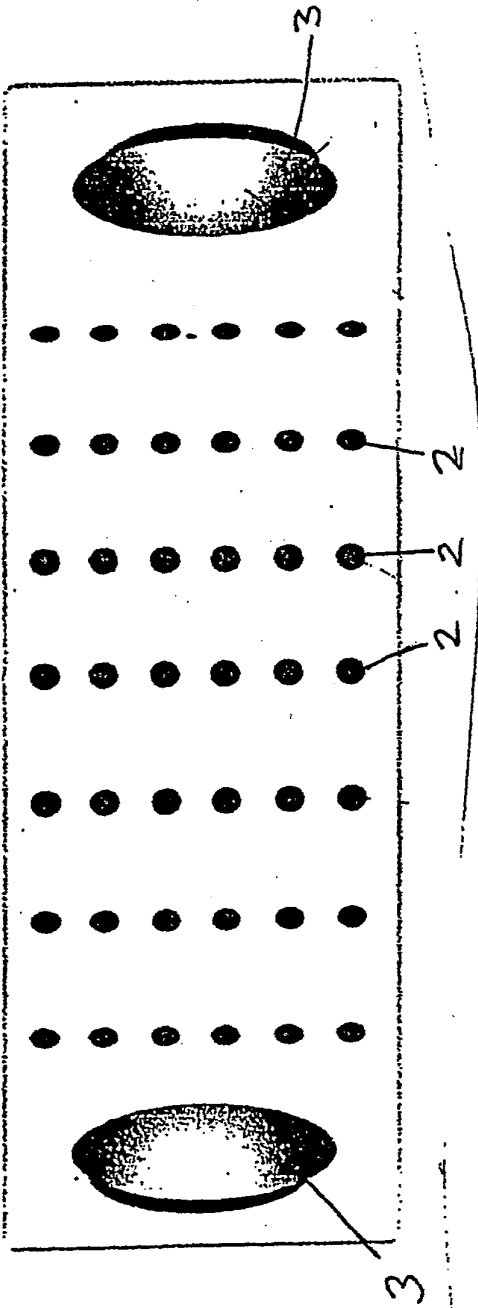


Fig. 3

298004 70

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (703) 746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590

08/24/2004

Bennett Jones LLP
 4500 Bankers Hall East
 855 2nd Street SW
 Calgary, AB T2P 4K7
 CANADA

10/25/2004 AKELECH2 00000015 022057 09710782

01 FC:2501 685.00 DA



Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537

TITLE OF INVENTION: LIGHT THERAPY DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$665.00	\$0	\$665.00	11/24/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
ROBINSON, DANIEL LEON	3742	607-088000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

THE LITEBOOK COMPANY LTD.

MEDICINE HAT, CANADA

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

4a. The following fee(s) are enclosed:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 02-2057 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

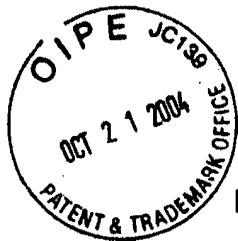
- ☒ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature: Rosann CaldwellDate: Oct. 19/04Typed or printed name: Rosann CaldwellRegistration No. 37,077

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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



Docket 44261-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Applicant: PEDERSON, Larry V. et al.

Group Art Unit: 3737

Serial No.: 09/710,782

Examiner: Daniel Robertson

Filed: November 13, 2000

For: "LIGHT THERAPY DEVICE"

Honourable Commissioner of Patents
and Trademarks,
Washington, D.C. 20231,
U.S.A.

Sir:

**RESPONSE to
NOTICE OF ALLOWANCE, EXAMINERS AMENDMENT
and INTERVIEW SUMMARY**

This is responsive to the Notice of Allowance, the Examiner's Amendment and the Interview Summary of August 24, 2004. In preparation for issuance, please note:

1. Certified Priority Documents for Completion of Priority Claim

In order to complete the foreign priority claim under 35 USC 119 (a) – (d) or (f), please find enclosed certified copies of Canadian patent applications 2,300,569 and 2,317,319, filed March 14, 2000 and August 30, 2000, respectively.

2. Reply to Interview Summary

Applicant's agent has reviewed the Interview Summary and submits that, during the telephonic interview, agreement was reached to insert the subject matter of claims 5 or 25 into claims 1, 19 and 28.

3. Assignment

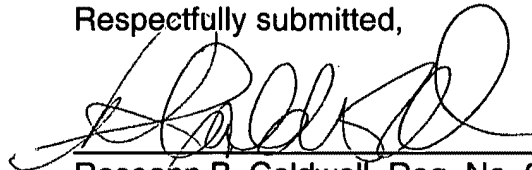
An assignment and cover sheet are enclosed for registration.

4. Part B – Fees Transmittal

Part B of the Notice of Allowance has been completed and is enclosed.

Favorable consideration is respectfully requested.

Respectfully submitted,



Roseann B. Caldwell, Reg. No. 37,077

BENNETT JONES LLP
4500 - 855 - 2nd Street S.W.
Calgary, Alberta CANADA T2P 4K7
tel. (403) 298-3661

Date: Oct 19/04



Office de la propriété
intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An Agency of
Industry Canada

*Bureau canadien
des brevets
Certification*

*Canadian Patent
Office
Certification*

La présente atteste que les documents
ci-joints, dont la liste figure ci-dessous,
sont des copies authentiques des docu-
ments déposés au Bureau des brevets.

This is to certify that the documents
attached hereto and identified below are
true copies of the documents on file in
the Patent Office.

Specification and Drawings, as originally filed, with Application for Patent Serial No:
2,317,319, on August 30, 2000, by **THE LITEBOOK COMPANY LTD.**, assignee of
Larry Verne Pederson, Clayton G. Coffey and Henry Hudema, for "Light Therapy Device".

Gracy Paulsen
Agent certificateur/Certifying Officer

August 18, 2004

Date

Canada

(CIPO 68)
31-03-04

OPIC  CIPO

ABSTRACT OF THE INVENTION

A light therapy device is taught including a light emitting assembly having light emitting diodes (LEDs) as a light source. The light emitting assembly capable of
5 generating 2,500 lux to 7,500 lux at 12 inches.

LIGHT THERAPY DEVICE

FIELD OF THE INVENTION

5

The present invention relates to a light therapy device and in particular to a light therapy device for treatment of light deficient disorders.

BACKGROUND OF THE INVENTION

10

There is much support for the use of light therapy to overcome light deficient disorders. It has been proven that treatments involving shining light directly towards a patient's eyes will alleviate or cure light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia.

15

There are two types of light therapy devices presently available. One type of device is large in size and floor or desk mountable. These devices include light sources of fluorescent bulbs. Although they can be moved from one position to another, they are not generally portable. In addition, the light source is quite fragile. The second kind of light therapy devices are head mountable. These devices are formed as eye glasses or visors. While they are portable, they are not generally accepted by patients for use in public because of their odd appearance when worn on the head. This combined with safety concerns about eye damage given the proximity of the light source to the eye, has resulted in head mountable treatment devices failing to be generally accepted as a light therapy device.

20

25

These devices therefore are of limited use for persons requiring a portable and discreet treatment device. A light therapy device is needed for use by, for example, the business traveler that is portable and aesthetically appealing.

30

SUMMARY OF THE INVENTION

The present invention provides a portable and light-weight hand-held light therapy device. The device is durable, being resistant to damage by normal transport. The device uses light emitting diodes (LEDs) as a source of light. LEDs offer a light source that is light-weight, small in size, simple, durable as well as energy efficient. The device is useful for travel and for in-flight use while being aesthetically acceptable.

10 In accordance with one aspect of the present invention, there is provided a light treatment comprising: an outer housing including a opening; 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.

15 The LEDs include at least some capable of emitting white-light. In one embodiment, the LEDs are arranged in a pattern over an area and the light emitting assembly is selected to emit light from the LEDs along a substantially straight line directly toward the user. Preferably, a diffuser screen of light diffusing sheet material is positioned over the LEDs to provide a more uniform emission of light. While LEDs do not emit any significant amount of ultraviolet radiation, the diffuser sheet material can include a UV filter, if desired.

20 To facilitate therapy using the device, the housing can also accommodate a therapy calculator for determining a treatment regime based on an input of information.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a front elevation view of a light therapy device according to the present invention. A portion of the device has been cut away to facilitate illustration of internal components.

Figure 2 is a side elevation view of the light therapy device of Figure 1 with the support leg folded against the housing.

Figure 3 is a sectional view along line A-A of Figure 1.

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figures 1 to 3, a light therapy device according to one embodiment of the present invention is shown. The device is small in size and resembles a large calculator or hand-held computer. Preferably, the outside dimensions of the device
10 are less than about 7 inches wide, 7 inches high and 1.5 inches deep. The size can be varied as desired and with consideration as to portability, convenience and the components that must be contained therein.

The device includes an outer housing 10. The housing is preferably formed of a durable, impact resistant material such as, for example, a polymer (i.e. nylon, thermoplastic or blends thereof). Preferably, all housing parts are of minimal thickness to provide suitable impact resistance and support for internal components while minimizing the weight of the device. The housing can be formed, as shown, in parts secured together by screws 12 or other fastening means.
15

20 The housing carries a light emitting assembly 20. The light emitting assembly is mounted in the housing such that in operation light emitted therefrom is directed out through an opening 22 in the housing.

25 Light emitting assembly 20 includes a printed circuit (PC) board 26 providing electrical connection for light emitting diodes 28. The LEDs are spaced apart on the board, with consideration as to their light output and wavelength, such that the assembly emits a light of illumination adequate for treatment of light deficient disorders. In particular, the light emitting assembly generates adequate illumination
30 for treatment of light deficient disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia, which is between 2,500 and 7,500 lux, and preferably

between about 3,500 and 5,500 lux at 12 inches from the assembly. To generate this level of illumination, the assembly generally includes between about 10 and 150 LEDs together having a total light output of between 50 and 500 candelas and preferably about 250 to 450 candelas. The number of LEDs in the light emitting
5 assembly may be reduced considerably as the efficiency of a LED is increased.

For bright-light therapy, preferably white LEDs are used. However, it is sometimes useful to combine light of different wavelengths and in some instances to approximate the spectral properties or distribution of a tropical sunrise. Therefore, LEDs 28 can be
10 entirely of the type emitting white light or, alternatively, LEDs emitting light of various wavelengths (i.e. red or amber) can be used with white light emitting diodes. The light generated by the light emitting assembly is preferably constant, though it may also be pulsed.

15 In one embodiment, a diffuser screen 32 is mounted over the diodes to create a more uniform, less harsh light emission. Preferably, LEDs 28 are mounted a suitable distance from diffuser screen 32 such that the light emitted by each LED overlaps on the screen and avoids the appearance of individual points of light behind the screen. If a diffuser screen is used, it is necessary to ensure that adequate levels of light, as set
20 out above, are passed therethrough to permit treatment.

Power is supplied to the LEDs through electrical lines 34. Power can be provided through batteries or preferably, to reduce weight, through a jack 36 for connection to a 120v electrical supply (for use in North America). The device preferably operates
25 using DC power and is supplied with an external AC-DC converter. Since the device is particularly useful during long distance travel in the treatment of jet-lag, an adapter can be provided within the device or separately for device compatibility with foreign voltages of AC power or with DC power, as is provided through power ports mounted in aircraft armrests.

30 To facilitate light treatment, a support leg 40 can be provided for supporting the housing in a propped position such that light is emitted in a generally horizontal

direction. In one embodiment, support leg 40 is connected by a hinge 42 to the rear of the housing such that the leg can be rotated to between a supporting position and a stored position against the rear of the housing.

- 5 Housing 10 can also be formed to accommodate other electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items. The housing can also include a cover, a case and/or a more complex stand for elevating the light illuminating assembly.
- 10 Using a light therapy device according to the present invention, treatments of acceptable duration can be administered. As an example, treatments for SAD can be completed in $\frac{1}{4}$ to 4 hours and in most cases, $\frac{1}{2}$ to 3 hours.

In one embodiment, housing 10 also accommodates a calculator including a display
15 82, a key pad 84 and a processor mounted within housing 10. The calculator is programmed to calculate a light treatment regime based on input of information. The calculator processor uses calculation references such as that known as the Jet Lag Calculator™ available from Bio-Brite, Inc., Maryland. In one embodiment, the calculator calculates light treatment regimes for jet lag based on inputs of information,
20 as follows:

Option 1

- i. Number of time zones crossed during trip
- ii. Direction of time zones crossed (East or West)
- 25 iii. Normal wake-up time of patient (for establishing the patient's "body clock")

Option 2

- i. Departure city
- 30 ii. Arrival city
- iii. Normal wake-up time of patient

Based on the input of the above-noted information, the calculator will then calculate and display a treatment regime including, for example, a period of light exposure and a period of light avoidance. In option 2, the calculator determines the number of time zones through which travel will occur and uses this to calculate treatment regime.

- 5 The calculator in one embodiment calculates a two-day treatment regime.

In one embodiment, the calculator keypad includes keys to be depressed when inputting particular information. As an example, the keypad can include keys such as: "departure city", "destination city" and "wake up time". The calculator can be adapted to prompt the patient such as by displaying questions requesting the appropriate information. Preferably, the calculator includes a pause function capable of recording a time of treatment interruption and capable of outputting from memory the portion of the treatment remaining when treatment is resumed.

- 15 In addition or alternately, calculator can be programmed for calculation of other treatment regimes such as, for example, for treatments to alleviate fatigue in shift workers. Treatments for shift workers may include inputs such as work shift start time, previous shift time and normal waking time.

- 20 A speaker 88 is preferably provided for communication to the user. As an example, the speaker can communicate with the calculator processor to audibly prompt a user to input information. In addition, the speaker can function to emit an audible signal, such as an alarm, to alert a user to commence or modify a treatment. In one embodiment, the calculator processor controls a switch for the light emitting assembly such that it is turned on or off in response to a signal from the processor.

In a preferred embodiment, the calculator memory is capable of storing previous treatment regimes. These stored treatment regimes can be recalled from processor memory for repeat trips or shift work schedules.

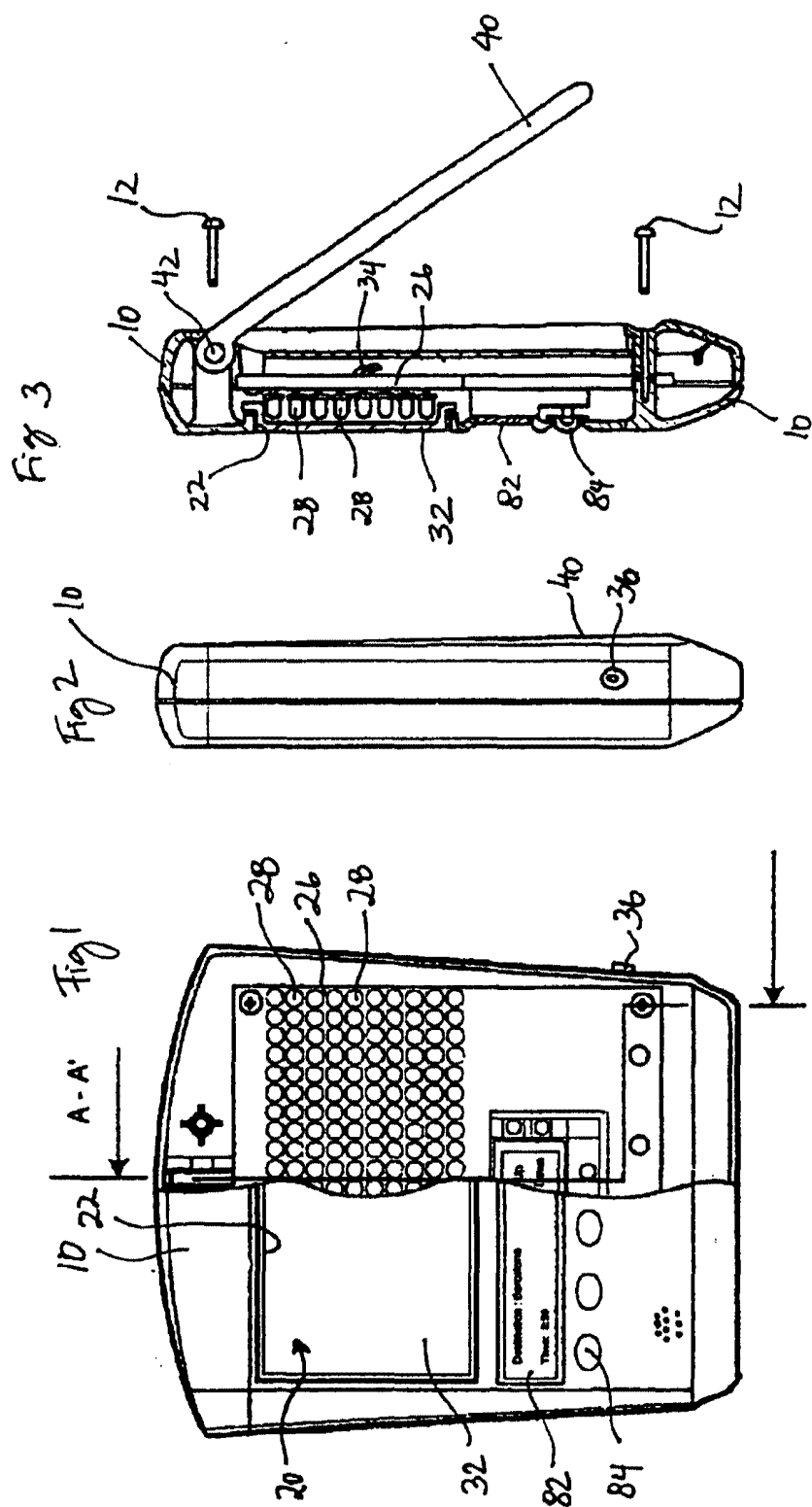
30

If desired, to enhance the usefulness of the device, the calculator can also be programmed with other information including a clock, a standard mathematical calculator or other information such as an address book, etc.

- 5 Numerous modifications, variations and adaptations may be made to the particular embodiments of the invention described above without departing from the scope of the invention as defined in the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A light therapy device comprising:
 an outer housing including a opening;
 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.
- 10 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
15 sheet material is positioned over the LEDs.
4. The light therapy device of claim 1 wherein the housing accommodates a
 therapy calculator for determining a treatment regime based on an input of
 information.



BEST AVAILABLE COPY



Office de la propriété
intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An Agency of
Industry Canada

*Bureau canadien
des brevets
Certification*

*Canadian Patent
Office
Certification*

La présente atteste que les documents
ci-joints, dont la liste figure ci-dessous,
sont des copies authentiques des docu-
ments déposés au Bureau des brevets.

This is to certify that the documents
attached hereto and identified below are
true copies of the documents on file in
the Patent Office.

Specification and Drawings, as originally filed, with Application for Patent Serial No:
2,300,569, on March 14, 2000, by **THE LITEBOOK CO. LTD.**, assignee of
Larry Verne Pederson, Clayton G. Coffey and Henry Hudema, for "Light Therapy Device".

BEST AVAILABLE COPY

Mary Pauhus
Agent certificateur/Certifying Officer

August 18, 2004

Date

Canada

(CIPO 68)
31-03-04

OPIC  CIPO

ABSTRACT OF THE INVENTION

A light treatment device is taught including an outer housing having a first member and a second member. The first member and the second member are releasably
5 locked together and are openable to permit access to a compartment. The light treatment device also includes a light emitting assembly having light emitting diodes (LEDs) as a light source. The light emitting assembly is storable in the compartment and is mountable on the housing such that the housing acts as a base to support the light emitting assembly.

10

LIGHT THERAPY DEVICE

FIELD OF THE INVENTION

5

The present invention relates to a light therapy device and in particular to a light therapy device for treatment of light deficient disorders and body clock disruptions.

BACKGROUND OF THE INVENTION

10

There is much support for the use of light therapy to overcome light deficient disorders. It has been proven that treatments involving shining light directly towards a patient's eyes will alleviate or cure disorders including Seasonal Affective Disorder (SAD), circadian sleep disorders and circadian disruptions associated with jet-lag, shift-work, PMS and bulimia.

15

There are two types of light therapy devices presently available. One type of device is large in size and floor or desk mountable. These devices include light sources of fluorescent bulbs. Although they can be moved from one position to another, they are not generally portable. In addition, the light source is quite fragile. The second kind of light treatment devices are head mountable. These devices are formed as eye glasses or visors. While they are portable, they are not generally accepted by patients for use in public because of their odd appearance when worn on the head. This combined with safety concerns about eye damage given the proximity of the light source to the eye, has resulted in head mountable treatment devices failing to be generally accepted as a light therapy device.

20

25

These devices therefore are of limited use for persons requiring a portable and discreet treatment device. A light treatment device is needed for use by, for example, the business traveler that is portable and aesthetically appealing.

30

SUMMARY OF THE INVENTION

The present invention provides a portable, light weight and attractive light treatment device. The device is durable, being resistant to damage by normal transport. The device uses light emitting diodes (LEDs) as a source of light. LEDs offer a light source that is light weight, small in size, simple, durable as well as energy efficient. The device is useful for travel and for in flight use while being aesthetically acceptable.

10 In accordance with one aspect of the present invention, there is provided a light treatment device comprising an outer housing including a first member and a second member, the first member and the second member being releasably locked together and a light emitting assembly including a plurality of LEDs, the light emitting assembly being storable in the first member and being mountable on the housing such
15 that the housing acts as a base to support the light emitting assembly.

In one embodiment, the first and second members are pivotally connected and openable in a manner similar to a book. The first and second members, when closed enclose an inner compartment accessible by opening the first and second members about their pivotal connection. The light emitting assembly is storable in the inner compartment. In this embodiment, the light emitting assembly can be mountable on the first member and the second member can act as a base. In one embodiment, an extension arm is mounted between the first member and the second member. The extension arm can be extended to increase the space between the second member and the first member and, where the light emitting assembly is mounted on the first member, to increase the height of the light emitting assembly above the surface on which the device is resting.

30 In another embodiment, the first member and the second member are pivotally connected. The light emitting assembly is pivotally connected to at least one of the first or second members. The light emitting assembly is pivotally moveable between

a stored position in which it is surrounded at least in part by the first and second members and an illuminating position in which it is open for use.

The LEDs include at least some capable of emitting white-light. In one embodiment, the LEDs are arranged in a pattern over an area and the light emitting assembly is selected to emit light from the LEDs along a substantially straight line directly toward the user. Preferably, a diffuser screen of light diffusing sheet material is positioned over the LEDs to provide a more uniform emission of light. While LEDs do not emit any significant amount of ultraviolet radiation, the diffuser sheet material can include a UV filter, if desired. In another embodiment, a plurality of LEDs are arranged to emit light into a light conducting plate that bends the light by reflection and/or refraction to direct the light outwardly in a selected direction. The light conducting plate provides that the LEDs can be mounted beside the area through which light is directed rather than behind it. The use of a light conducting panel offers many advantages over a screen of LEDs such as, for example, a reduction in cost, complexity, size and weight.

To facilitate therapy using the device, the housing can also accommodate a therapy calculator for determining a treatment regime based on an input of information.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a side elevation view of a light therapy device according to the present invention with the device closed.

Figure 2 is a front elevation view of the light therapy device of Figure 1.

Figure 3 is a side elevation view of the light therapy device of Figure 1 with the device in the open position ready for use.

Figure 4 is a front elevation view of the light therapy device shown in the configuration of Figure 3 with its diffuser screen cut away to facilitate illustration of the LEDs.

Figure 5 is a sectional view along line 5-5 of Figure 4.

Figure 6 is a top plan view of a light emitting assembly useful in the present invention.

Figure 7 is a sectional view along line 9-9 of Figure 6.

Figure 8 is a sectional view through another light therapy device according to the present invention.

Figure 9 is front elevation of another light therapy device according to the present invention.

Figure 10 is a side elevation of the light therapy device of Figure 9.

Figure 11 is a top plan view of the light therapy device of Figure 9 in the closed position.

Figure 12 is a side elevation of the light therapy device of Figure 9 in the closed position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

15

Referring to Figures 1 to 5, a light therapy device according to one embodiment of the present invention is shown. The device has an outer housing including an upper housing member 10 and a lower housing member 12. The housing members are connected by a hinge 14 that permits them to pivot relative to each other between a closed position shown in Figures 1 and 2 and an open position shown in Figures 3 and 4. When in the closed position, the housing members can be releasably locked together by a catch 16. The device is small in size and, when closed, resembles a small case or lap-top computer. Preferably, the outside dimensions of the device are about 13 inches wide, 4 inches high and 12 inches deep. The size can be varied as desired and with consideration as to portability, convenience and the components that must be contained therein. A handle 18 is preferably secured to the outer surface of the housing to facilitate transport.

Upper and lower housing members are preferably formed of a durable, impact resistant material such as, for example, a polymer (i.e. nylon, thermoplastic or blends thereof). Preferably all housing parts are of minimal thickness to provide selected

degrees of impact resistance and support for internal components so that the weight of the device is minimized.

5 The housing encloses a light emitting assembly 20. In the illustrated embodiment, light emitting assembly 20 is mounted in the upper housing member. The light emitting assembly is mounted in an indent 22 on the inwardly facing portion of the upper housing member so that, when the device is in the closed position, assembly 20 is protected within the housing members. In this way, the light emitting assembly, which is more fragile than the housing, is protected against damage during transport.

10

The device is opened for use to administer a light treatment. In a preferred embodiment, upper housing member unfolds from the closed position by rotating about hinge 14. Lower housing member 12 includes a base 12a and an extension arm 12b connected by a second hinge 24. The extension arm can be rotated about hinge 15 24 to elevate the upper housing member relative to base 12a. Thus, the height of the light can be selected. Preferably the extension arm is formed, as shown, to fit within the base when the device is in the closed position. Preferably, each of hinges 14 and 24 are of the kind that permit self locking in at least a few rotational orientations. The use of such hinges permits that, for example, upper housing member can be oriented 20 to direct the light downwardly (as shown in phantom), horizontally or, if preferred, in other directions. This is useful as it may be necessary, depending on the treatment, to have the light directed into the patient's eyes or alternately downwardly toward a work space.

25 Base 12a is selected to support extension arm 12b and upper housing member 10 when in the elevated position. Counterweights (not shown) can be mounted in the base to prevent the device from tipping. Base 12a can also be formed to accommodate electronics, batteries etc. or to define storage space such as for cords, adapters, glasses or other items.

30

Light emitting assembly 20 includes a printed circuit (PC) board 26 providing electrical connection for white light emitting diodes 28. The LEDs are spaced apart

on the board, with consideration as to their light output and wavelength, such that the assembly emits a light of selected illumination. In one embodiment, as many as 600 white light LEDs are mounted on a board of 6 inches by 8 inches to provide a light which is the equivalent of 10,000 lux at about 20 inches. This provides a level of illumination that has been recognized as being useful for bright-light therapy. The size of the board and the number of LEDs thereon may be considerably reduced as the efficiency of LEDs increases. The board can also be made smaller as we better understand the required area of illumination.

10 In one embodiment, a diffuser screen 32 is mounted over the diodes to create more uniform light emission. Preferably, LEDs 28 are mounted a suitable distance from diffuser screen 32 such that the light emitted by each LED overlaps on the screen and avoids the appearance of individual points of light behind the screen.

15 Power is supplied to the LEDs through electrical lines 34 passing through channels in the housing and through hinges. Power can be provided through batteries or preferably to reduce weight through a jack 36 for connection to a 120v electrical supply (for use in North America). Since the device is particularly useful for treatment of jet-lag, an adapter can be provided within the device or separately for
20 conversion to other voltages of AC power or to DC power as is provided through power ports mounted in aircraft armrests.

Referring to Figures 6 and 7 another light emitting assembly 20a is shown. Light emitting assembly 20a is useful in the present invention and can reduce the size of a light therapy device over the device shown in Figures 1 to 5. In particular, light
25 emitting assembly 20a can be used to replace the assembly of the PC board, the LEDs and the diffuser screen in Figures 1 to 5.

Light emitting device 20a includes a light conductive plate 50 having conductive
30 edges 52 and a conductive surface 54. LEDs 56 are positioned along at least one of the conductive edges 52 of the plate. In the illustrated embodiment, LEDs 56 are mounted on two PC boards 58 to direct light at the conductive edges. Preferably, the

LEDs are positioned in a row the same length as the conductive edge such that light is directed into conductive plate 50 along substantially the entire length of its conductive edges. Edges 60 and surface 62, opposite conductive edges 52 and conductive surface 54, respectively, are coated with a reflective film to prevent light from being conducted therethrough and to enhance reflection of light into the plate and out through conductive surface 54. Conductive edges 52 are angled, indicated at α , relative to the plane, indicated at 61, of the plate and LEDs are correspondingly angled with respect to edges 52 to direct the light into edge without reflection off the edge surface. Thus, light emitted by LEDs 56 passes into conductive plate 50 and is reflected by surface 62 and edges 60 to be conducted through surface 54.

In bright-light therapy, it is sometimes useful to combine light of different wavelengths. Therefore, LEDs 56 can be entirely of the type emitting white light or, alternatively, LEDs emitting light of various wavelengths (i.e. red or amber) can be used with white light emitting diodes.

Plate 50 is preferably between about .25 and .5 inches thick and is formed of clear material, for example, acrylic or polycarbonate such as Lexan™. Accordingly the light emitting assembly is light weight and durable. As an example, the upper member of Figure 5 is about 1.5 inches thick while an upper member including the light emitting assembly of Figure 6 can be about 1 inch thick.

Figure 8 shows a light therapy device including another light emitting assembly useful in the present invention. One housing member 10a of the therapy device houses the light emitting assembly. Two PC boards 58 carrying a plurality of LEDs 56 are positioned to emit light from the LEDs into a chamber 64. Chamber 64 is an air-filled space. In one embodiment, chamber 64 is defined by a reflective surface 65 that reflects light outwardly toward the rear side of a light conductive plate 50a. Light conductive plate 50a includes a film 66 selected to reflect or refract the light and direct it towards a light conductive surface 67. The preferred film is that known as 3M Optical Light Film™ available from 3M Company. The film is relatively flexible and preferably is supported by a clear material support 68 such as a polycarbonate

panel. The light emitting assembly of Figure 8, can be about the same thickness as, but is less heavy than, that shown in Figure 6.

Referring to Figures 9 to 12, another light therapy device according to the present invention is shown. The device includes a first housing member 70, a second housing member 72 and a housing 73 including a light emitting assembly 74. The housing members 70, 72 are formed as U-shaped members having bases 70a, 72a, respectively, and arms extending therefrom. The arms of the first and second members are connected together by hinge pins 76. The hinge pins permit pivotal movement of the first and second members between a closed position (Figures 11 and 12) wherein first assembly nests within an opening 75 in second member 72 and an open position (Figures 9 and 10). In the open position, the first and second members are positioned to support the housing of light emitting assembly 74 in an elevated position. In the closed position, the first and second members together form a flat unit suitable for storage or to support light emitting assembly 74 in a low position. To facilitate use of the device, preferably hinge pins 76 are adapted such that the first and second members can only be oriented in the fully open position and the fully closed position.

Housing 73 is formed of a durable material such as, for example, impact resistant polymeric material. Housing 73 is pivotally connected to first housing member 70 through hinges which can be extension of hinge pins 76. The hinges permit rotation of housing 73 of the light emitting assembly through a plurality of locations some of which are shown in phantom in Figure 10.

For storage of the light therapy device, housing 73 rotates into an opening 78 formed between the arms of first member 70 and first member is nested in the opening of second member, as best shown in Figure 11.

Preferably the hinges between housing 73 and first member 70 are adapted such as by a cooperating assembly of a detent pin and dimples to permit the light emitting assembly to be releasably locked in only selected locations.

Second member 72 includes a side panel 79. When the housing of light emitting assembly 74 is stored, light emitting assembly 74 is positioned behind side panel 79 and is protected by it. In the illustrated embodiment, side panel 79 is slidably mounted on second member 72. In particular, return flanges (cannot be seen in the Figures) are formed on the side edges of the panel. The return flanges engage into and are moveable along channels 80 formed on the second member. With this mounting arrangement, side panel 79 can be slid up towards hinge end 72b of the second member to act as a lock against inadvertent rotation of housing 73 out of the stored position. This panel position is shown in Figure 11.

The housing around light emitting assembly also accommodates a calculator 81 including a display 82, a key pad 84 and a processor mounted within housing 73. Calculator 81 is programmed to calculate a light treatment regime based on input of information. The calculator processor uses calculation references such as that known as the Jet Lag Calculator™ available from Bio-Brite, Inc., Maryland. In one embodiment, the calculator calculates light treatment regimes for jet lag based on inputs of information, as follows:

Option 1

- i. Number of time zones crossed during trip
- ii. Direction of time zones crossed (East or West)
- iii. Normal wake-up time of patient (for establishing the patient's "body clock")

25

Option 2

- i. Departure city
- ii. Arrival city
- iii. Normal wake-up time of patient

30

Based on the input of the above-noted information, the calculator will then calculate and display a treatment regime including, for example, a period of light exposure and

a period of light avoidance. In option 2, the calculator determines the number of time zones through which travel will occur and uses this to calculate treatment regime. The calculator in one embodiment calculates a two-day treatment regime.

- 5 In one embodiment, the calculator keypad includes keys to be depressed when inputting particular information. As an example, the keypad can include keys such as: "Departure City", "Destination City" and "Wake up time". The calculator can be adapted to prompt the patient such as by displaying questions requesting the appropriate information. Preferably, the calculator includes a pause function capable
10 of recording a time of treatment interruption and capable of outputting from memory the portion of the treatment remaining when treatment is resumed.

- In addition or alternately, calculator can be programmed for calculation of other treatment regimes such as, for example, for treatments to alleviate tiredness in shift
15 workers. Treatments for shift workers may include inputs such as work shift start time, previous shift time and normal waking time.

- A speaker 88 is preferably provided for communication to the user. As an example, the speaker can communicate with the calculator processor to audibly prompt a user
20 to input information. In addition, the speaker can function to emit an audible signal, such as an alarm, to alert a user to commence or modify a treatment. In one embodiment, the calculator processor controls a switch for the light emitting assembly such that it is turned on or off in response to a signal from the processor.

- 25 In a preferred embodiment, the calculator memory is capable of storing previous treatment regimes. These stored treatment regimes can be recalled from processor memory for repeat trips.

- If desired, to enhance the usefulness of the device, the calculator can also be
30 programmed with other information including a clock, a standard mathematical calculator or other information such as an address book, etc.

Numerous modifications, variations and adaptations may be made to the particular embodiments of the invention described above without departing from the scope of the invention as defined in the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A light treatment device comprising an outer housing including a first member
and a second member, the first member and the second member being releasably
locked together and a light emitting assembly including a plurality of LEDs, 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.
- 10 2. The light therapy device of claim 1 wherein the first and second members are
pivotally connected.
3. The light therapy device of claim 1 wherein the light emitting assembly is
mounted onto the first member and the second member forms a base for support of
15 the first member.
4. The light therapy device of claim 3 further comprising an extension arm
mounted between the first member and the second member.
5. The light therapy device of claim 1 wherein the LEDs include at least some
capable of emitting white-light.
- 20 6. The light therapy device of claim 1 wherein a diffuser screen of light diffusing
sheet material is positioned over the LEDs.
7. The light therapy device of claim 6 wherein the diffuser screen includes a UV
25 filter.
8. The light therapy device of claim 1 wherein the LEDs are arranged to emit
light into a light conducting plate, formed to reflect and/or refract the light internally
and to direct it toward a light conductive surface for emitting the light.

9. The light therapy device of claim 1 wherein the housing accommodates a therapy calculator for determining a treatment regime based on an input of information.

FIGURE 2

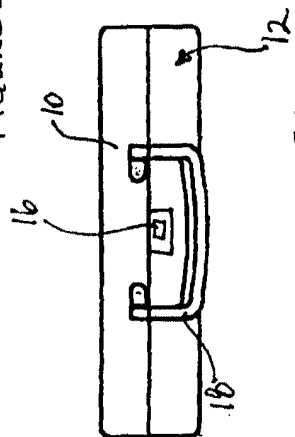


FIGURE 4

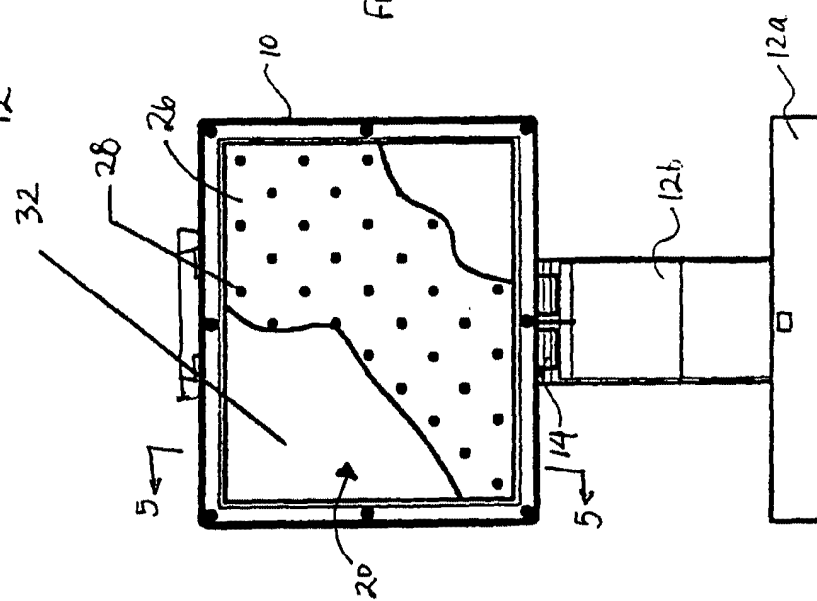


FIGURE 1

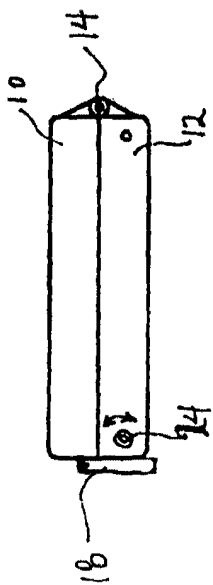


FIGURE 3

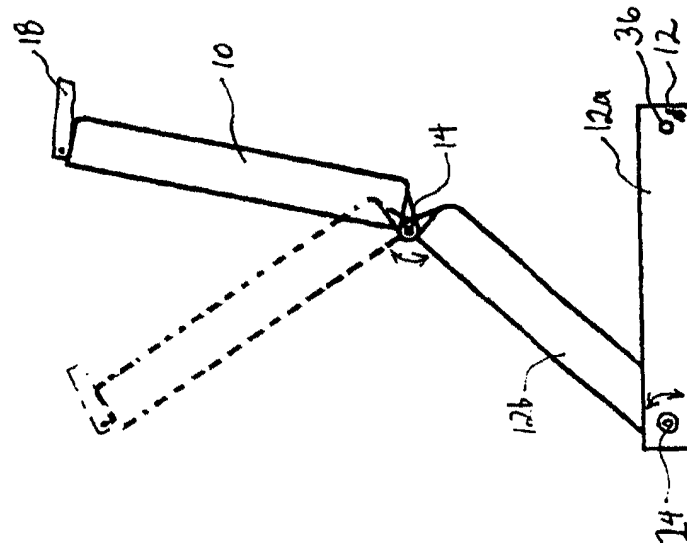
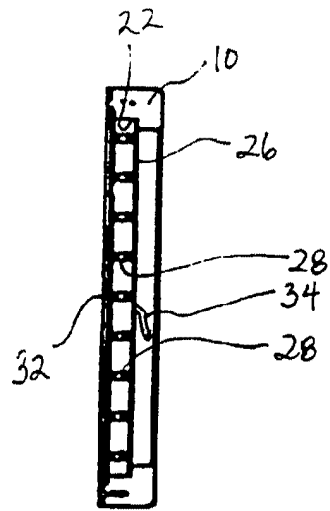
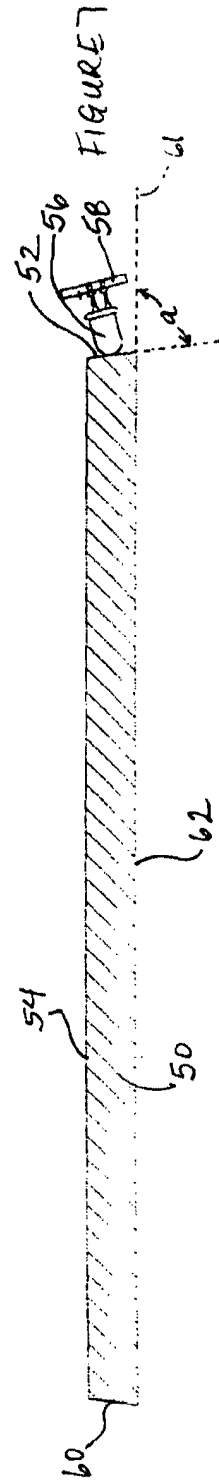
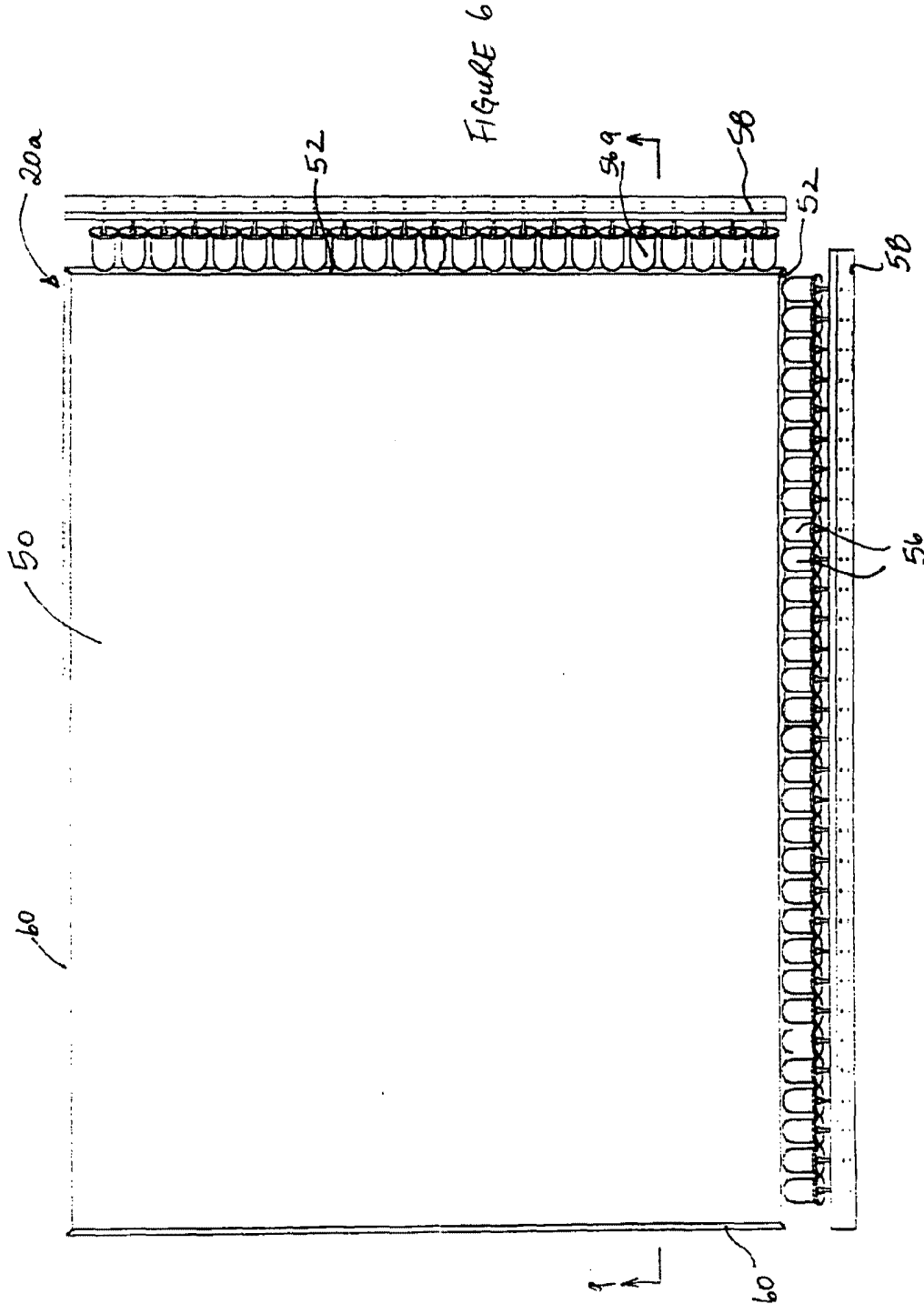
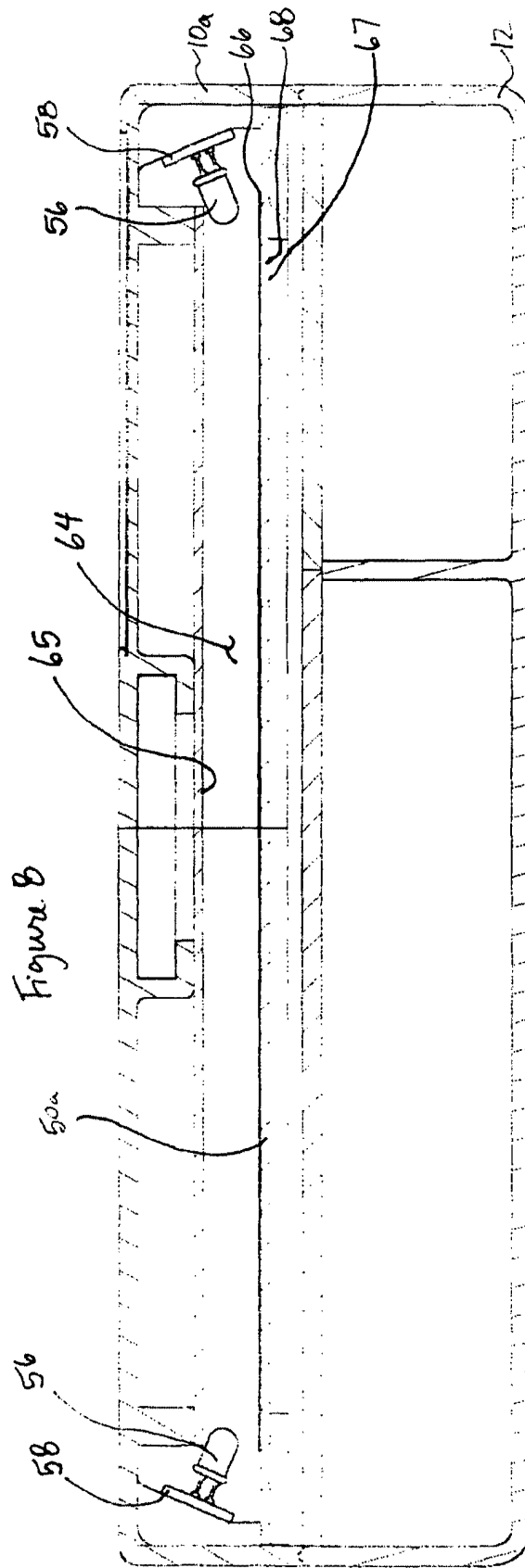
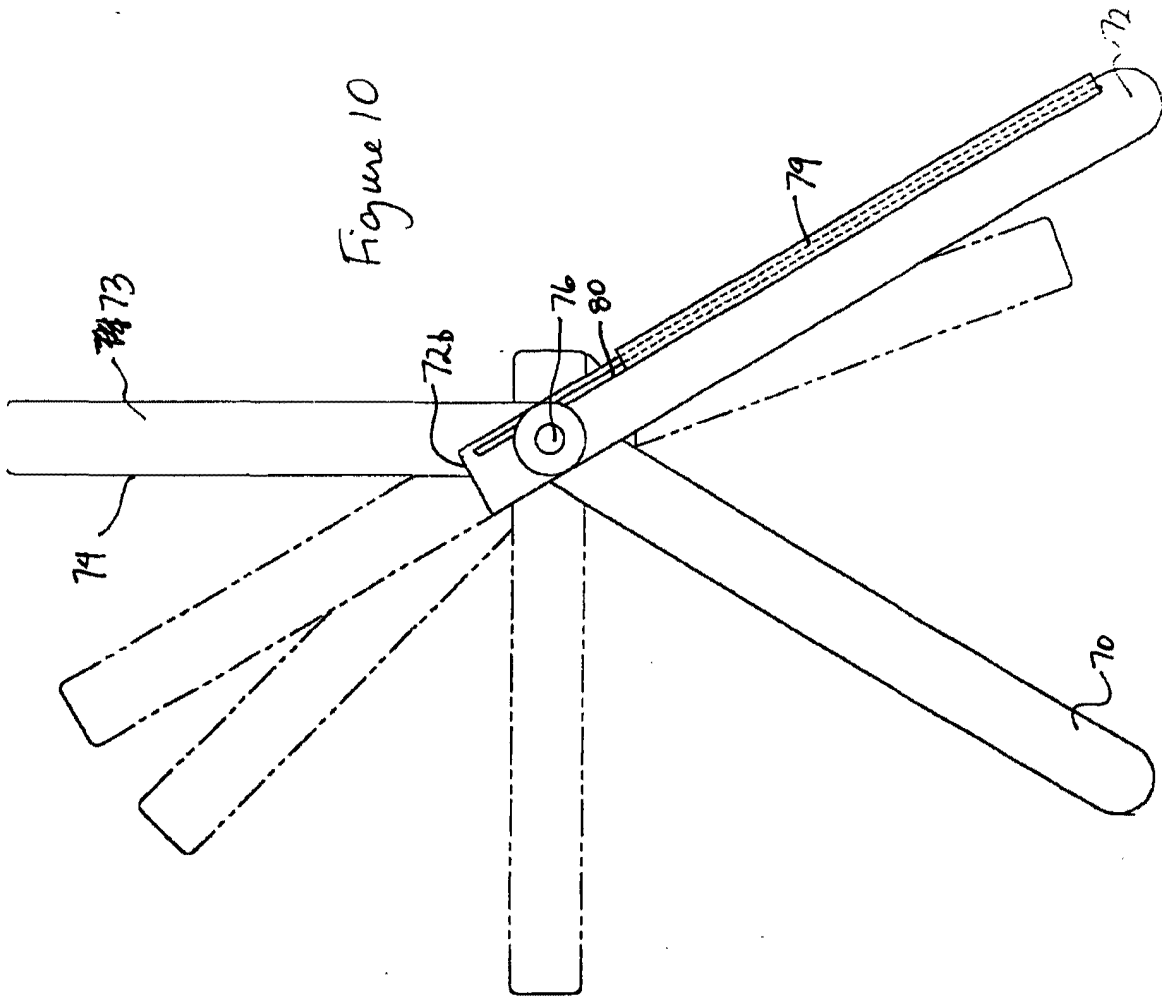
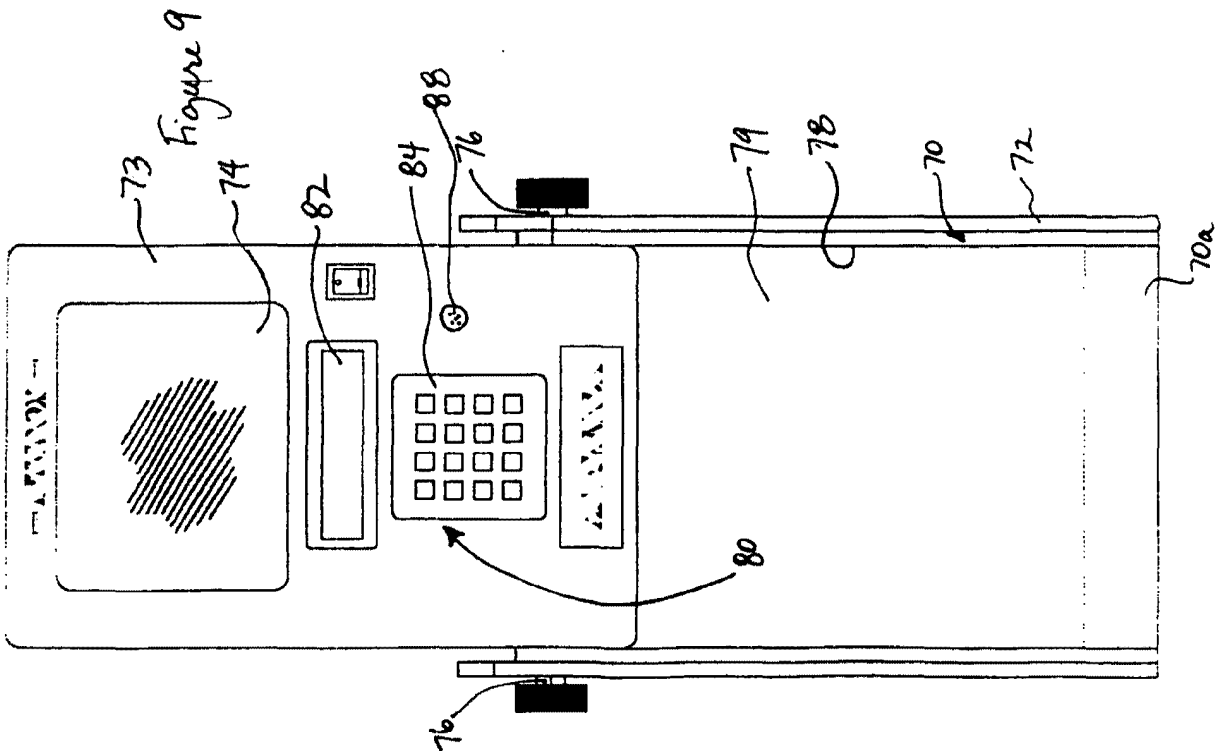


FIGURE 5









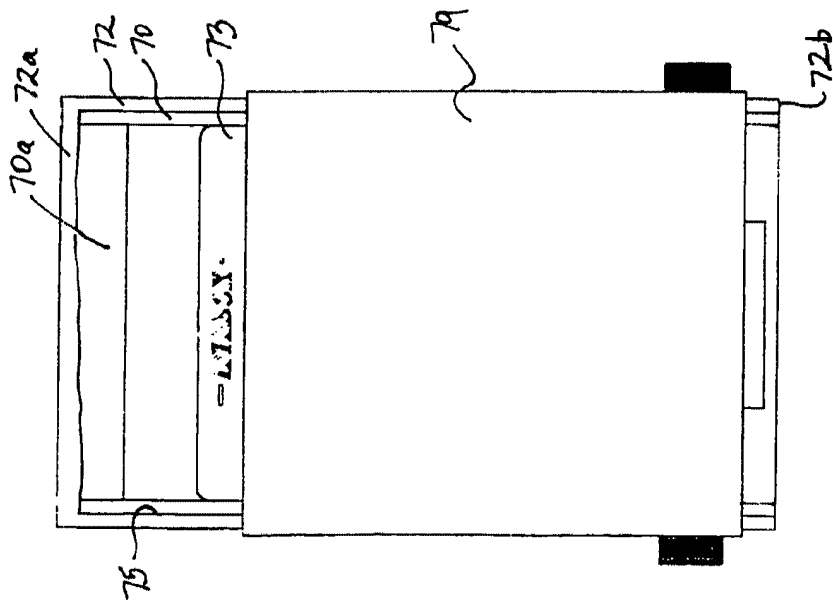


Figure 11

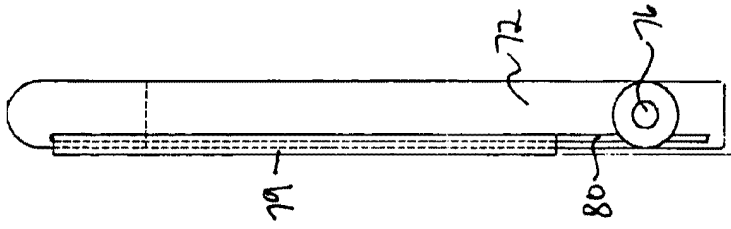


Figure 12

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537
23971	7590	11/08/2004	EXAMINER	
BENNETT JONES C/O MS ROSEANN CALDWELL 4500 BANKERS HALL EAST 855 - 2ND STREET, SW CALGARY, AB T2P 4K7 CANADA			ROBINSON, DANIEL LEON	
			ART UNIT	PAPER NUMBER
			3742	
DATE MAILED: 11/08/2004				

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

Notice of Allowability

Application No.

09/710,782

Applicant(s)

PEDERSON ET AL

Examiner

Daniel I. Robinson

Art Unit

3742

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

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

1. ☒ This communication is ~~responsive to interview of 6-17-2004~~ *supplemental to the notice of Allowability*
2. ☒ The allowed claim(s) is/are 1-4, 6-24 and 26-36.
3. ☒ The drawings filed on 03 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4-30-2004 *10-7-2004*
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____



PTO/SB/08A (08-03)

Approved for use through 07/31/2008. OMB 0651-0031

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

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1
-------	---	----	---

Complete if Known

Application Number	09/710,782
Filing Date	11/13/2000
First Named Inventor	Pederson
Art Unit	3742
Examiner Name	Robinson
Attorney Docket Number	44261-4

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date	
Considered	

10-25-2004

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
09/710,782		3742	37M2

Change of Address/Power of Attorney

The following fields have been set to Customer Number 23971 on

- Correspondence Address
- Power of Attorney
- Maintenance Fee Address

The address of record for Customer Number 23971 is:

BENNETT JONES
C/O MS ROSEANN CALDWELL
4500 BANKERS HALL EAST
855 - 2ND STREET, SW
CALGARY, AB T2P 4K7

The Practitioners of record for Customer Number 23971 are:

PTO INSTRUCTIONS:

Please take the following action when the correspondence address has been changed to a customer number:

- 1) Add 'ADDRESS CHANGE TO CUSTOMER NUMBER' on the next available content line of the File Jacket.
- 2) Put a line through the old address on the File Jacket and enter the Customer Number as the new address.
- 3) File this Notice in the File Jacket.

Please take the following action when the correspondence address has NOT been changed:

- 1) File this Notice in the File Jacket

● PRINTER RUSH ●

(PTO ASSISTANCE)

Application : <u>09/710,782</u>	Examiner : <u>Robinson</u>	GAU : <u>3742</u>
From: <u>D. Muller</u>	Location: <u>(IDC) FMF FDC</u>	Date: <u>1-6-05</u>
Tracking #: <u>06004944</u>		Week Date: <u>8-30-04</u>

DOC CODE	DOC DATE	MISCELLANEOUS
☐ 1449	_____	☐ Continuing Data
☐ IDS	_____	☐ Foreign Priority
☐ CLM	_____	☐ Document Legibility
☒ IIFW	<u>8-24-04</u>	☐ Fees
☐ SRFW	_____	☐ Other
☐ DRW	_____	
☐ OATH	_____	
☐ 312	_____	
☐ SPEC	_____	

[RUSH] MESSAGE: Issuing classification form (IIFW)
(8-24-04) International classification is
missing subclass. please provide subclass.

Thank you.
D. Muller

[XRUSH] RESPONSE: _____

INITIALS:

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.
 REV 10/04

PRINTER RUSH
(PTO ASSISTANCE)

Application : 09/710,782 Examiner : Robinson GAU : 3742

From: D. Muller Location: (IDC) FMF FDC Date: 1-6-05

Tracking #: 06004944 Week Date: 8-30-04

DOC CODE	DOC DATE	MISCELLANEOUS
☐ 1449		☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
☒ IIFW	<u>8-24-04</u>	☐ Fees
☐ SRFW		☐ Other
☐ DRW		
☐ OATH		
☐ 312		
☐ SPEC		

[RUSH] MESSAGE: Issuing classification form (IIFW)
(8-24-04) International classification is
missing subclass. please provide subclass.

D.K. JCR

Thank you.
D. Muller

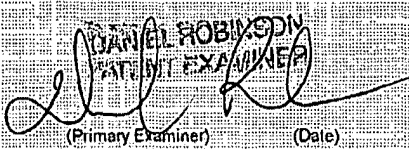
[XRUSH] RESPONSE: _____

INITIALS: _____

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

Issue Classification 	Application N .	Applicant(s)
	09/710,782	PEDERSON ET AL.
	Examiner	Art Unit
	Daniel I. Robinson	3742

ISSUE CLASSIFICATION									
ORIGINAL				CROSS REFERENCE(S)					
CLASS	SUBCLASS	CLASS	SUBCLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
607	88	607	90						
INTERNATIONAL CLASSIFICATION									
A61N 33 00									
(Assistant Examiner) (Date)				 DANIEL ROBINSON PATENT EXAMINER (Primary Examiner) (Date)				Total Claims Allowed 34	
(Legal Instruments Examiner) (Date)								O.G. Print Claim(s) 1, 19	

☒ Claims renumbered in the same order as presented by applicant				☐ CPA				☐ T.D.				☐ R.1.47			
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original		
	1		31		61		91		121		151		181		
	2		32		62		92		122		152		182		
	3		33		63		93		123		153		183		
	4		34		64		94		124		154		184		
	5		35		65		95		125		155		185		
	6		36		66		96		126		156		186		
	7		37		67		97		127		157		187		
	8		38		68		98		128		158		188		
	9		39		69		99		129		159		189		
	10		40		70		100		130		160		190		
	11		41		71		101		131		161		191		
	12		42		72		102		132		162		192		
	13		43		73		103		133		163		193		
	14		44		74		104		134		164		194		
	15		45		75		105		135		165		195		
	16		46		76		106		136		166		196		
	17		47		77		107		137		167		197		
	18		48		78		108		138		168		198		
	19		49		79		109		139		169		199		
	20		50		80		110		140		170		200		
	21		51		81		111		141		171		201		
	22		52		82		112		142		172		202		
	23		53		83		113		143		173		203		
	24		54		84		114		144		174		204		
	25		55		85		115		145		175		205		
	26		56		86		116		146		176		206		
	27		57		87		117		147		177		207		
	28		58		88		118		148		178		208		
	29		59		89		119		149		179		209		
	30		60		90		120		150		180		210		



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,782	11/13/2000	Larry V. Pederson	44261-4	5537
23971	7590	03/04/2005		
BENNETT JONES C/O MS ROSEANN CALDWELL 4500 BANKERS HALL EAST 855 - 2ND STREET, SW CALGARY, AB T2P 4K7 CANADA			EXAMINER ROBINSON, DANIEL LEON	
			ART UNIT 3742	PAPER NUMBER
DATE MAILED: 03/04/2005				

PRIORITY ACKNOWLEDGMENT

- ☒ 1. Receipt is acknowledged of priority papers submitted under 35 U.S.C. 119. The papers have been placed of record in the file.
- ☐ 2. Applicant's claim for priority, based on papers filed in parent Application Number _____ submitted under 35 U.S.C. 119, is acknowledged.
- ☐ 3. The priority papers, submitted _____, after payment of the issue fee are
- ☐ acknowledged
- While the priority claim or certified copy filed will be placed in the file record, neither will be reviewed and the patent when published will not include the priority claim.
- See 37 CFR 1.55(a)(2).
- ☐ not acknowledged since the processing fee in 37 CFR 1.17(i) has not been received.
- ☐ 4. For utility and plant applications filed on or after November 29, 2000, the priority claim is not entered because the claim was not presented within the time limit required by 37 CFR 1.55(a)(1). A petition to accept a delayed claim for priority under 35 U.S.C. 119(a) - (d) or (f), or 365(a) may be filed. See 37 CFR 1.55(c) and MPEP 201.14(a).

Fol

Manager, Publishing Division
Office of Patent Publication
(703) 305-8388

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

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

Application Number	09/710,782
Filing Date	11-13-2000
First Named Inventor	Larry V. Pederson, et al.
Title	LIGHT THERAPY DEVICE
Art Unit	3742
Examiner Name	ROBINSON, DANIEL LEON
Attorney Docket Number	030293.00099

SIGNATURE of Applicant or Patent Practitioner

Signature	/Craig A. Gelfound/	Date (Optional)	
Name	Craig A. Gelfound	Registration Number	41,032
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

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



*Total of 3 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

POWER OF ATTORNEY BY APPLICANT

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

Application Number
Filing Date

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

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

68543

OR

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

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

The address associated with the above-mentioned Customer Number

OR

The address associated with Customer Number:

OR

Firm or Individual Name
Address
City
State
Zip
Country
Telephone
Email

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

THE LITEBOOK COMPANY, LTD.

- Inventor or Joint Inventor (title not required below)
Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

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

Signature
Date (Optional)
Name
Title

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

Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

Electronic Acknowledgement Receipt

EFS ID:	38010811
Application Number:	09710782
International Application Number:	
Confirmation Number:	5537
Title of Invention:	LIGHT THERAPY DEVICE
First Named Inventor/Applicant Name:	Larry V. Pederson
Customer Number:	23971
Filer:	Craig A. Gelfound/Reynaldo Gallardo
Filer Authorized By:	Craig A. Gelfound
Attorney Docket Number:	44261-4
Receipt Date:	12-DEC-2019
Filing Date:	13-NOV-2000
Time Stamp:	13:33:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		030293_00099_POA_Statement_Under_37CFR373.pdf	470115	yes	4
			449b3ba5c4c02e7324bc5cc460da445b93c2f418		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Assignee showing of ownership per 37 CFR 3.73	3	4
	Power of Attorney	1	2
Warnings:			
Information:			
Total Files Size (in bytes):		470115	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

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

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Larry V. PedersonApplication No./Patent No.: 09/710,782Filed/Issue Date: 11-13-2000Titled: LIGHT THERAPY DEVICETHE LITEBOOK COMPANY, LTD., a Corporation

(Name of Assignee)

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

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

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

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

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

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

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

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

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: PEDERSON, LARRY V. To: LITEBOOK COMPANY LTDThe document was recorded in the United States Patent and Trademark Office at
Reel 011594, Frame 0018, or for which a copy thereof is attached.2. From: PEDERSON, LARRY V. To: LITEBOOK COMPANY, LTD., THEThe document was recorded in the United States Patent and Trademark Office at
Reel 015912, Frame 0436, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

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



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

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

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

/Craig A. Gelfound/

Signature

Craig A. Gelfound

Printed or Typed Name

December 12, 2019

Date

41,032

Title or Registration Number



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/710,782	11/13/2000	Larry V. Pederson	44261-4

CONFIRMATION NO. 5537

POWER OF ATTORNEY NOTICE



OC000000113987686

23971
BENNETT JONES LLP
C/O MS ROSEANN CALDWELL
4500 BANKERS HALL EAST
855 - 2ND STREET, SW
CALGARY, AB T2P 4K7
CANADA

Date Mailed: 01/16/2020

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/12/2019.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

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

/deelliott/



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/710,782	11/13/2000	Larry V. Pederson	030293.00099

68543
Arent Fox LLP - Los Angeles
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

CONFIRMATION NO. 5537
POA ACCEPTANCE LETTER



Date Mailed: 01/16/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/12/2019.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

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

/deelliott/